

SECTION **LT**
LIGHTING SYSTEM

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PRECAUTIONS

PRECAUTIONS

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

EKS00N1L

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. 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

EKS00L4H

- 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

EKS00L4I

When you read wiring diagrams, refer to the following:

- Refer to [GI-15, "How to Read Wiring Diagrams"](#) .
- Refer to [PG-4, "POWER SUPPLY ROUTING CIRCUIT"](#) .

When you perform trouble diagnosis, refer to the following:

- Refer to [GI-11, "HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSES"](#) .
- Refer to [GI-24, "How to Perform Efficient Diagnosis for an Electrical Incident"](#) .

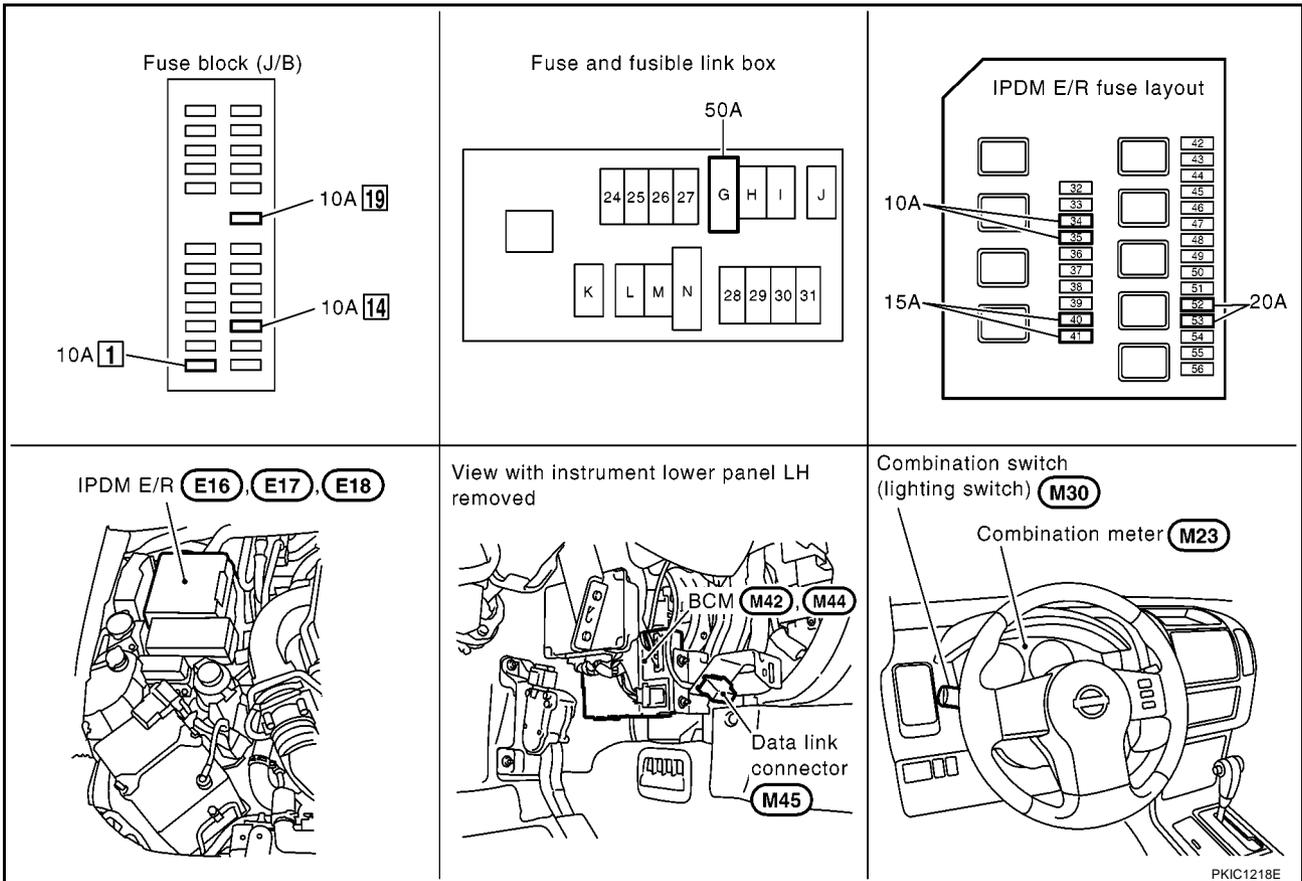
HEADLAMP - CONVENTIONAL TYPE-

PF26010

HEADLAMP - CONVENTIONAL TYPE-

Component Parts and Harness Connector Location

EKS00P7H



System Description

EKS00P7I

The 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) through the CAN communication. 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 ignition relay (located in IPDM E/R)
- to headlamp high relay (located in IPDM E/R) and
- to headlamp low relay (located in IPDM E/R), from battery directly,
- through 50A fusible link (letter G, located in fuse and fusible link box)
- to BCM terminal 57,
- through 20A fuse (No. 52, located in IPDM E/R) and
- through 20A fuse (No. 53, located in IPDM E/R)
- to CPU (located in IPDM E/R),
- through 10A fuse (No. 19, located in fuse and fusible link box)
- to combination meter terminal 3.

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

- to ignition relay (located in IPDM E/R),
- through 10A fuse [No. 1, located in fuse block (J/B)]
- to BCM terminal 3,
- through 10A fuse [No. 14, located in fuse block (J/B)]

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HEADLAMP -CONVENTIONAL TYPE-

- to combination meter terminal 16.

Ground is supplied at all times

- to BCM terminal 55 and
- to combination meter terminal 23
- through grounds M21, M80 and M83,
- to IPDM E/R terminals 38 and 59
- through grounds E21, E41 and E61.

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 through the CAN communication. The CPU of the IPDM E/R controls the headlamp low relay coil. When energized, this relay directs power

- through 15A fuse (No. 41, located in IPDM E/R)
- through IPDM E/R terminal 54
- to front combination lamp RH terminal 1,
- through 15A fuse (No. 40, located in IPDM E/R)
- through IPDM E/R terminal 52
- to front combination lamp LH terminal 1.

Ground is supplied

- to front combination lamp RH and LH terminals 3
- through grounds E21, E41 and E61.

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 through the CAN communication. The CPU of the IPDM E/R controls the headlamp high relay coil. When energized, this relay directs power

- through 10A fuse (No. 34, located in IPDM E/R)
- through IPDM E/R terminal 56
- to front combination lamp RH terminal 2,
- through 10A fuse (No. 35, located in IPDM E/R)
- through IPDM E/R terminal 55
- to front combination lamp LH terminal 2.

Ground is supplied

- to front combination lamp RH and LH terminals 3
- through grounds E21, E41 and E61.

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

Combination meter that received high beam request signal by BCM through the CAN communication makes a high beam indicator lamp turn on in combination meter.

FRIENDLY LIGHTING FUNCTION

This function starts timer function of BCM by operating passing switch, and illuminates headlamps (LOW beam) for a given length of time.

Headlamps (LOW beam) stay ON for a given length of time by operating passing switch when ignition switch is OFF and lighting switch is OFF.

Headlamps (LOW beam) stays ON for two minutes at a maximum by operating passing switch repeatedly.

CONSULT-II is capable of setting a lighting time. Refer to [LT-16, "WORK SUPPORT"](#) .

CAN Communication System Description

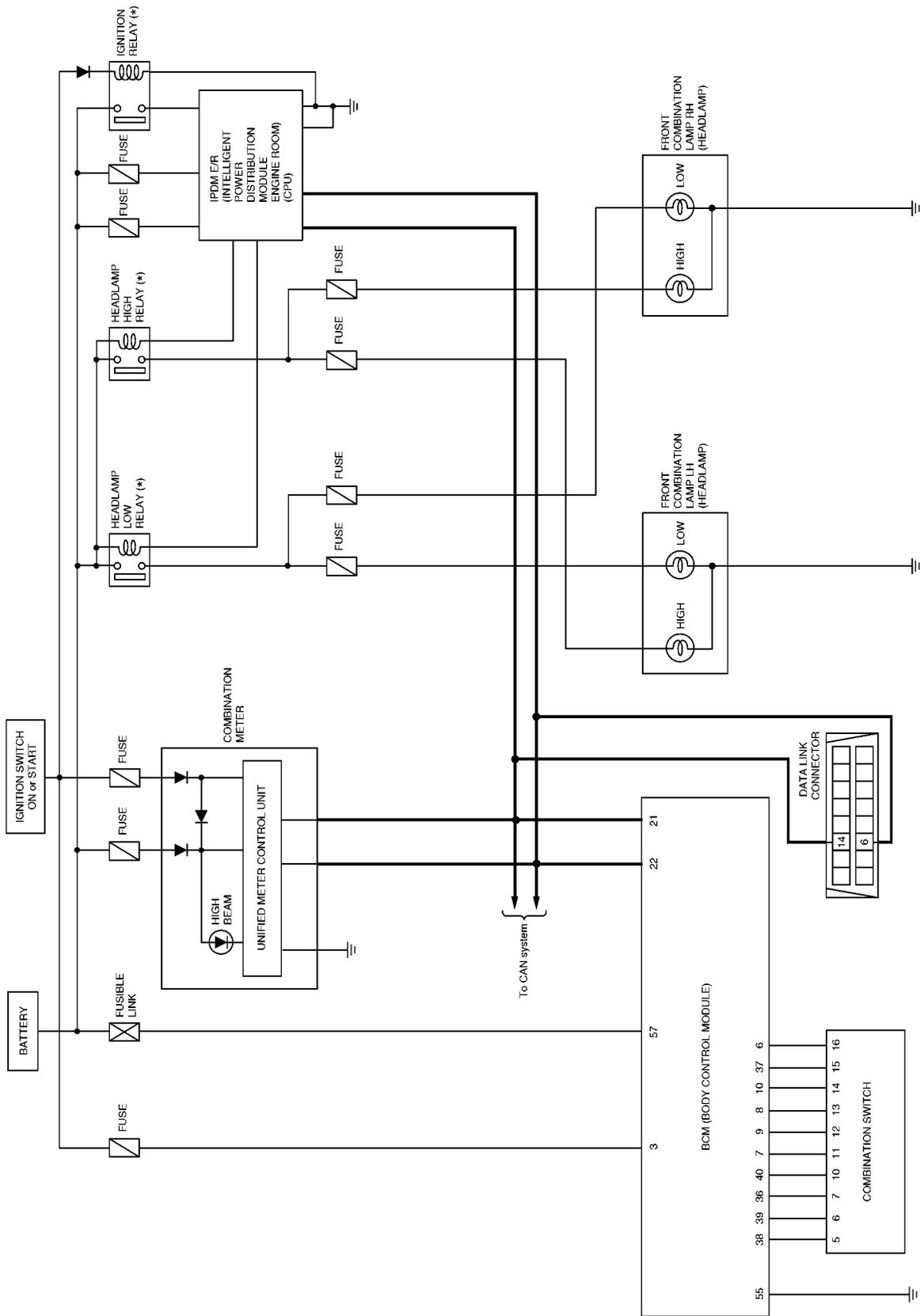
Refer to [LAN-23, "CAN COMMUNICATION"](#) .

EKS00P7J

HEADLAMP - CONVENTIONAL TYPE-

Schematic

EKS00P7K



* : This relay is built into the IPDM E/R (Intelligent power distribution module - engine room).

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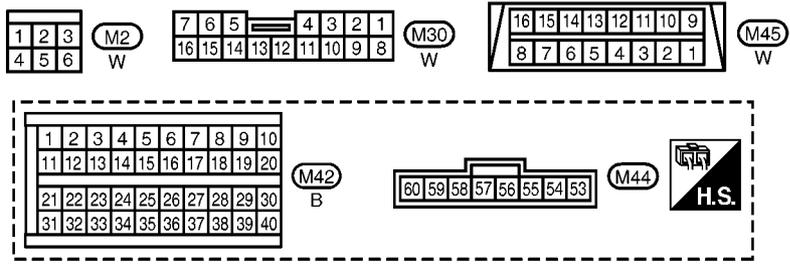
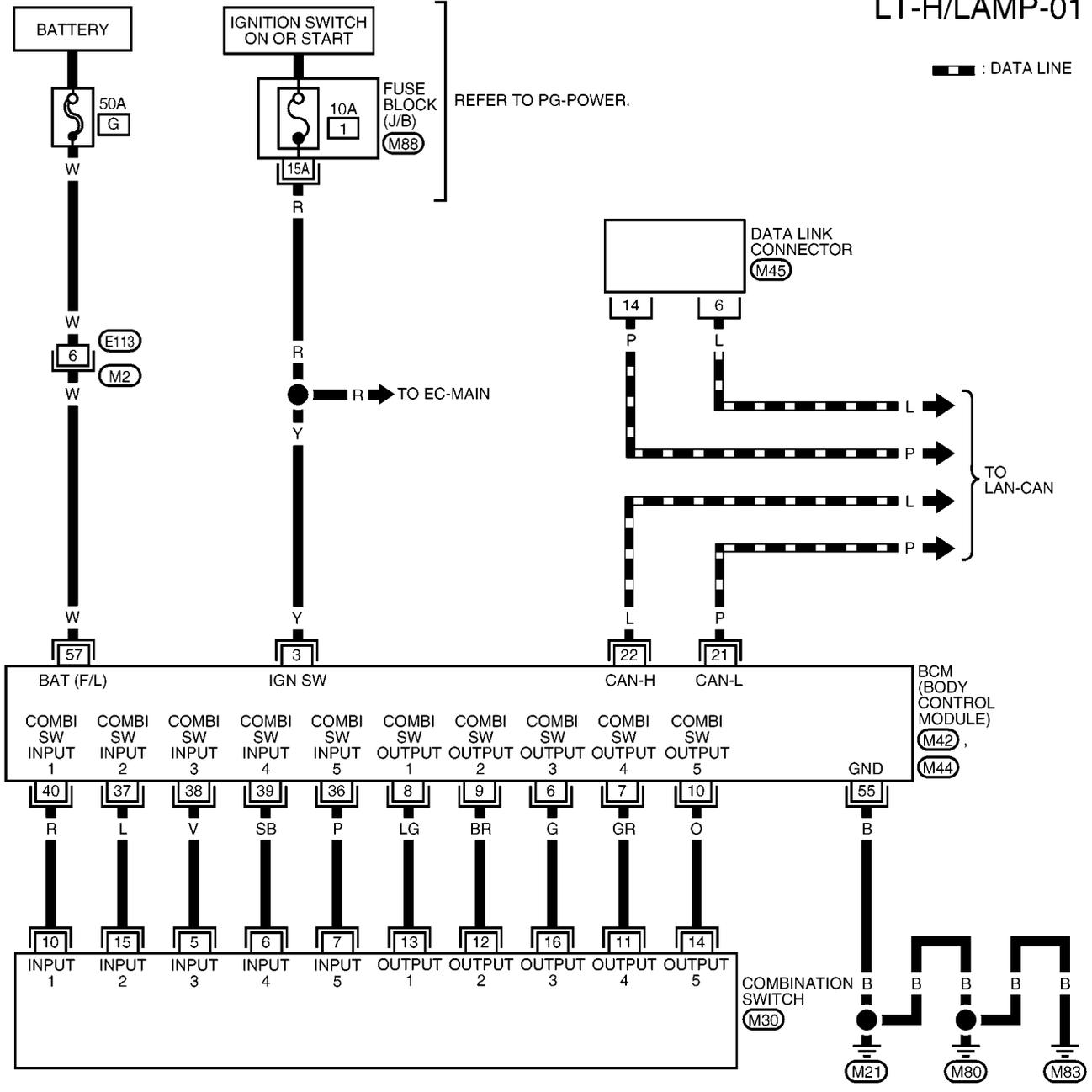
HEADLAMP - CONVENTIONAL TYPE-

EKS00P7L

Wiring Diagram - H/LAMP -

LT-H/LAMP-01

▬ : DATA LINE



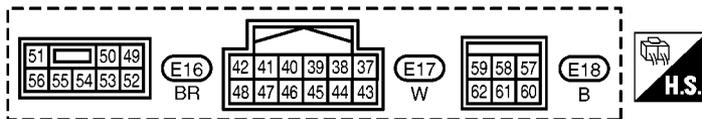
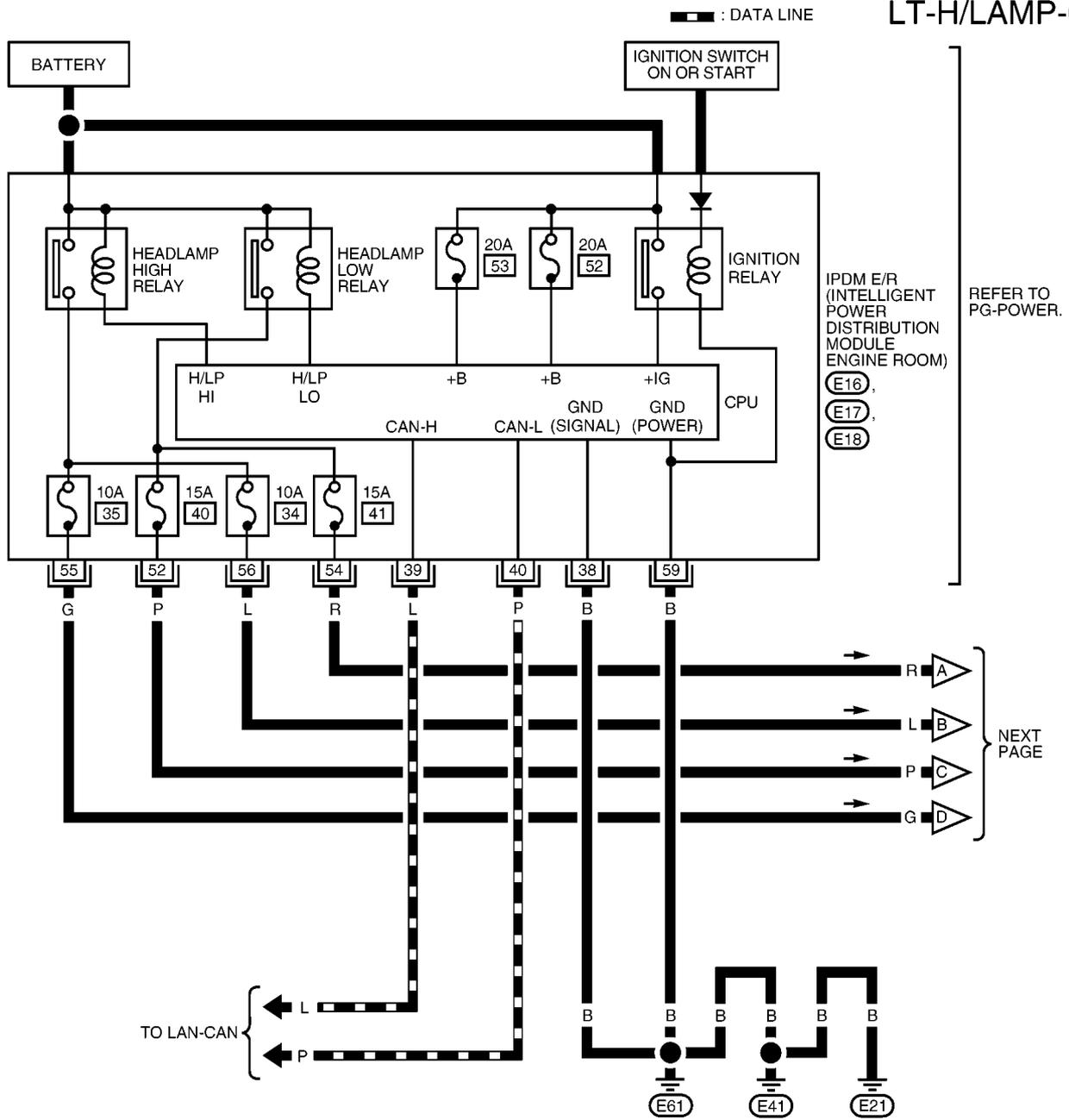
REFER TO THE FOLLOWING.
 (M88) - FUSE BLOCK- JUNCTION BOX (J/B)

MKWA3553E

HEADLAMP - CONVENTIONAL TYPE-

LT-H/LAMP-02

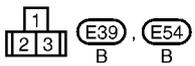
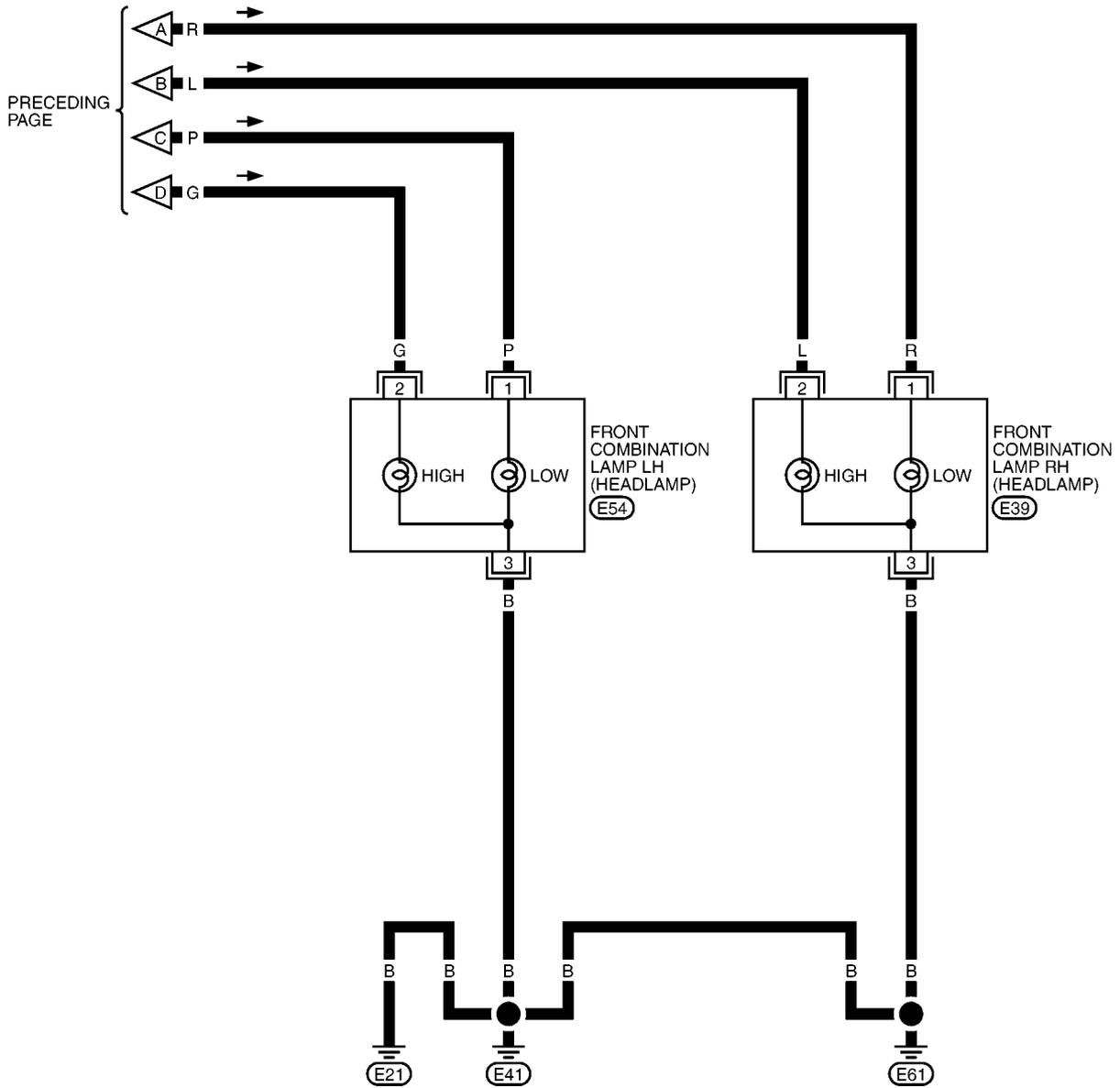
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HEADLAMP - CONVENTIONAL TYPE-

LT-H/LAMP-03

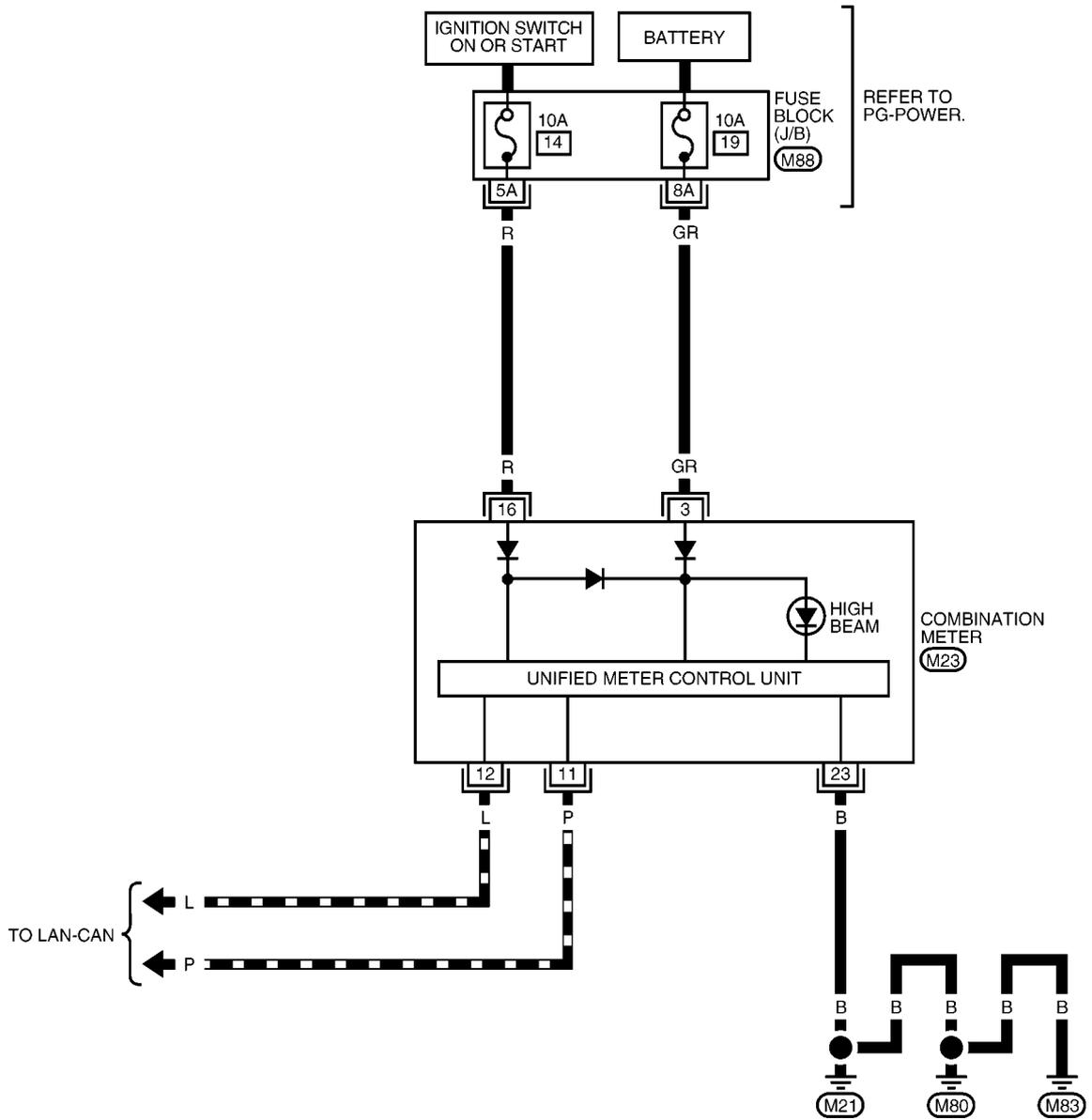


MKWA3555E

HEADLAMP -CONVENTIONAL TYPE-

LT-H/LAMP-04

▬ : DATA LINE



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	M23
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	W

REFER TO THE FOLLOWING.

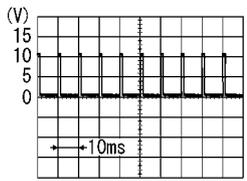
(M88) -FUSE BLOCK-JUNCTION BOX (J/B)

MKWA3556E

HEADLAMP -CONVENTIONAL TYPE-

Terminals and Reference Value for BCM

EKS00P7M

Terminal No.	Wire color	Signal name	Measuring condition		Reference value	
			Ignition switch	Operation or condition		
3	Y	Ignition switch (ON)	ON	—	Battery voltage	
6	G	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right;">PKIB4958J</p>	
7	GR	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4		
8	LG	Combination switch output 1	ON	Lighting, turn, wiper OFF Wiper dial position 4		
9	BR	Combination switch output 2	ON	Lighting, turn, wiper OFF Wiper dial position 4		
10	O	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4		
21	P	CAN- L	—	—		—
22	L	CAN- H	—	—		—
36	P	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4		Approx. 0V
37	L	Combination switch input 2	ON	Lighting, turn, wiper OFF Wiper dial position 4		
38	V	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4		
39	SB	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4		
40	R	Combination switch input 1	ON	Lighting, turn, wiper OFF Wiper dial position 4		
55	B	Ground	ON	—	Approx. 0V	
57	W	Battery power supply (fusible link)	OFF	—	Battery voltage	

Terminals and Reference Values for IPDM E/R

EKS00P7N

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
38	B	Ground	ON	—	Approx. 0V
39	L	CAN- H	—	—	—
40	P	CAN- L	—	—	—
52	P	Headlamp low (LH)	ON	Lighting switch 2ND position OFF	Approx. 0V
				ON	Battery voltage
54	R	Headlamp low (RH)	ON	Lighting switch 2ND position OFF	Approx. 0V
				ON	Battery voltage
55	G	Headlamp high (LH)	ON	Lighting switch HIGH or PASS position OFF	Approx. 0V
				ON	Battery voltage
56	L	Headlamp high (RH)	ON	Lighting switch HIGH or PASS position OFF	Approx. 0V
				ON	Battery voltage
59	B	Ground	ON	—	Approx. 0V

HEADLAMP -CONVENTIONAL TYPE-

How to Proceed With Trouble Diagnosis

EKS00P70

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-5, "System Description"](#) .
3. Perform the Preliminary Check. Refer to [LT-13, "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

EKS00P7P

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES OR FUSIBLE LINK

Check for blown fuses or fusible link.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	G
	Ignition switch ON or START position	1
IPDM E/R	Battery	34
		35
		40
		41
		52
		53
Combination meter	Battery	19
	Ignition switch ON or START position	14

Refer to [LT-8, "Wiring Diagram - H/LAMP -"](#) .

OK or NG

OK >> GO TO 2.

NG >> If fuse or fusible link is blown, be sure to eliminate cause of malfunction before installing new fuse or fusible link. Refer to [PG-4, "POWER SUPPLY ROUTING CIRCUIT"](#) .

HEADLAMP -CONVENTIONAL TYPE-

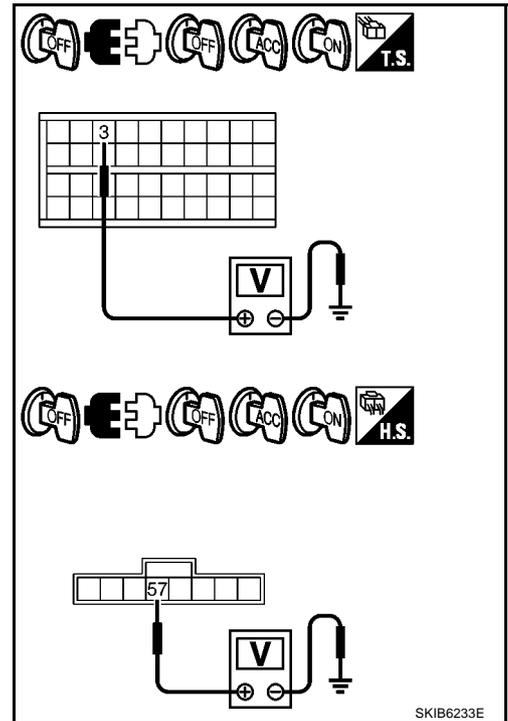
2. CHECK POWER SUPPLY CIRCUIT

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

Terminal (+)		Terminal (-)	Ignition switch position		
BCM connector	Terminal		OFF	ACC	ON
M42	3	Ground	0V	0V	Battery voltage
M44	57		Battery voltage	Battery voltage	Battery voltage

OK or NG

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



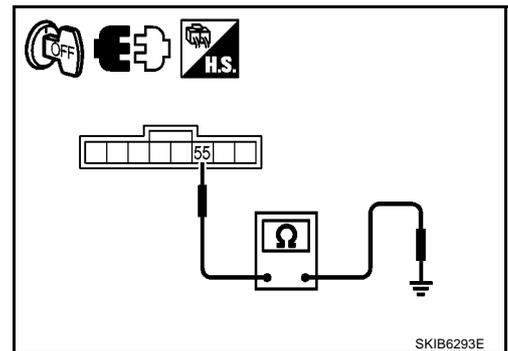
3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

BCM connector	Terminal	Ground	Continuity
M44	55		Yes

OK or NG

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



HEADLAMP -CONVENTIONAL TYPE-

CONSULT-II Functions (BCM)

EKS00P7Q

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

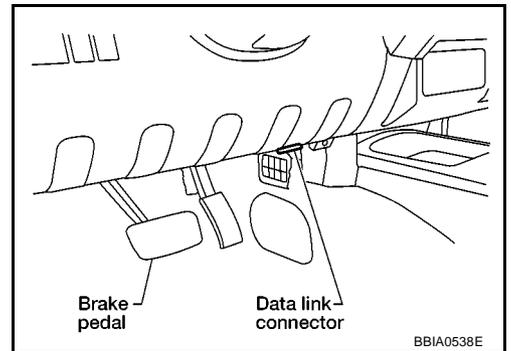
BCM diagnosis part	Diagnosis mode	Description
HEADLAMP	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
BCM	SELF-DIAG RESULTS	BCM performs self-diagnosis of CAN communication.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.

CONSULT-II BASIC OPERATION

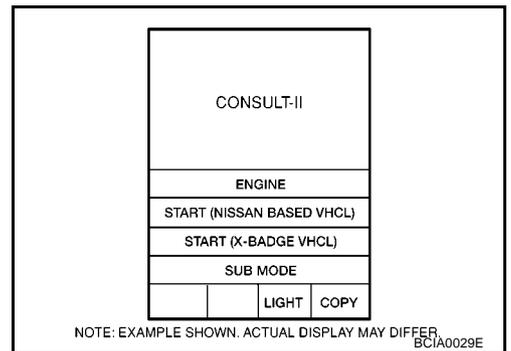
CAUTION:

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

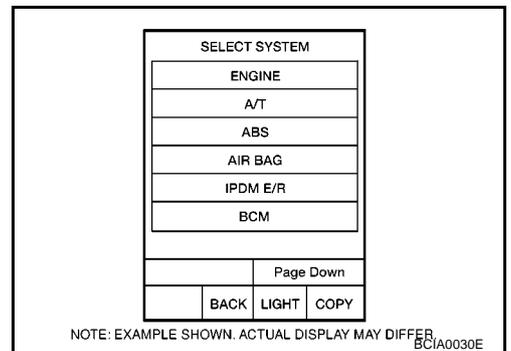
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, and then turn ignition switch ON.



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

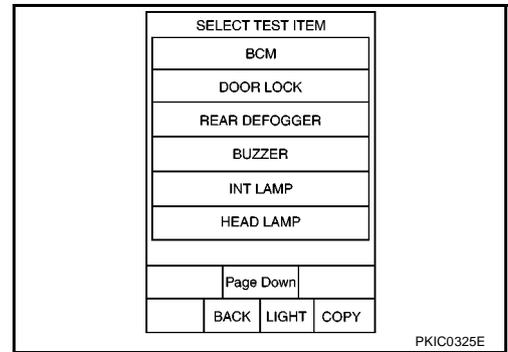


3. Touch "BCM" on "SELECT SYSTEM" screen. If "BCM" is not indicated, refer to [GI-50, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



HEADLAMP -CONVENTIONAL TYPE-

4. Touch "HEADLAMP" 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 "HEAD LIGHT TIMER" on "SELECT WORK ITEM" screen.
4. Touch "START".
5. Touch "MODE 1-2" of setting to be changed.
6. Touch "CHANGE SET".
7. The setting will be changed and "CUSTOMIZING COMPLETED" will be displayed.
8. Touch "END".

Work Support Setting Item

Work item	Description
HEAD LIGHT TIMER	Friendly lighting function headlamp OFF timer period can be changed in this time. Selects friendly lighting function headlamp OFF timer period two modes. ● MODE 1 (10sec.)/ MODE 2 (30sec.) ^{NOTE}

NOTE:

Factory setting

DATA MONITOR

Operation Procedure

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

ALL SIGNALS	Monitors all the signals.
SELECTION FROM MENU	Selects items and monitors them.

4. When "SELECTION FROM MENU" is selected, touch individual items to be monitored. When "ALL SIGNALS" is selected, all the items will be monitored.
5. Touch "START".
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 status (ignition switch IGN position: ON/other: OFF) of ignition switch judged from the ignition switch signal.
ACC ON SW "ON/OFF"	Displays status (ignition switch ACC or IGN position: ON/other: OFF) of ignition switch judged from the ignition switch signal.
HI BEAM SW "ON/OFF"	Displays status (lighting switch high beam position: ON/other: OFF) of high beam switch judged from the lighting switch signal.

HEADLAMP -CONVENTIONAL TYPE-

Monitor item	Contents
HEAD LAMP SW 1	"ON/OFF" Displays status (lighting switch 2ND position: ON/other: OFF) of headlamp 1 switch judged from the lighting switch signal.
HEAD LAMP SW 2	"ON/OFF" Displays status (lighting switch 2ND position: ON/other: OFF) of headlamp 2 switch judged from the lighting switch signal.
LIGHT SW 1ST	"ON/OFF" Displays status (lighting switch 1ST or 2ND position: ON/other: OFF) of lighting switch 1ST position switch judged from the lighting switch signal.
PASSING SW	"ON/OFF" Displays status (lighting switch passing position: ON/other: OFF) of passing switch judged from the lighting switch signal.
FR FOG SW	"ON/OFF" Displays status (lighting switch front fog lamp ON position: ON/others: OFF) of front fog lamp switch judged from the lighting switch signal.
RR FOG SW	"ON/OFF" Displays status (lighting switch rear fog lamp ON position: ON/others: OFF) of rear fog lamp switch judged from the lighting switch signal.
DOOR SW - DR	"ON/OFF" Displays status (door is open: ON/door is closed: OFF) of driver side door switch judged from the driver side door switch signal.
DOOR SW - AS	"ON/OFF" Displays status (door is open: ON/door is closed: OFF) of passenger side door switch judged from the passenger side door switch signal.
DOOR SW - RR	"ON/OFF" Displays status (door is open: ON/door is closed: OFF) of rear door switch (RH) judged from the rear door switch (RH) signal.
DOOR SW - RL	"ON/OFF" Displays status (door is open: ON/door is closed: OFF) of rear door switch (LH) judged from the rear door switch (LH) signal.
BACK DOOR SW	"ON/OFF" Displays status (door is open: ON/door is closed: OFF) of back door switch judged from the back door switch signal.
TURN SIGNAL R	"ON/OFF" Displays status (turn signal switch right position: ON/other: OFF) of turn RH switch judged from the turn signal switch signal.
TURN SIGNAL L	"ON/OFF" Displays status (turn signal switch left position: ON/other: OFF) of turn LH switch judged from the turn signal switch signal.
CARGO LAMP SW ^{NOTE}	"OFF" —
HD LIGHT TIMER	"10 sec/ 30 sec" Displays status (MODE 1: 10 sec./ MODE 2: 30 sec.) of head light timer.
LIT-SEN FAIL ^{NOTE}	"OK" —
AUT LIGHT SYS ^{NOTE}	"OFF" —

NOTE:

This item is displayed, but cannot be monitored.

ACTIVE TEST

Operation Procedure

1. Touch "HEADLAMP" 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 "OFF" deactivates the operation.

Display Item List

Test item	Description
TAIL LAMP	Allows tail lamp relay to operate by switching ON-OFF.
HEAD LAMP (HI, LO)	Allows headlamp relay to operate by switching ON-OFF.
RR FOG LAMP	Allows rear fog lamp to operate by switching ON-OFF.
FR FOG LAMP	Allows front fog lamp relay to operate by switching ON-OFF.

HEADLAMP -CONVENTIONAL TYPE-

EKS00P7R

CONSULT-II Functions (IPDM E/R)

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

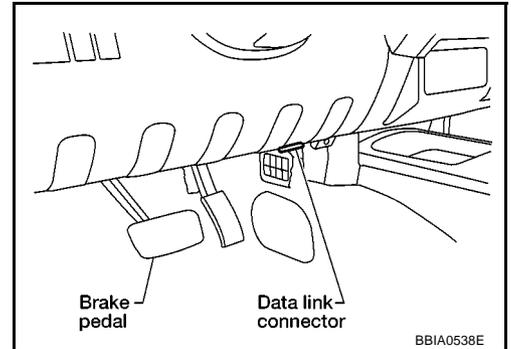
Diagnosis Mode	Description
SELF-DIAGNOSTIC RESULTS	Refer to PG-17, "SELF-DIAGNOSTIC RESULTS" .
DATA MONITOR	The input/output data of IPDM E/R is displayed in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST	IPDM E/R sends a drive signal to electronic components to check their operation.

CONSULT-II BASIC OPERATION

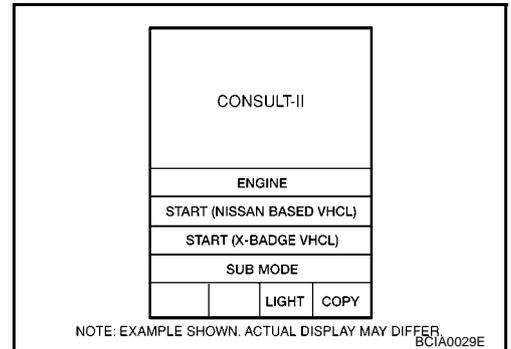
CAUTION:

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

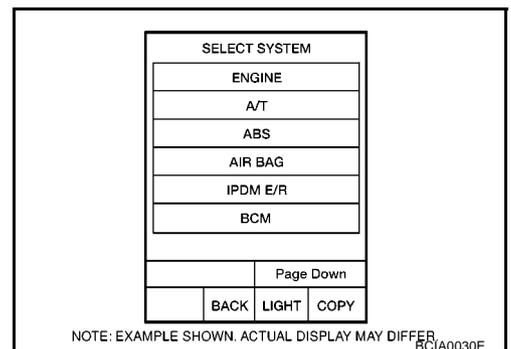
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, and then turn the ignition switch ON.



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

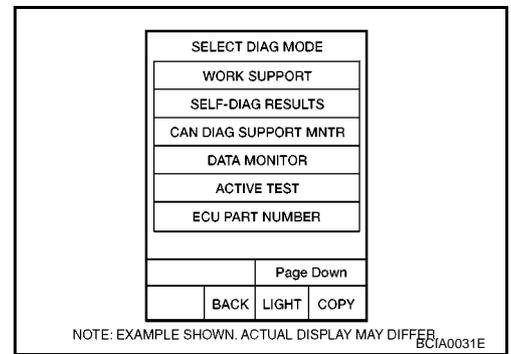


3. Touch "IPDM E/R" on "SELECT SYSTEM" screen. If "IPDM E/R" is not displayed, refer to [GI-50, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#) .



HEADLAMP -CONVENTIONAL TYPE-

- Select the desired part to be diagnosed on the “SELECT DIAG MODE” screen.



DATA MONITOR

Operation Procedure

- Touch “DATA MONITOR” on “SELECT DIAG MODE ” screen.
- Touch “ALL SIGNALS”, “MAIN SIGNALS” or “SELECT FROM MENU” on “SELECT MONITOR ITEM” screen.

ALL SIGNALS	Monitors all items.
MAIN SIGNALS	Monitor the predetermined item.
SELECTION FROM MENU	Selects items and monitors them.

- When “SELECTION FROM MENU” is selected, touch individual items to be monitored. In “ALL SIGNALS”, all items are monitored. In “MAIN SIGNALS”, predetermined items are monitored.
- Touch “START”.
- Touch “RECORD” while monitoring to record the status of the item being monitored. To stop recording, touch “STOP”.

All Items, Main Items, Selection From 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
Daytime lights request* ¹	DTRL 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.
- *¹ : Vehicle without day time light system display this item, but cannot be tested.

ACTIVE TEST

Operation Procedure

- Touch “ACTIVE TEST” on “SELECT DIAG MODE” screen.
- Touch “EXTERNAL LAMPS” on “SELECT TEST ITEM” screen.
- Touch item to be tested, and check operation.
- Touch “START”.
- Touch “STOP” while testing to stop the operation.

HEADLAMP -CONVENTIONAL TYPE-

CONSULT-II screen display		Test item	Description
EXTERNAL LAMP	TAIL	Tail lamp relay operation	Allows tail lamp relay to operate by switching operation ON.
	HI, LO	Headlamp relay (HI, LO) operation	Allows headlamp relay (HI, LO) to operate by switching operation (HI, LO) ON. (Headlamp highbeam repeats ON-OFF every 1 second)
	FOG	Front fog lamp relay operation	Allows front fog lamp relay to operate by switching operation ON.
	OFF	—	Stop the active test.

Headlamp High Beam Does Not Illuminate (Both Sides)

EKS00P7S

1. CHECK COMBINATION SWITCH INPUT SIGNAL

Ⓜ With CONSULT-II

1. Select "BCM" on CONSULT-II. Select "HEAD LAMP" on "SELECT TEST ITEM" screen.
2. Select "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Make sure that "HI BEAM SW" turns ON-OFF linked with operation of lighting switch.

When lighting switch is HIGH position : HI BEAM SW ON

DATA MONITOR			
MONITOR			
HI BEAM SW	ON		
		RECORD	
MODE	BACK	LIGHT	COPY

PKIA7585E

ⓧ Without CONSULT-II

Refer to [LT-118, "Combination Switch Inspection"](#) .

OK or NG

OK >> GO TO 2.

NG >> Check combination switch (lighting switch). Refer to [LT-118, "Combination Switch Inspection"](#) .

2. HEADLAMP ACTIVE TEST

Ⓜ With CONSULT-II

1. Select "IPDM E/R" on CONSULT-II. Select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "EXTERNAL LAMPS" on "SELECT TEST ITEM" screen.
3. Touch "HI" screen.
4. Make sure headlamp high beam operation.

Headlamp high beam should operate (Headlamp high beam repeats ON-OFF every 1 second).

ACTIVE TEST			
EXTERNAL LAMPS		OFF	
		TAIL	
LO	HI		
FOG			
MODE	BACK	LIGHT	COPY

PKIC0936E

ⓧ Without CONSULT-II

1. Start auto active test. Refer to [PG-19, "Auto Active Test"](#) .

2. Make sure headlamp high beam operation.

Headlamp high beam should operate.

OK or NG

OK >> GO TO 3.

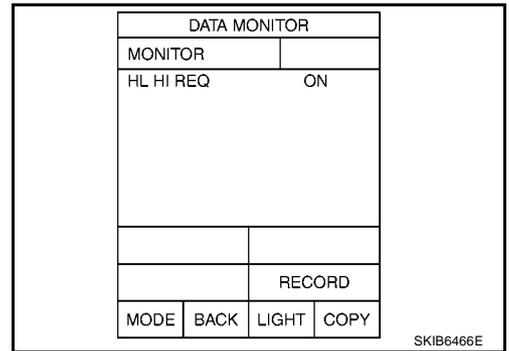
NG >> GO TO 4.

HEADLAMP -CONVENTIONAL TYPE-

3. CHECK IPDM E/R

1. Select "IPDM E/R" on CONSULT-II. 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 HI position.

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



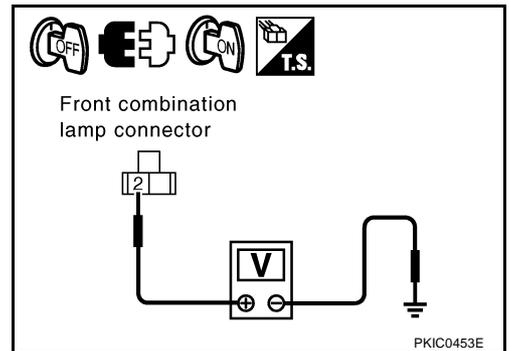
OK or NG

- OK >> Replace IPDM E/R. Refer to [PG-26, "Removal and Installation of IPDM E/R"](#) .
- NG >> Replace BCM. Refer to [BCS-17, "Removal and Installation of BCM"](#) .

4. CHECK FRONT COMBINATION LAMP INPUT SIGNAL

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

Terminal (+)		Terminal (-)	Voltage
Front combination lamp connector	Terminal		
RH	E39	2	Ground
LH	E54		
			Battery voltage



OK or NG

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

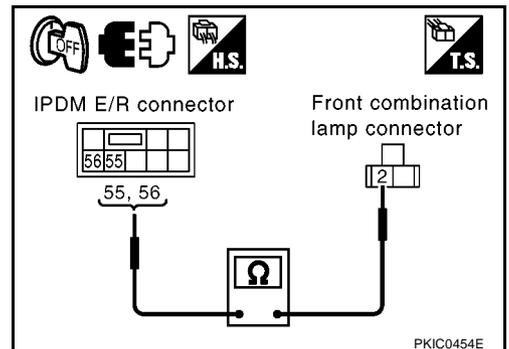
5. CHECK FRONT COMBINATION LAMP CIRCUIT

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

Circuit	IPDM E/R		Front combination lamp		Continuity
	Connector	Terminal	Connector	Terminal	
RH	E16	56	E39	2	Yes
LH		55	E54		

OK or NG

- OK >> Replace IPDM E/R. Refer to [PG-26, "Removal and Installation of IPDM E/R"](#) .
- NG >> Repair harness or connector.



HEADLAMP -CONVENTIONAL TYPE-

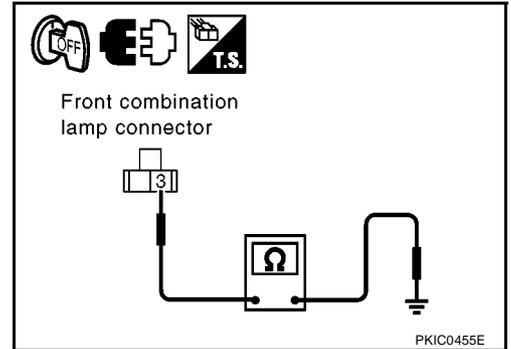
6. CHECK FRONT COMBINATION LAMP GROUND

1. Turn ignition switch OFF.
2. Check continuity between front combination lamp (RH and LH) connector and ground.

Front combination lamp connector		Terminal	Ground	Continuity
RH	E39	3		Ground
LH	E54			

OK or NG

- OK >> Check connector for connection, bend and loose fit. If it is normal, check headlamp bulb.
 NG >> Repair harness or connector.



Headlamp HI Beam Does Not Illuminate (One Side)

EKS00P7T

1. CHECK BULB

Check bulb of lamp which does not illuminate.

OK or NG

- OK >> GO TO 2.
 NG >> Replace headlamp bulb.

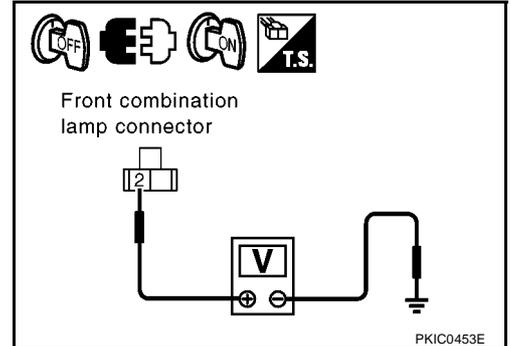
2. CHECK FRONT COMBINATION LAMP INPUT SIGNAL

1. Disconnect front combination lamp RH or LH connector.
2. Turn lighting switch to HIGH position.
3. Check voltage between front combination lamp (RH or LH) harness connector and ground.

Terminal (+)		Terminal (-)	Voltage
Front combination lamp connector	Terminal		
RH	E39		
LH	E54	2	

OK or NG

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



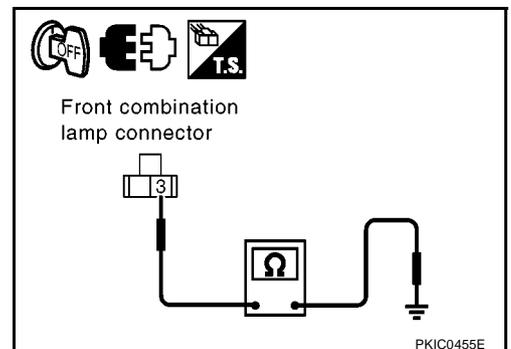
3. CHECK FRONT COMBINATION LAMP GROUND

1. Turn lighting switch OFF.
2. Check continuity between front combination lamp (RH or LH) harness connector and ground.

Front combination lamp connector		Terminal	Ground	Continuity
RH	E39	3		Ground
LH	E54			

OK or NG

- OK >> Check connector for connection, bend and loose fit.
 NG >> Repair harness or connector.



HEADLAMP -CONVENTIONAL TYPE-

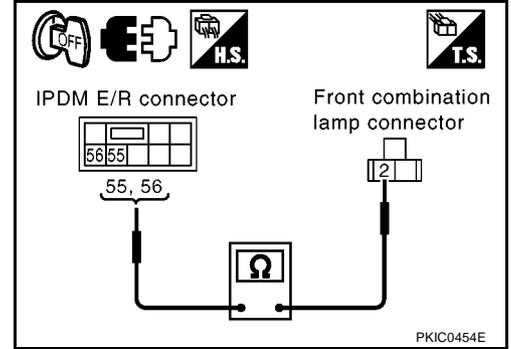
4. CHECK FRONT COMBINATION LAMP CIRCUIT

1. Turn lighting switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector and front combination lamp (RH or LH) harness connector.

Circuit	IPDM E/R		Front combination lamp		Continuity
	Connector	Terminal	Connector	Terminal	
RH	E16	56	E39	2	Yes
LH		55	E54		

OK or NG

- OK >> Replace IPDM E/R. Refer to [PG-26, "Removal and Installation of IPDM E/R"](#) .
- NG >> Repair harness or connector.



High Beam Indicator Lamp Does Not Illuminate

EKS00P7U

1. CHECK CAN COMMUNICATION

1. Select "BCM" on CONSULT-II, and "BCM" on "SELECT TEST ITEM" screen.
2. Select "SELF-DIAG RESULTS" on "SELECT DIAG MODE" screen.

Display of self-diagnostic results

- NO DTC>> Replace combination meter. Refer to [DI-27, "Removal and Installation of Combination Meter"](#) .
- CAN COMM CIRCUIT>> Refer to [BCS-16, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#) .

Headlamp LO Beam Does Not Illuminate (Both Sides)

EKS00P7V

1. CHECK COMBINATION SWITCH INPUT SIGNAL

☑ With CONSULT-II

1. Select "BCM" on CONSULT-II. Select "HEAD LAMP" on "SELECT TEST ITEM" screen.
2. Select "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Make sure that "HEAD LAMP SW 1" and "HEAD LAMP SW 2" turns ON-OFF linked with operation of lighting switch.

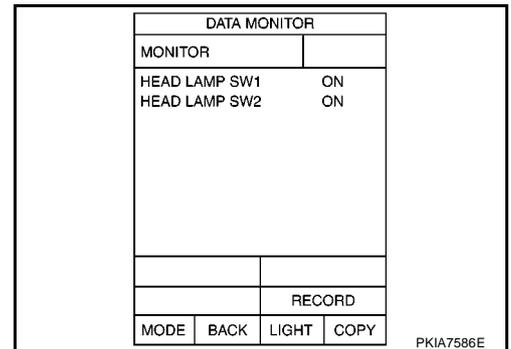
**When lighting switch is 2ND position : HEAD LAMP SW 1 ON
: HEAD LAMP SW 2 ON**

☒ Without CONSULT-II

Refer to [LT-118, "Combination Switch Inspection"](#) .

OK or NG

- OK >> GO TO 2.
- NG >> Check combination switch (lighting switch). Refer to [LT-118, "Combination Switch Inspection"](#) .



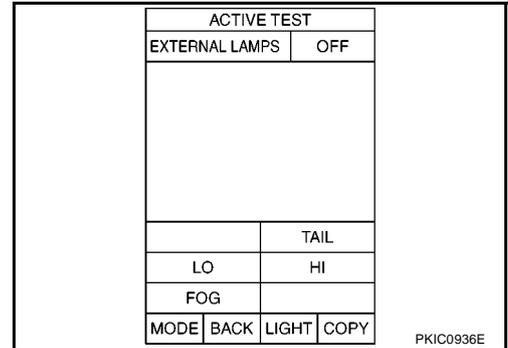
HEADLAMP -CONVENTIONAL TYPE-

2. HEADLAMP ACTIVE TEST

☑ With CONSULT-II

1. Select "IPDM E/R" on CONSULT-II. Select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "EXTERNAL LAMPS" on "SELECT TEST ITEM" screen.
3. Touch "LO" screen.
4. Make sure headlamp low beam operation.

Headlamp low beam should operate.



☒ Without CONSULT-II

1. Start auto active test. Refer to [PG-19, "Auto Active Test"](#).
2. Make sure headlamp low beam operation.

Headlamp low beam should operate.

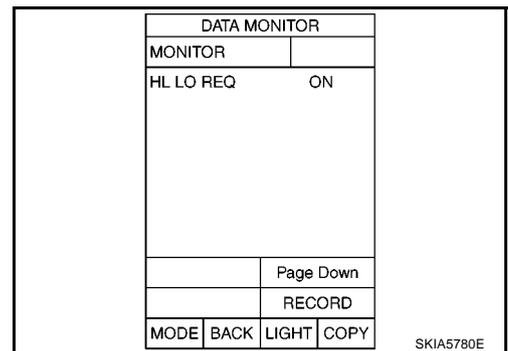
OK or NG

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

3. CHECK IPDM E/R

1. Select "IPDM E/R" on CONSULT-II. 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-26, "Removal and Installation of IPDM E/R"](#).
- NG >> Replace BCM. Refer to [BCS-17, "Removal and Installation of BCM"](#).

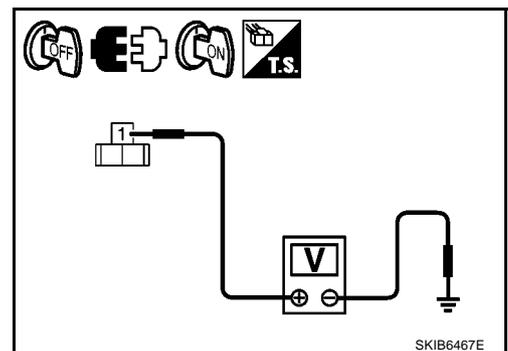
4. CHECK FRONT COMBINATION LAMP INPUT SIGNAL

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

Terminal		Terminal	Voltage
(+)			
Front combination lamp connector			
RH	E39	1	Ground
LH	E54		
			Battery voltage

OK or NG

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



HEADLAMP -CONVENTIONAL TYPE-

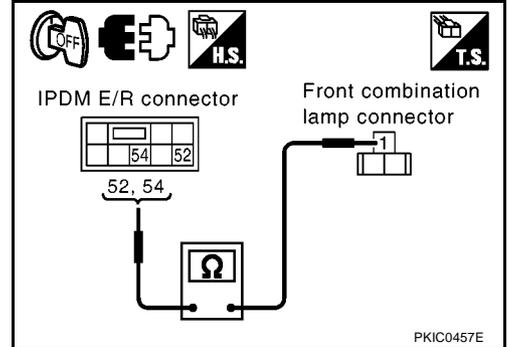
5. CHECK FRONT COMBINATION LAMP CIRCUIT

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

Circuit	IPDM E/R		Front combination lamp		Continuity
	Connector	Terminal	Connector	Terminal	
RH	E16	54	E39	1	Yes
LH		52	E54		

OK or NG

- OK >> Replace IPDM E/R. Refer to [PG-26, "Removal and Installation of IPDM E/R"](#) .
- NG >> Repair harness or connector.



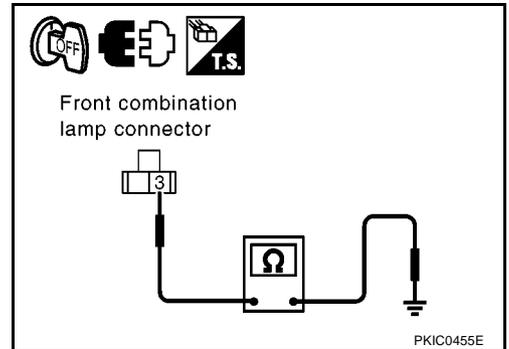
6. CHECK FRONT COMBINATION LAMP GROUND

1. Turn ignition switch OFF.
2. Check continuity between front combination lamp (RH and LH) harness connector and ground.

Front combination lamp connector		Terminal	Ground	Continuity
RH	E39	3		Yes
LH	E54			

OK or NG

- OK >> Check connector for connection, bend and loose fit. If it is normal, check headlamp bulb.
- NG >> Repair harness or connector.



Headlamp LO Beam Does Not Illuminate (One Side)

1. CHECK BULB

Check bulb of lamp which does not illuminate.

OK or NG

- OK >> GO TO 2.
- NG >> Replace headlamp bulb.

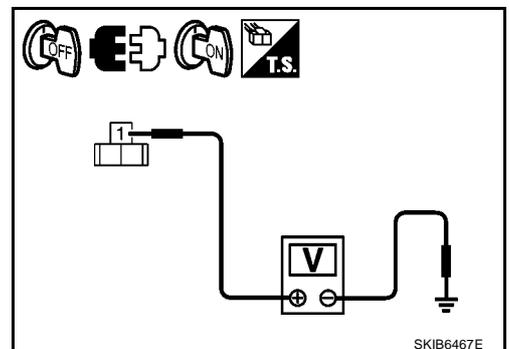
2. CHECK FRONT COMBINATION LAMP INPUT SIGNAL

1. Disconnect front combination lamp RH or LH connector.
2. Turn lighting switch to 2ND position.
3. Check voltage between front combination lamp (RH or LH) harness connector and ground.

		Terminal		Voltage
		(+)	(-)	
Front combination lamp connector		Terminal	Ground	Battery voltage
RH	E39	1		
LH	E54			

OK or NG

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



HEADLAMP -CONVENTIONAL TYPE-

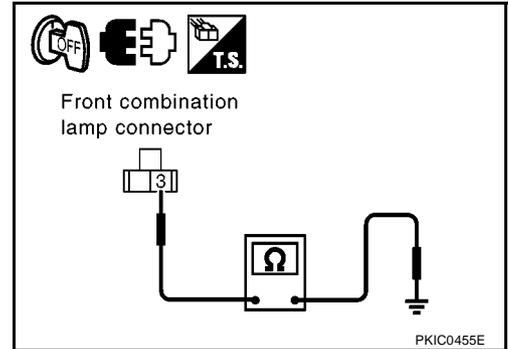
3. CHECK FRONT COMBINATION LAMP GROUND

1. Turn lighting switch OFF.
2. Check continuity between front combination lamp (RH or LH) harness connector and ground.

Front combination lamp connector		Terminal	Ground	Continuity
RH	E39	3		Yes
LH	E54			

OK or NG

- OK >> Check connector for connection, bend and loose fit.
 NG >> Repair harness or connector.



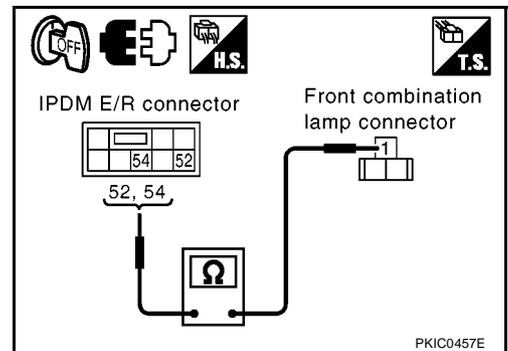
4. CHECK FRONT COMBINATION LAMP CIRCUIT

1. Turn lighting switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector and front combination lamp (RH or LH) harness connector.

Circuit	IPDM E/R		Front combination lamp		Continuity
	Connector	Terminal	Connector	Terminal	
RH	E16	54	E39	1	Yes
LH		52	E54		

OK or NG

- OK >> Replace IPDM E/R. Refer to [PG-26, "Removal and Installation of IPDM E/R"](#).
 NG >> Repair harness or connector.



Headlamps Do Not Turn OFF

1. CHECK HEADLAMP TURN OFF

Make sure that lighting switch is OFF. And make sure headlamp turns off when ignition switch is turned OFF.

OK or NG

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

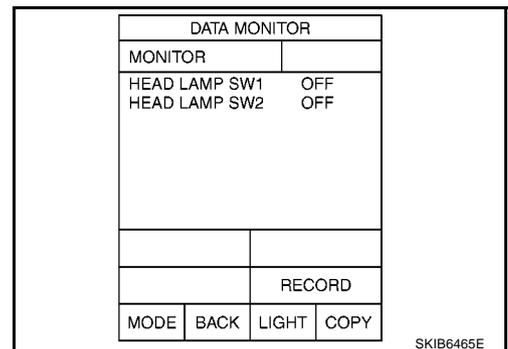
2. CHECK COMBINATION SWITCH INPUT SIGNAL

1. Select "BCM" on CONSULT-II. Select "HEAD LAMP" on "SELECT TEST ITEM" screen.
2. Select "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Make sure that "HEAD LAMP SW 1" and "HEAD LAMP SW 2" turns ON-OFF linked with operation of lighting switch.

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

OK or NG

- OK >> Replace IPDM E/R. Refer to [PG-26, "Removal and Installation of IPDM E/R"](#).
 NG >> GO TO 2.



HEADLAMP -CONVENTIONAL TYPE-

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-26, "Removal and Installation of IPDM E/R"](#) .

CAN COMM CIRCUIT>> Refer to [BCS-16, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#) .

SELF-DIAG RESULTS			
DTC RESULTS		TIME	
CAN COMM CIRCUIT [U1000]		PAST	
ERASE		PRINT	
MODE	BACK	LIGHT	COPY

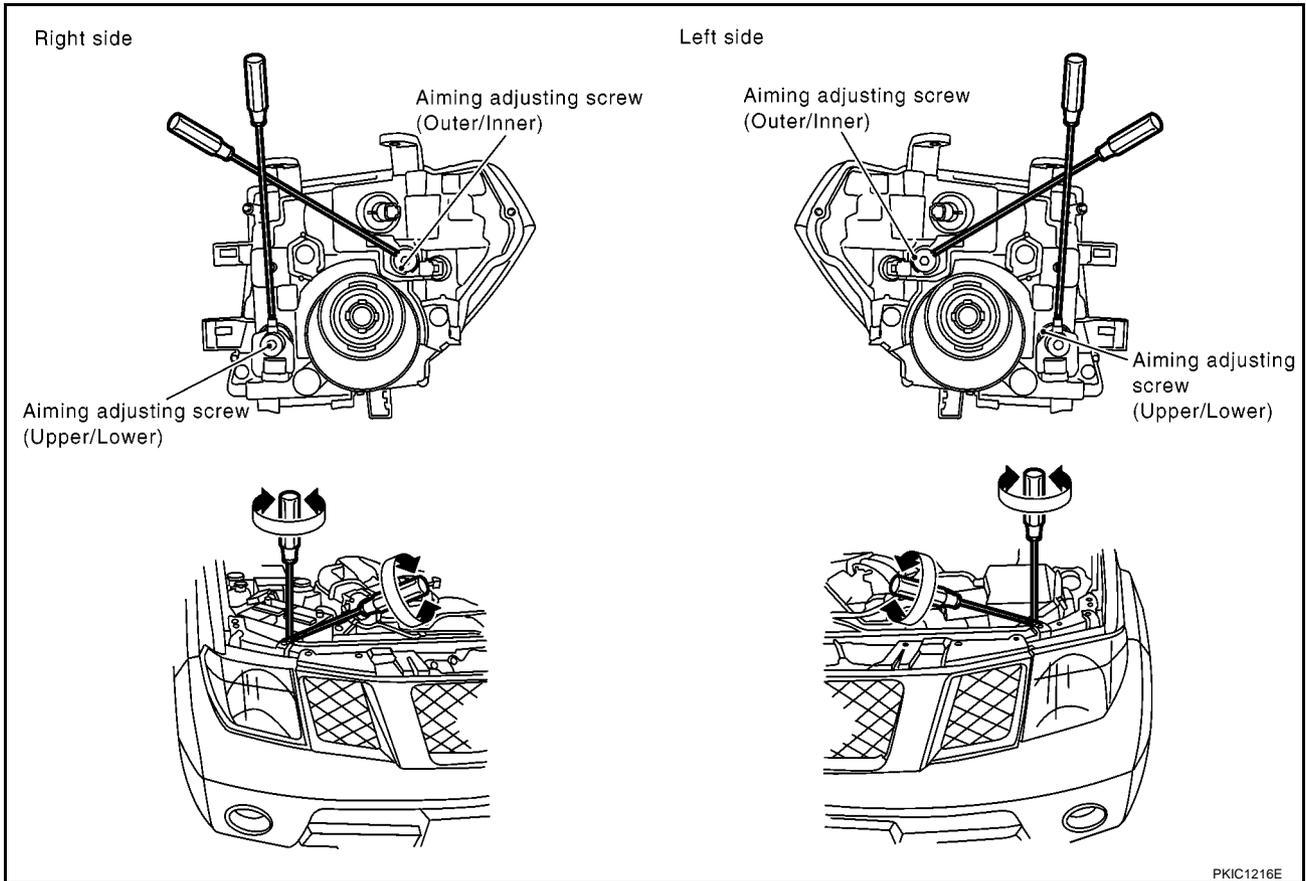
SKIA1039E

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HEADLAMP -CONVENTIONAL TYPE-

Aiming Adjustment

EKS00P7Y



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 screws to perform aiming adjustment.
 - First tighten the adjusting screw all the way and then make adjustment by loosening the screw. 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.

HEADLAMP -CONVENTIONAL TYPE-

- Adjust headlamps so that main axis of light is parallel to center line of body and is aligned with point P shown in illustration.
- Figure shows headlamp aiming pattern for driving on right side of road; for driving on left side of road, aiming pattern is reversed.
- Dotted lines to point P in illustration show center of headlamp.

“H” : Horizontal center line of headlamps

“WL ” : Distance between each headlamp center

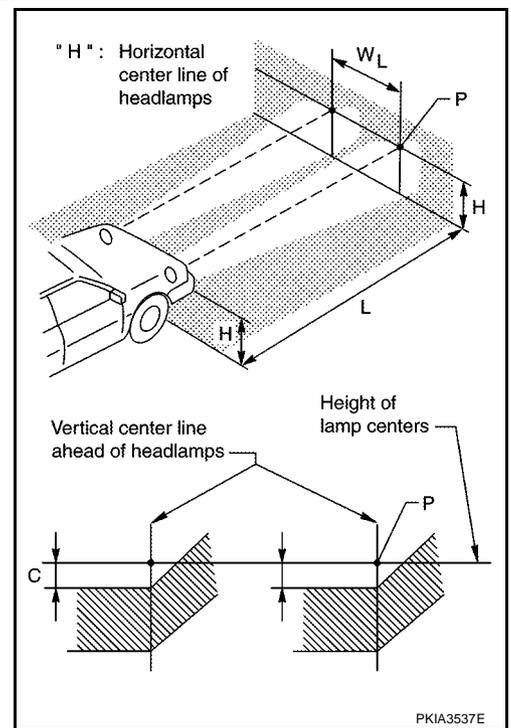
“L” : 25,000mm (984.25 in)

“C” : 315mm (12.40 in) – 375mm (14.76in)

- Elbow point for LHD models must be in 125 mm (4.92 in) to the right from point P.
- Elbow point for RHD models must be in 125 mm (4.92 in) to the left from point P.
- Basic illuminating area for adjustment should be within the range shown in the figure. Adjust headlamps accordingly.

CAUTION:

Be sure aiming switch is set to “0” when performing aiming adjustment.



EKS00P7Z

Bulb Replacement HEADLAMP HIGH/LOW BEAM

1. Turn lighting switch OFF.
2. Disconnect headlamp connector.
3. Remove back cover.
4. Unlock retaining spring, then remove bulb.
5. Installation is the reverse order of removal.

Headlamp high/low beam (Halogen) : 12V - 60 / 55W (H4LL)

FRONT TURN SIGNAL LAMP

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

Front turn signal lamp : 12V - 21W

CLEARANCE LAMP

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

Clearance lamp : 12V - 5W

CAUTION:

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

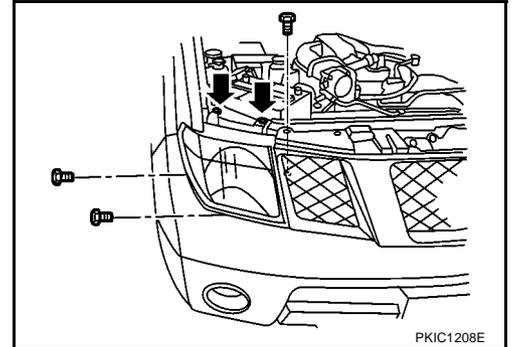
HEADLAMP -CONVENTIONAL TYPE-

EKS00Q9W

Removal and Installation

REMOVAL

1. Remove front grille. Refer to [EI-19, "FRONT GRILLE"](#) .
2. Remove front bumper. Refer to [EI-15, "FRONT BUMPER"](#) .
3. Disconnect headlamp connector.
4. Remove headlamp mounting bolts.



INSTALLATION

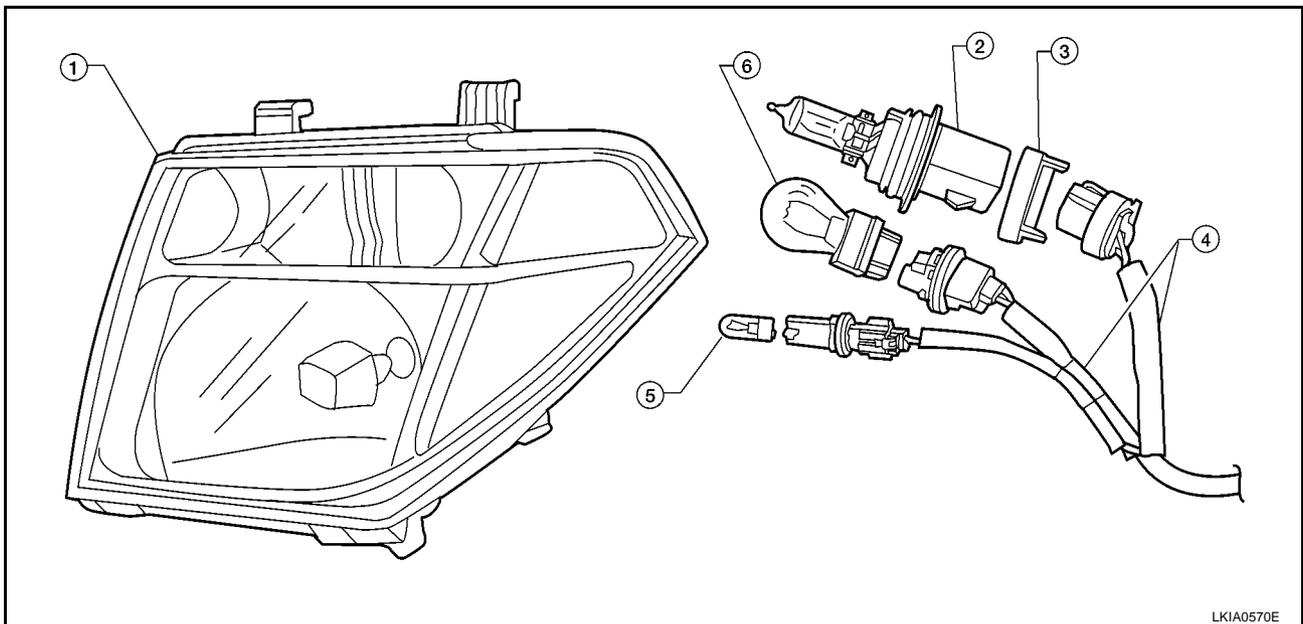
Installation is the reverse order of removal.

Headlamp mounting bolt  : 6.0 N·m (0.61 kg·m, 53 in·lb)

Disassembly and Assembly

DISASSEMBLY

EKS00P81



- | | | |
|----------------------------|------------------------|--------------------------------|
| 1. Headlamp assembly | 2. Headlamp bulb | 3. Headlamp retaining ring |
| 4. Wiring harness assembly | 5. Clearance lamp bulb | 6. Front turn signal lamp bulb |

HEADLAMP - DAYTIME LIGHT SYSTEM -

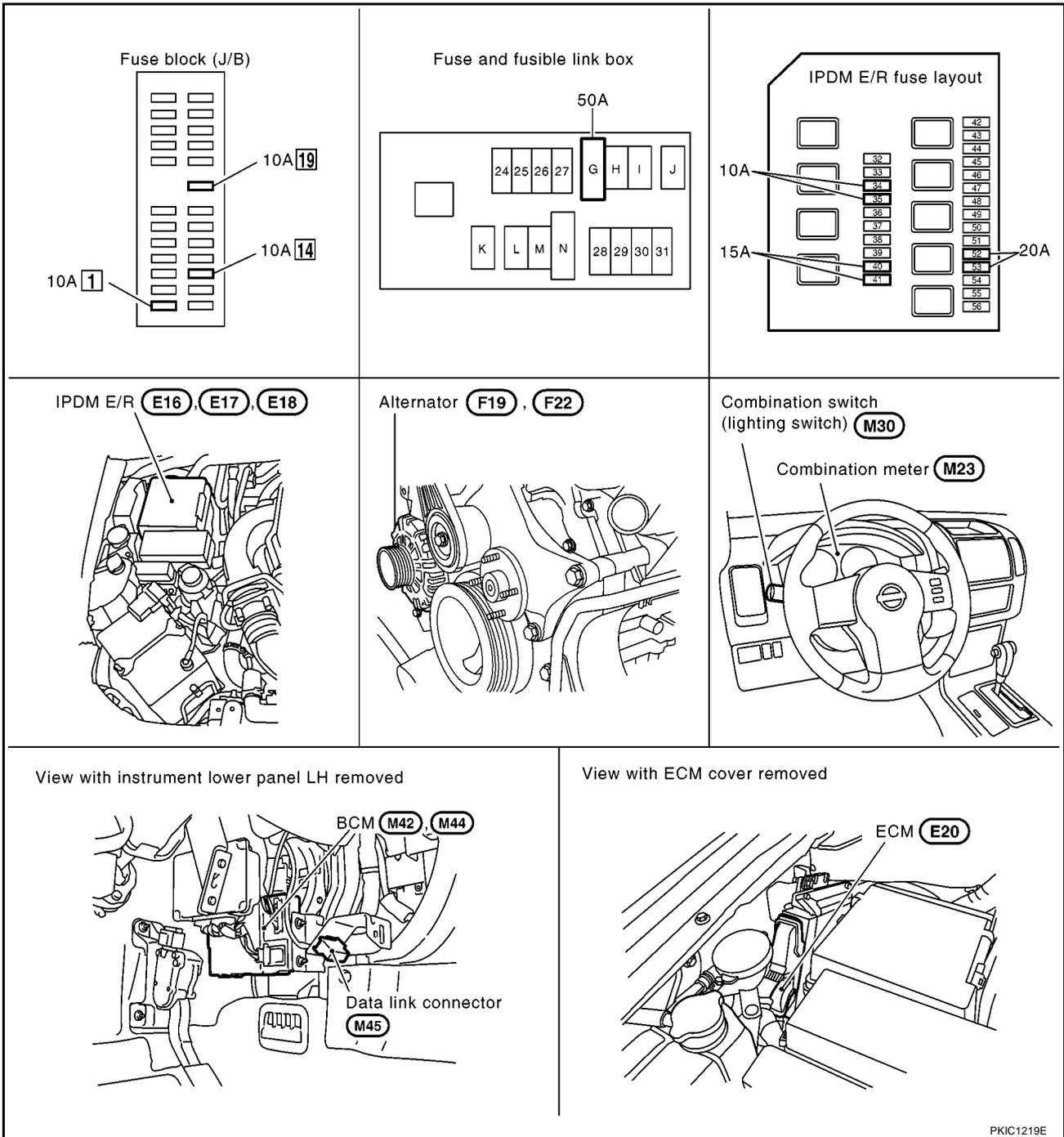
HEADLAMP - DAYTIME LIGHT SYSTEM -

PFP:26010

Component Parts and Harness Connector Location

EKS00Q7E

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PKIC1219E

System Description

EKS00Q7F

The daytime light system is to illuminate headlamp low beam, clearance lamps, tail lamps and license plate lamps while the engine is running.

When the engine is running, the BCM (body control module) receives the engine status signal. Then the BCM sends the headlamp low beam request signal and the daytime light request signal to the IPDM E/R (intelligent power distribution module engine room) through the CAN communication. As the IPDM E/R receives the above request signals, its CPU (central processing unit) controls headlamp low relay to illuminate headlamp low beam, clearance lamps, tail lamps and license plate lamps.

HEADLAMP - DAYTIME LIGHT SYSTEM -

OUTLINE

Power is supplied at all times

- to ignition relay (located in IPDM E/R)
- to headlamp high relay (located in IPDM E/R) and
- to headlamp low relay (located in IPDM E/R), from battery directly,
- through 50A fusible link (letter G, located in fuse and fusible link box)
- to BCM terminal 57,
- through 20A fuse (No. 52, located in IPDM E/R) and
- through 20A fuse (No. 53, located in IPDM E/R)
- to CPU (located in IPDM E/R),
- through 10A fuse [No. 19, located in fuse block (J/B)]
- to combination meter terminal 3.

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

- to ignition relay (located in IPDM E/R),
- through 10A fuse [No. 1, located in fuse block (J/B)]
- to BCM terminal 3,
- through 10A fuse [No. 14, located in fuse block (J/B)]
- to combination meter terminal 16.

Ground is supplied at all times

- to BCM terminal 55 and
- to combination meter terminal 23
- through grounds M21, M80 and M83,
- to IPDM E/R terminals 38 and 59
- through grounds E21, E41 and E61.

DAYTIME LIGHT OPERATION

With the lighting switch in the OFF position and engine running, the BCM receives input signal requesting headlamp low beam, clearance lamp, license plate lamp, and tail lamp to illuminate. This input signal is communicated to the IPDM E/R through the CAN communication. The CPU located in the IPDM E/R controls headlamp low relay.

- through 15A fuse (No. 41, located in IPDM E/R)
- through IPDM E/R terminal 54
- to front combination lamp RH terminal 1,
- through 15A fuse (No. 40, located in IPDM E/R)
- through IPDM E/R terminal 52
- to front combination lamp LH terminal 1.

Ground is supplied at all times

- to front combination lamp RH and LH terminals 3
- through grounds E21, E41 and E61.

With power and ground supplied, the headlamp low beam, clearance, license plate and tail lamps illuminate.

HEADLAMP - DAYTIME LIGHT SYSTEM -

COMBINATION SWITCH READING FUNCTION

Refer to [BCS-3, "COMBINATION SWITCH READING FUNCTION"](#) .

A

AUTO LIGHT OPERATION

Refer to [LT-49, "System Description"](#) .

B

CAN Communication System Description

EKS00Q7G

Refer to [LAN-23, "CAN COMMUNICATION"](#) .

C

CAN Communication Unit

EKS00Q7H

Refer to [LAN-30, "CAN Communication Unit"](#) .

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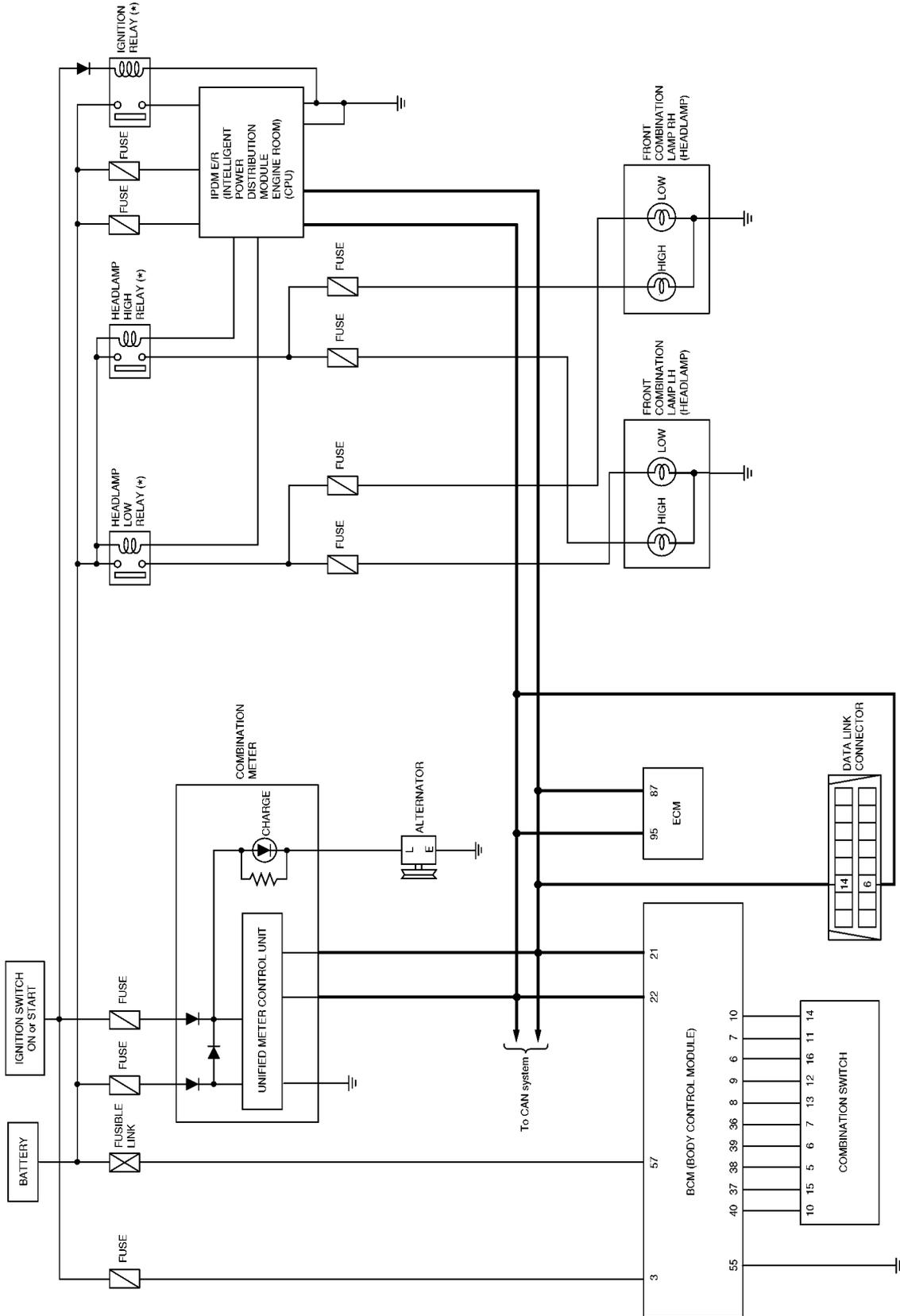
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HEADLAMP - DAYTIME LIGHT SYSTEM -

Schematic

EKS00Q71



* : This relay is build into the IPDM E/R (Intelligent power distribution module engine room).

MKWA3557E

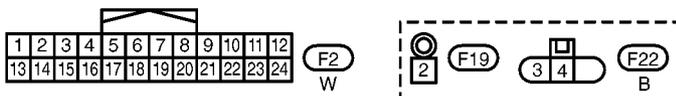
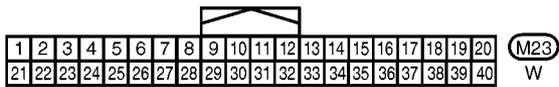
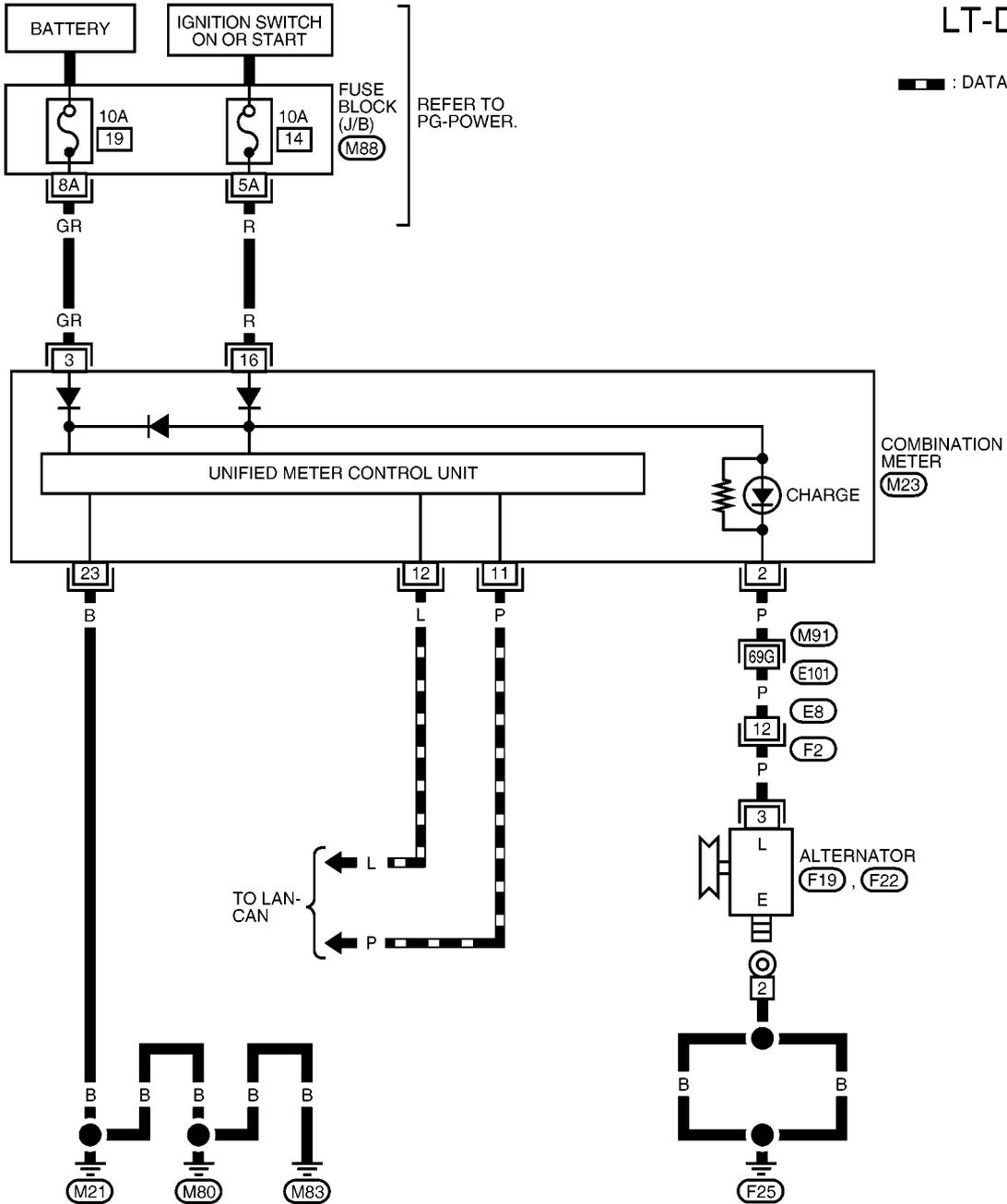
HEADLAMP - DAYTIME LIGHT SYSTEM -

Wiring Diagram — DTRL —

EKS00Q7J

LT-DTRL-01

▬ : DATA LINE



REFER TO THE FOLLOWING.

(M91) -SUPER MULTIPLE JUNCTION (SMJ)

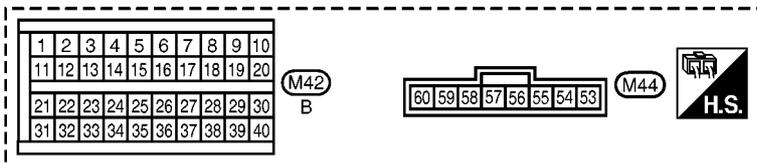
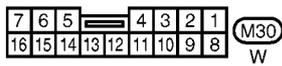
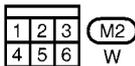
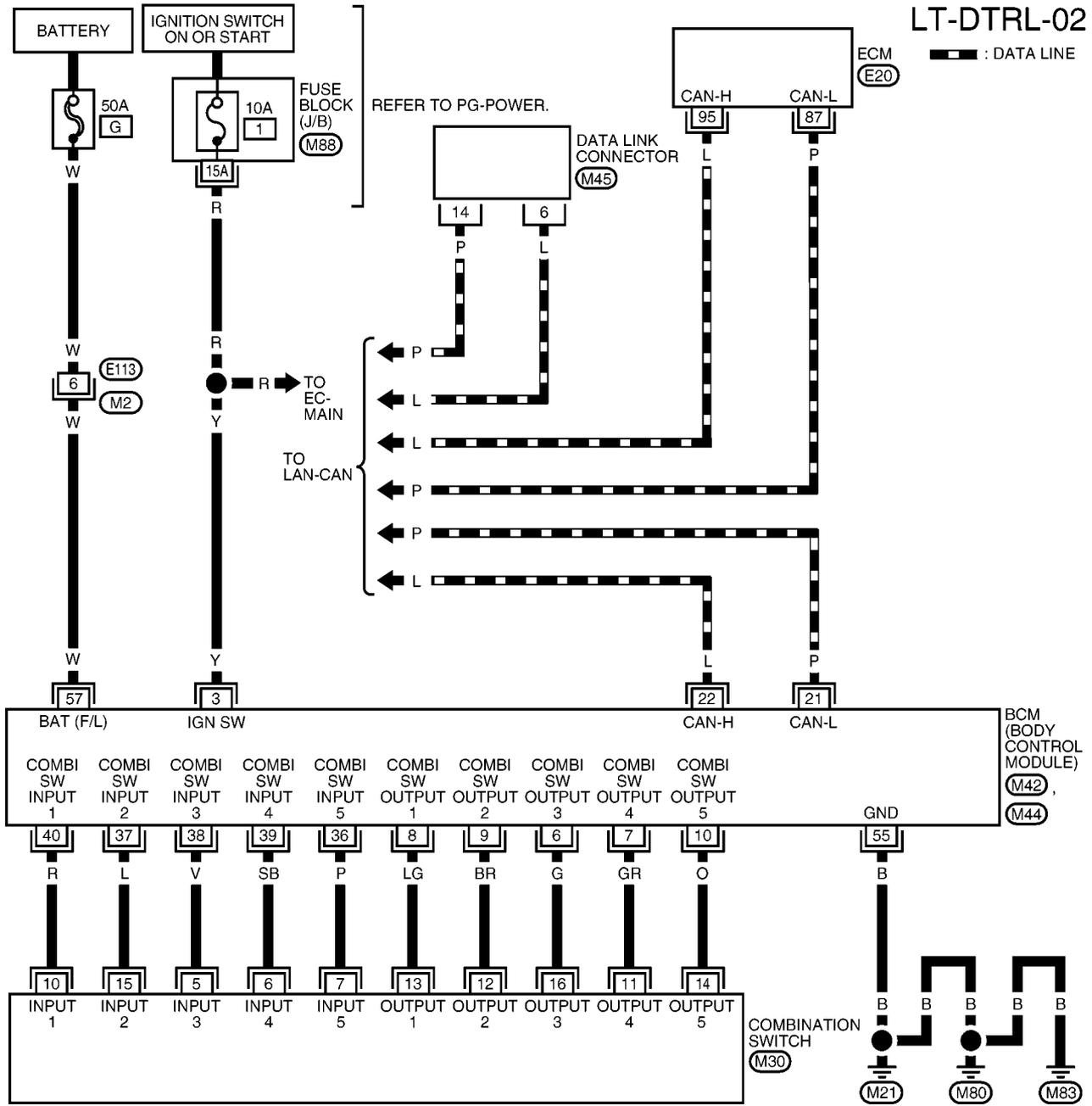
(M88) -FUSE BLOCK-JUNCTION BOX (J/B)

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HEADLAMP - DAYTIME LIGHT SYSTEM -

LT-DTRL-02

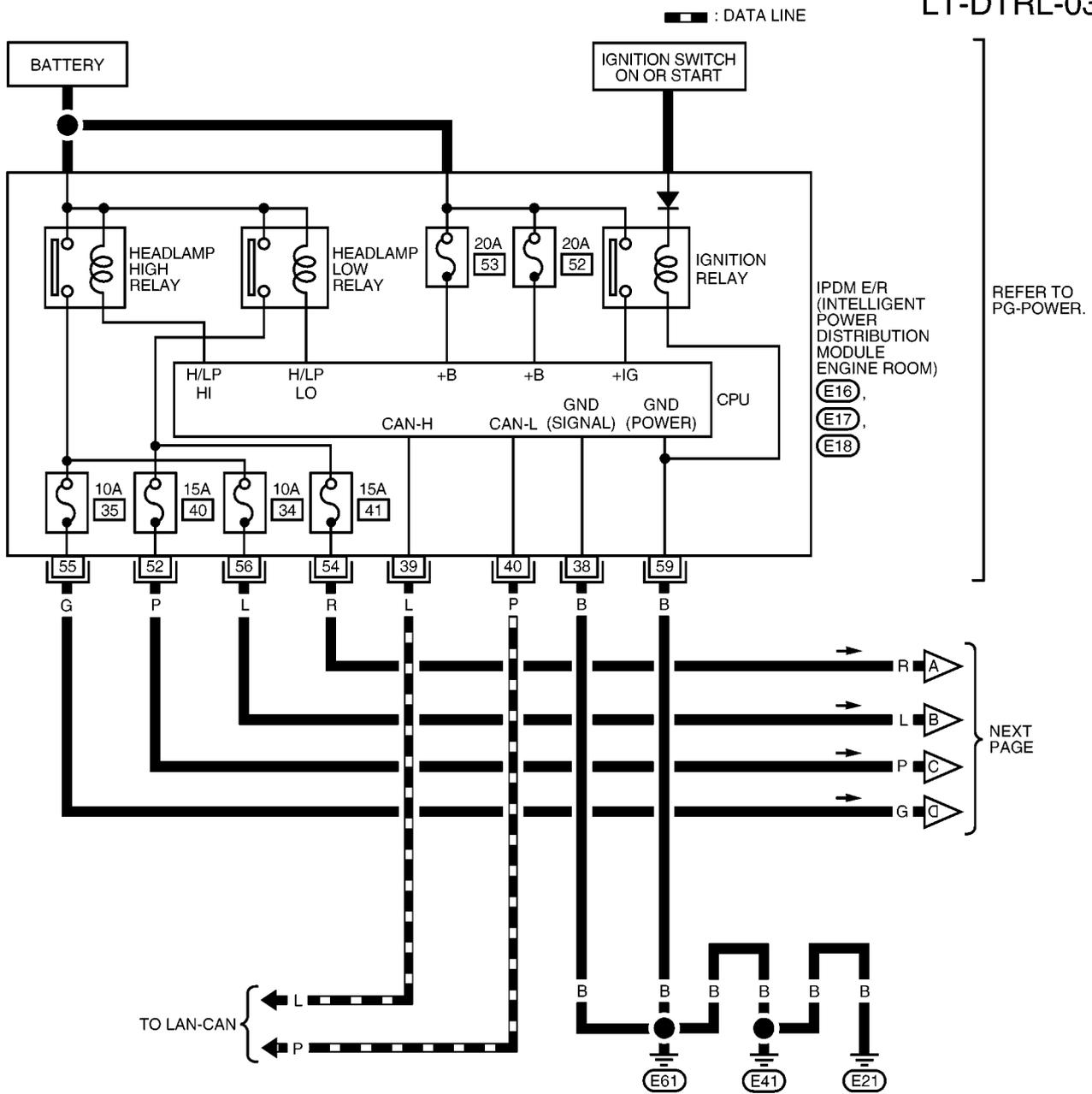
ECM (E20)  : DATA LINE



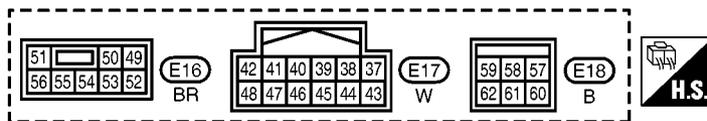
REFER TO THE FOLLOWING.
 (E20) - ELECTRICAL UNITS
 (M88) - FUSE BLOCK - JUNCTION BOX (J/B)

HEADLAMP - DAYTIME LIGHT SYSTEM -

LT-DTRL-03

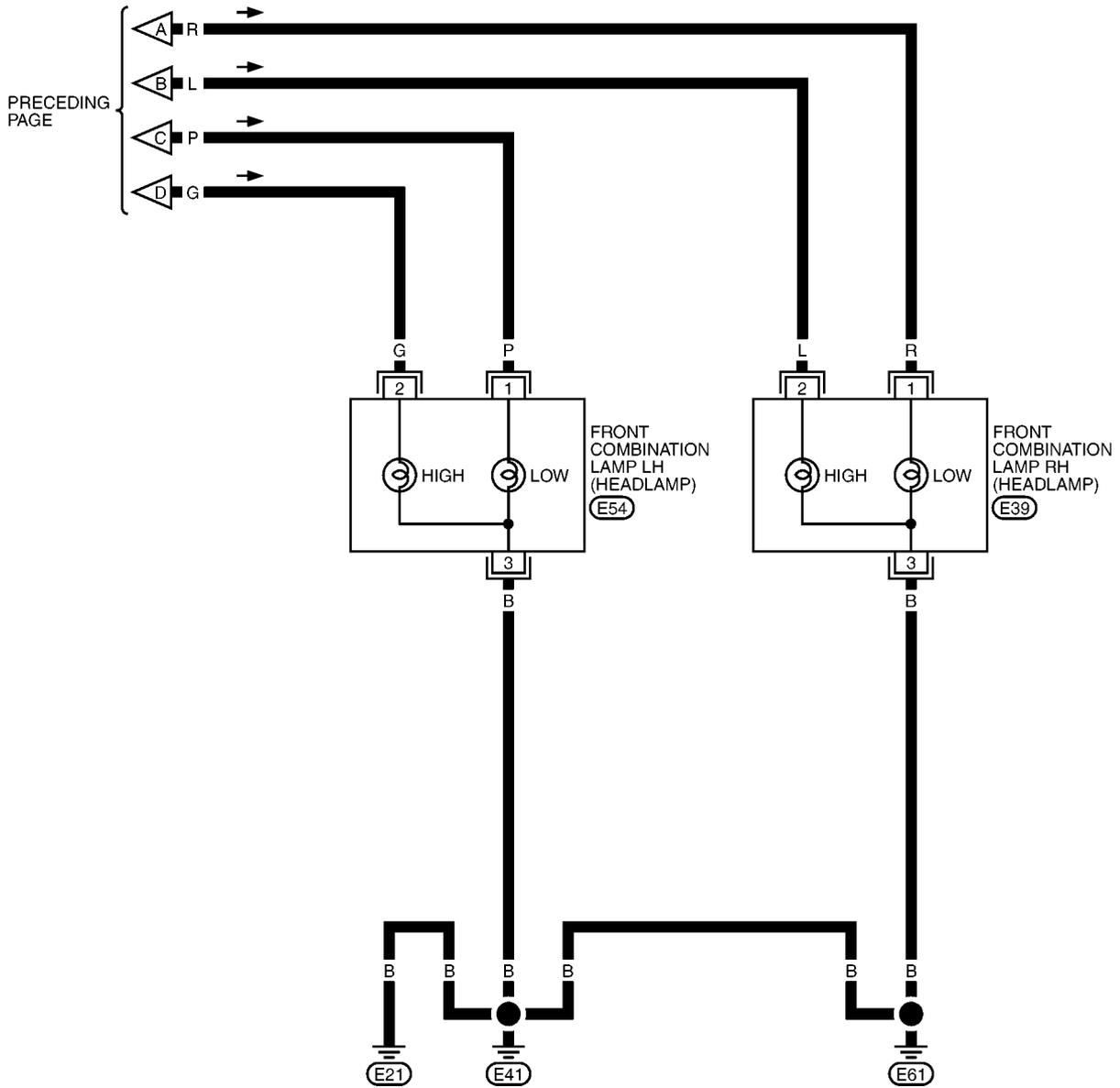


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HEADLAMP - DAYTIME LIGHT SYSTEM -

LT-DTRL-04

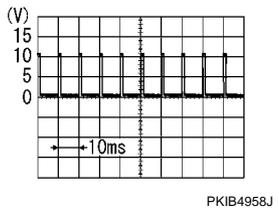


MKWA3561E

HEADLAMP - DAYTIME LIGHT SYSTEM -

Terminals and Reference Values for BCM

EKS00Q7K

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
3	Y	Ignition switch (ON)	ON	—	Battery voltage
6	G	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	
7	GR	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	
8	LG	Combination switch output 1	ON	Lighting, turn, wiper OFF Wiper dial position 4	
9	BR	Combination switch output 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	
10	O	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	
21	P	CAN- L	—	—	
22	L	CAN- H	—	—	—
36	P	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	Approx. 0V
37	L	Combination switch input 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	
38	V	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	
39	SB	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	
40	R	Combination switch input 1	ON	Lighting, turn, wiper OFF Wiper dial position 4	
55	B	Ground	ON	—	Approx. 0V
57	W	Battery power supply (fusible link)	OFF	—	Battery voltage

Terminals and Reference Values for IPDM E/R

EKS00Q7L

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
38	B	Ground	ON	—	Approx. 0V
39	L	CAN- H	—	—	—
40	P	CAN- L	—	—	—
52	P	Headlamp low (LH)	ON	Lighting switch 2ND position OFF	Approx. 0V
				ON	Battery voltage
54	R	Headlamp low (RH)	ON	Lighting switch 2ND position OFF	Approx. 0V
				ON	Battery voltage
55	G	Headlamp high (LH)	ON	Lighting switch HIGH or PASS position OFF	Approx. 0V
				ON	Battery voltage
56	L	Headlamp high (RH)	ON	Lighting switch HIGH or PASS position OFF	Approx. 0V
				ON	Battery voltage
59	B	Ground	ON	—	Approx. 0V

HEADLAMP - DAYTIME LIGHT SYSTEM -

How to Proceed With Trouble Diagnosis

EKS00Q7M

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-31, "System Description"](#) .
3. Perform the Preliminary Check. Refer to [LT-40, "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

EKS00Q7N

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

Check for blown fuses or fusible link.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	G
	Ignition switch ON or START position	1
IPDM E/R	Battery	34
		35
		40
		41
		52
		53
Combination metre	Battery	19
	Ignition switch ON or START position	14

Refer to [LT-35, "Wiring Diagram — DTRL —"](#) .

OK or NG

OK >> GO TO 2.

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

HEADLAMP - DAYTIME LIGHT SYSTEM -

2. CHECK POWER SUPPLY CIRCUIT

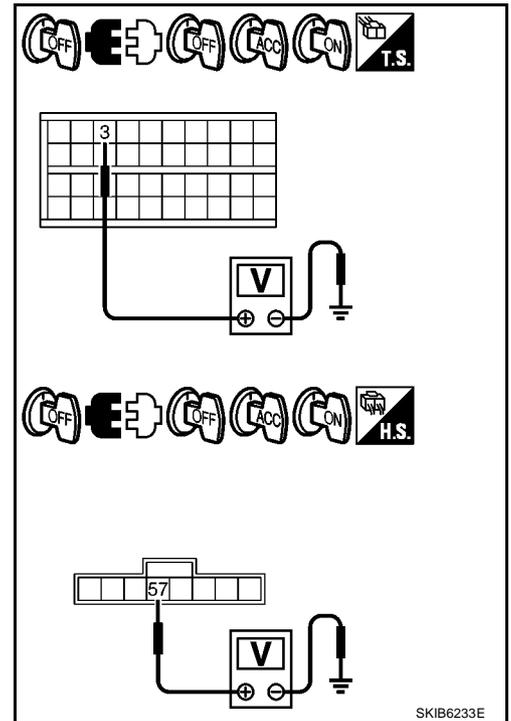
1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check voltage between BCM harness connector and ground.

Terminal (+)		Terminal (-)	Ignition switch position		
BCM connector	Terminal		OFF	ACC	ON
M42	3	Ground	Approx. 0V	Approx. 0V	Battery voltage
M44	57		Battery voltage	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.



3. CHECK GROUND CIRCUIT

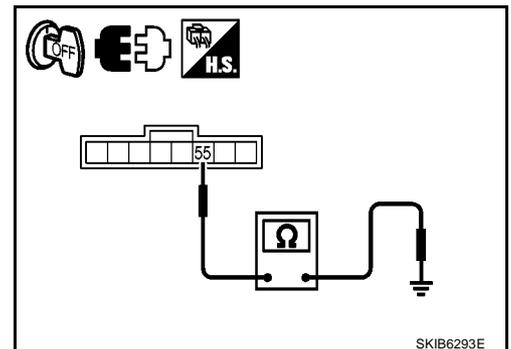
Check continuity between BCM harness connector and ground.

BCM connector	Terminal	Ground	Continuity
M44	55		Yes

OK or NG

OK >> INSPECTION END

NG >> Repair harness or connector.



HEADLAMP - DAYTIME LIGHT SYSTEM -

EKS00Q70

CONSULT-II Functions (BCM)

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

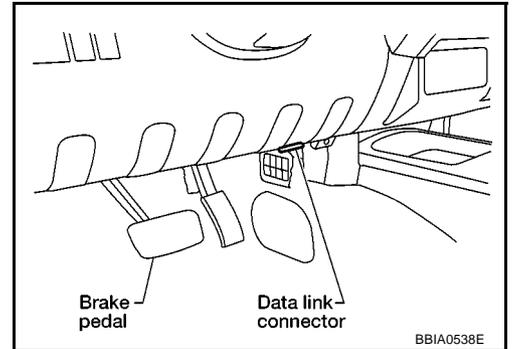
BCM diagnosis part	Diagnosis mode	Description
HEAD LAMP	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
BCM C/U	SELF-DIAG RESULTS	BCM performs self-diagnosis of CAN communication and combination switch.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.

CONSULT-II BASIC OPERATION

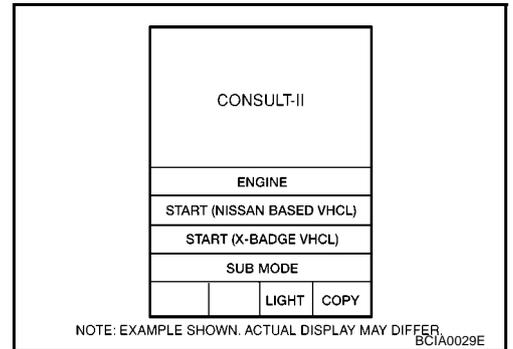
CAUTION:

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

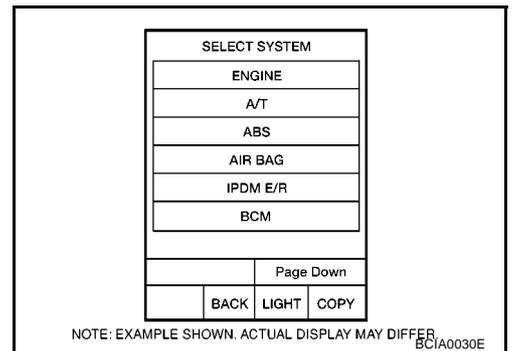
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, and then turn ignition switch ON.



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

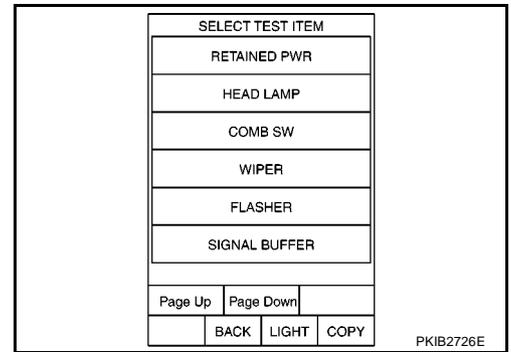


3. Touch "BCM" on "SELECT SYSTEM" screen. If "BCM" is not indicated, refer to [GI-50, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



HEADLAMP - DAYTIME LIGHT SYSTEM -

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



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 "SELECT MONITOR ITEM" screen.

ALL SIGNALS	Monitors all the signals.
SELECTION FROM MENU	Selects items and monitor them.

4. When "SELECTION FROM MENU" is selected, touch individual items to be monitored. When "ALL SIGNALS" is selected, all the items will be monitored.
5. Touch "START".
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 status (ignition switch IGN position: ON/other: OFF) of ignition switch judged from the ignition switch signal.
ACC ON SW "ON/OFF"	Displays status (ignition switch ACC or IGN position: ON/other: OFF) of ignition switch judged from the ignition switch signal.
HI BEAM SW "ON/OFF"	Displays status (lighting switch high beam position: ON/other: OFF) of high beam switch judged from the lighting switch signal.
HEAD LAMP SW 1 "ON/OFF"	Displays status (lighting switch 2ND position: ON/other: OFF) of headlamp 1 switch judged from the lighting switch signal.
HEAD LAMP SW 2 "ON/OFF"	Displays status (lighting switch 2ND position: ON/other: OFF) of headlamp 2 switch judged from the lighting switch signal.
LIGHT SW 1ST "ON/OFF"	Displays status (lighting switch 1ST or 2ND position: ON/other: OFF) of lighting switch 1ST position switch judged from the lighting switch signal.
PASSING SW "ON/OFF"	Displays status (lighting switch passing position: ON/other: OFF) of passing switch judged from the lighting switch signal.
FR FOG SW "ON/OFF"	Displays status (lighting switch front fog lamp ON position: ON/others: OFF) of front fog lamp switch judged from the lighting switch signal.
RR FOG SW "ON/OFF"	Displays status (lighting switch rear fog lamp ON position: ON/others: OFF) of rear fog lamp switch judged from the lighting switch signal.
DOOR SW - DR "ON/OFF"	Displays status (door is open: ON/door is closed: OFF) of driver side door switch judged from the driver side door switch signal.
DOOR SW - AS "ON/OFF"	Displays status (door is open: ON/door is closed: OFF) of passenger side door switch judged from the passenger side door switch signal.
DOOR SW - RR "ON/OFF"	Displays status (door is open: ON/door is closed: OFF) of rear door switch (RH) judged from the rear door switch (RH) signal.
DOOR SW - RL "ON/OFF"	Displays status (door is open: ON/door is closed: OFF) of rear door switch (LH) judged from the rear door switch (LH) signal.

HEADLAMP - DAYTIME LIGHT SYSTEM -

Monitor item	Contents
BACK DOOR SW "ON/OFF"	Displays status (door is open: ON/door is closed: OFF) of back door switch judged from the back door switch signal.
TURN SIGNAL R "ON/OFF"	Displays status (turn signal switch right position: ON/other: OFF) of turn RH switch judged from the turn signal switch signal.
TURN SIGNAL L "ON/OFF"	Displays status (turn signal switch left position: ON/other: OFF) of turn LH switch judged from the turn signal switch signal.
CARGO LAMP SW ^{NOTE} "OFF"	—
HD LIGHT TIMER "10 sec/ 30 sec"	Displays status (MODE 1: 10 sec./ MODE 2: 30 sec.) of head light timer.
LIT-SEN FAIL ^{NOTE} "OK"	—
AUT LIGHT SYS ^{NOTE} "OFF"	—

NOTE:

This item is displayed, but cannot be monitored.

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 "OFF" deactivates the operation.

Display Item List

Test item	Description
TAIL LAMP	Allows tail lamp relay to operate by switching ON-OFF.
HEAD LAMP (HI, LO)	Allows headlamp relay to operate by switching ON-OFF.
RR FOG LAMP	Allows rear fog lam to operate by switching ON-OFF.
FR FOG LAMP	Allows front fog lamp relay to operate by switching ON-OFF.
DAYTIME RUNNING LIGHT	Allows daytime running light lamp operate by switching ON-OFF.

HEADLAMP - DAYTIME LIGHT SYSTEM -

CONSULT-II Functions (IPDM E/R)

EKS00Q7P

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

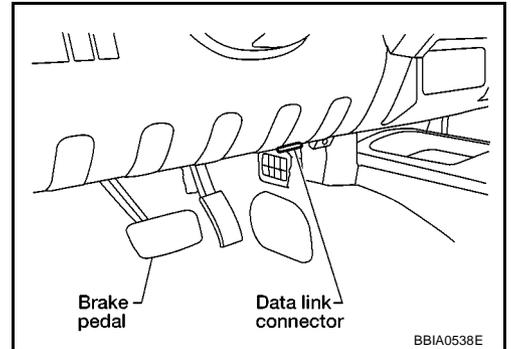
Diagnosis Mode	Description
SELF-DIAGNOSTIC RESULTS	Refer to PG-17, "SELF-DIAGNOSTIC RESULTS" .
DATA MONITOR	The input/output data of IPDM E/R is displayed in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST	IPDM E/R sends a drive signal to electronic components to check their operation.

CONSULT-II BASIC OPERATION

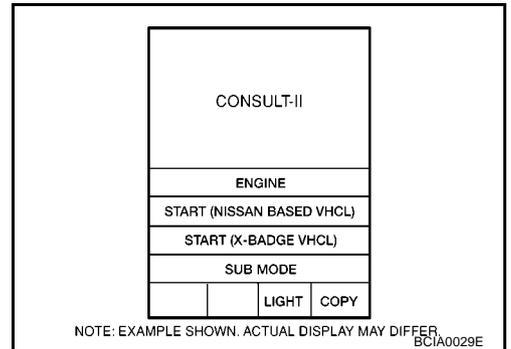
CAUTION:

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

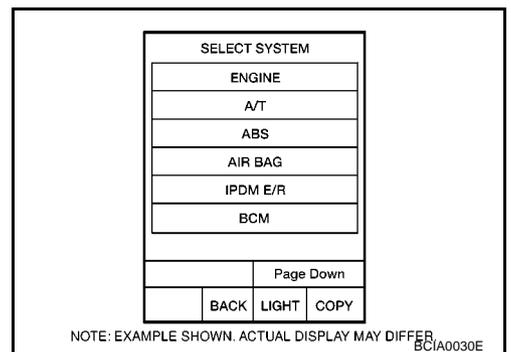
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, and then turn the ignition switch ON.



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

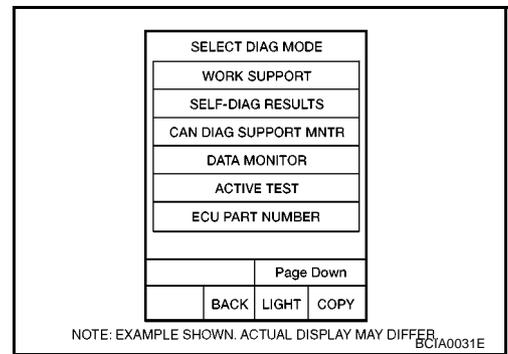


3. Touch "IPDM E/R" on "SELECT SYSTEM" screen. If "IPDM E/R" is not displayed, refer to [GI-50, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#) .



HEADLAMP - DAYTIME LIGHT SYSTEM -

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



DATA MONITOR

Operation Procedure

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

ALL SIGNALS	Monitors all items.
MAIN SIGNALS	Monitor the predetermined item.
SELECTION FROM MENU	Selects items and monitors them.

- When "SELECTION FROM MENU" is selected, touch individual items to be monitored. In "ALL SIGNALS", all items are monitored. In "MAIN SIGNALS", predetermined items are monitored.
- Touch "START".
- Touch "RECORD" while monitoring to record the status of the item being monitored. To stop recording, touch "STOP".

All Signals, Main Signals, Selection From Menu

Item name	CONSULT-II screen display	Display	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
Daytime light request	DTRL 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

- Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
- Touch "EXTERNAL LAMPS" on "SELECT TEST ITEM" screen.
- Touch item to be tested, and check operation.
- Touch "START".
- Touch "OFF" while testing to stop the operation.

HEADLAMP - DAYTIME LIGHT SYSTEM -

CONSULT-II screen display		Test item	Description
EXTERNAL LAMP	TAIL	Tail lamp relay operation	Allows tail lamp relay to operate by switching operation ON.
	HI, LO	Headlamp relay (HI, LO) operation	Allows headlamp relay (HI, LO) to operate by switching operation (HI, LO) ON. (Headlamp high beam repeats ON-OFF every 1 second)
	FOG	Front fog lamp relay operation	Allows front fog lamp relay to operate by switching operation ON.
	OFF	—	Stop the active test.

Daytime Light Control Does Not Operate Properly (Normal Headlamps Operate Properly)

EKS00Q7Q

1. CHECK COMBINATION SWITCH INPUT SIGNAL

1. Select "BCM" on CONSULT-II. Select "HEAD LAMP" on "SELECT TEST ITEM" screen.
2. Select "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Make sure that "LIGHT SW 1ST", "HEADLAMP SW 1" and "HEADLAMP SW 2" turns ON-OFF linked with operation of lighting switch.

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

DATA MONITOR			
MONITOR			
LIGHT SW 1ST	OFF		
HEAD LAMP SW 1	OFF		
HEAD LAMP SW 2	OFF		
		RECORD	
MODE	BACK	LIGHT	COPY

SKIB6468E

OK or NG

OK >> GO TO 2.

NG >> Check combination switch (lighting switch). Refer to [LT-118, "Combination Switch Inspection"](#) .

2. CHECK IPDM E/R

1. Start engine running.
2. Select "IPDM E/R" on CONSULT-II. Select "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Make sure "DTRL REQ" turns ON when lighting switch is in OFF position.

Engine running : DTRL REQ ON

DATA MONITOR			
MONITOR			
DTRL REQ	ON		
		RECORD	
MODE	BACK	LIGHT	COPY

SKIB6469E

OK or NG

OK >> Replace IPDM E/R. Refer to [PG-26, "Removal and Installation of IPDM E/R"](#) .

NG >> Replace BCM. Refer to [BCS-17, "Removal and Installation of BCM"](#) .

HEADLAMP - DAYTIME LIGHT SYSTEM -

Aiming Adjustment

EKS00Q7R

Refer to [LT-28, "Aiming Adjustment"](#) .

Bulb Replacement

EKS00Q7S

Refer to [LT-29, "Bulb Replacement"](#) .

Removal and Installation

EKS00Q7T

Refer to [LT-30, "Removal and Installation"](#) .

Disassembly and Assembly

EKS00Q7U

Refer to [LT-30, "Disassembly and Assembly"](#) .

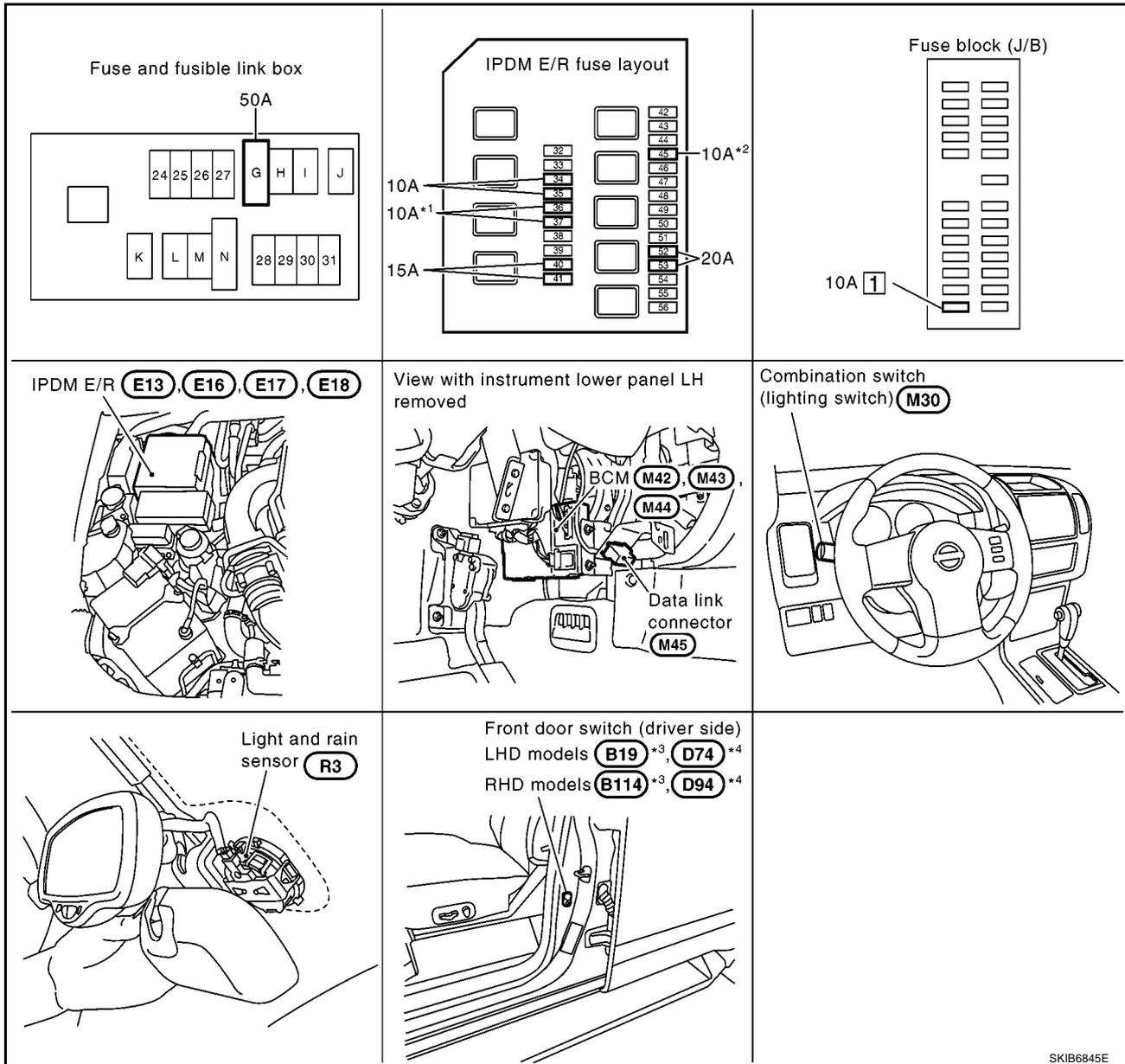
AUTO LIGHT SYSTEM

PPF:28491

AUTO LIGHT SYSTEM

Component Parts and Harness Connector Location

EKS00Q7V



*1: Without daytime light system, *2: With daytime light system, *3: Double cab, *4: King cab

System Description

EKS00Q7W

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 system uses an light and rain 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-60, "WORK SUPPORT"](#).

Light and rain sensor, power is supplied

- from BCM terminal 42
- to light and rain sensor terminal 1.

Light and rain sensor, ground is supplied

- to light and rain sensor terminal 3
- through grounds M21, M80 and M83.

AUTO LIGHT SYSTEM

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

- to BCM terminal 24
- from light and rain sensor terminal 2.

The headlamps will then illuminate. For a description of headlamp operation, refer to [LT-49, "System Description"](#).

COMBINATION SWITCH READING FUNCTION

Refer to [BCS-3, "COMBINATION SWITCH READING FUNCTION"](#).

CAN Communication System Description

EKS00Q7X

Refer to [LAN-23, "CAN COMMUNICATION"](#).

Major Components and Functions

EKS00Q7Y

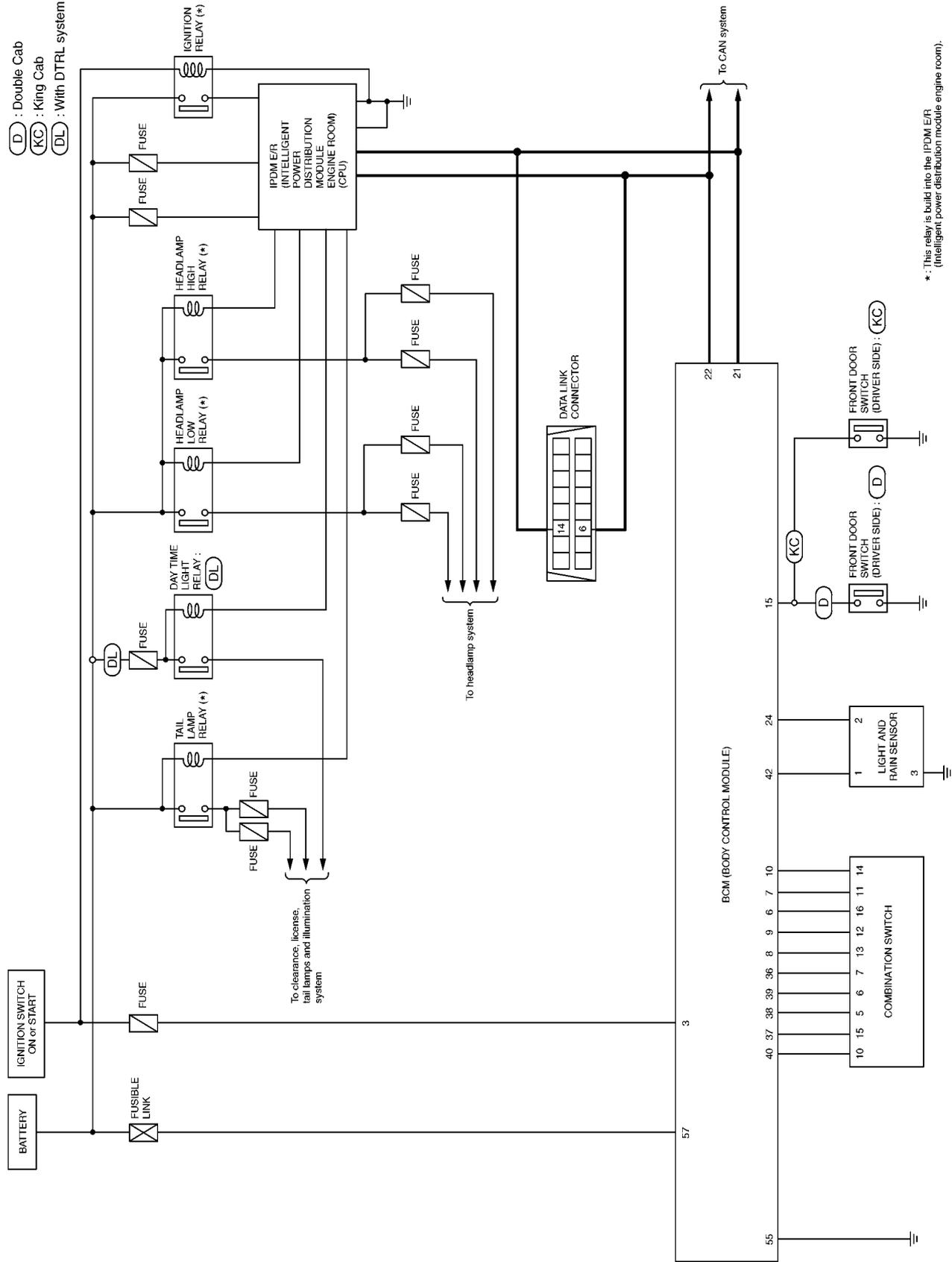
Components	Functions
BCM	<ul style="list-style-type: none">● Turns ON/OFF circuits of tail light and headlamp according to signals from light and rain sensor, lighting switch (AUTO), driver door switch, passenger door switch, rear door switches, back door switch, glass hatch opener switch and ignition switch (ON, OFF).
Light and rain sensor	<ul style="list-style-type: none">● Converts outside brightness (lux) to voltage, and sends it to BCM. (Detects lightness of 50 to 1,300 lux.)

AUTO LIGHT SYSTEM

Schematic

EKS00Q7Z

A
B
C
D
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G
H
I
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K
L
M



MKWA3562E

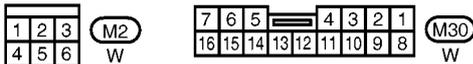
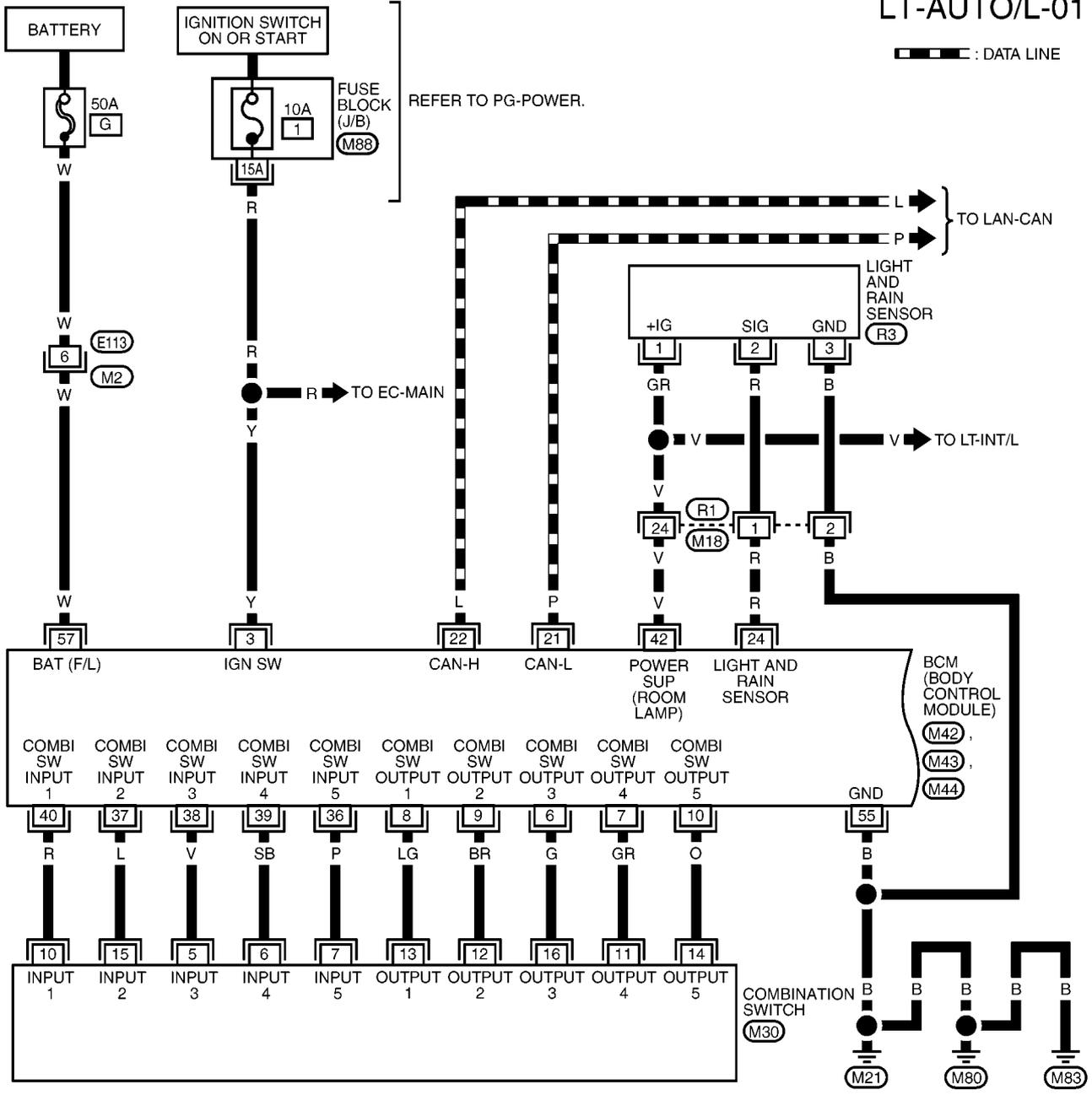
AUTO LIGHT SYSTEM

EKS00Q80

Wiring Diagram — AUTO/L —

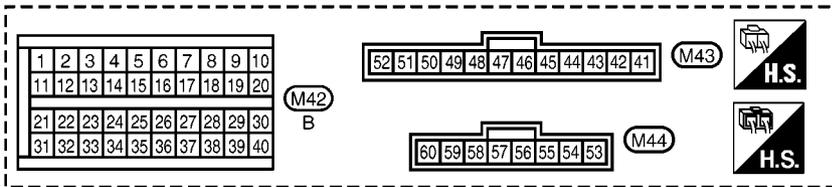
LT-AUTO/L-01

▬▬▬ : DATA LINE



REFER TO THE FOLLOWING.

(M88) - FUSE BLOCK
JUNCTION BOX (J/B)

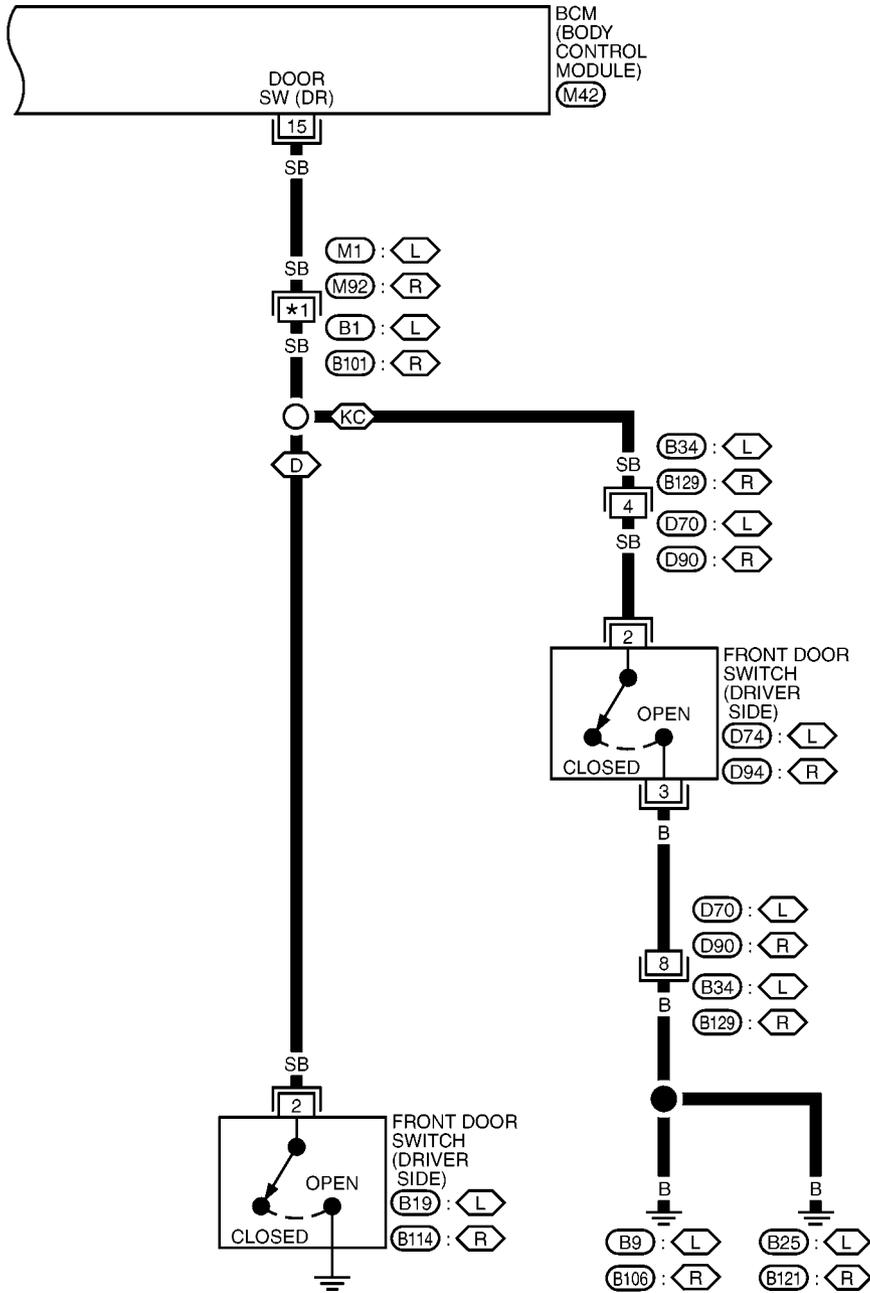


MKWA3563E

AUTO LIGHT SYSTEM

LT-AUTO/L-02

- D : DOUBLE CAB
- KC : KING CAB
- L : LHD MODELS
- R : RHD MODELS
- *1 61J : L
- 57M : R



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

M42
B

1
2
3

B19 , B114 , D74 , D94
W W W W

1	2	3	4
5	6	7	8

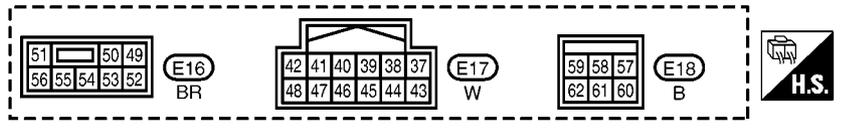
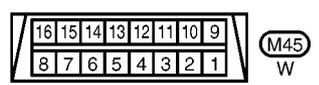
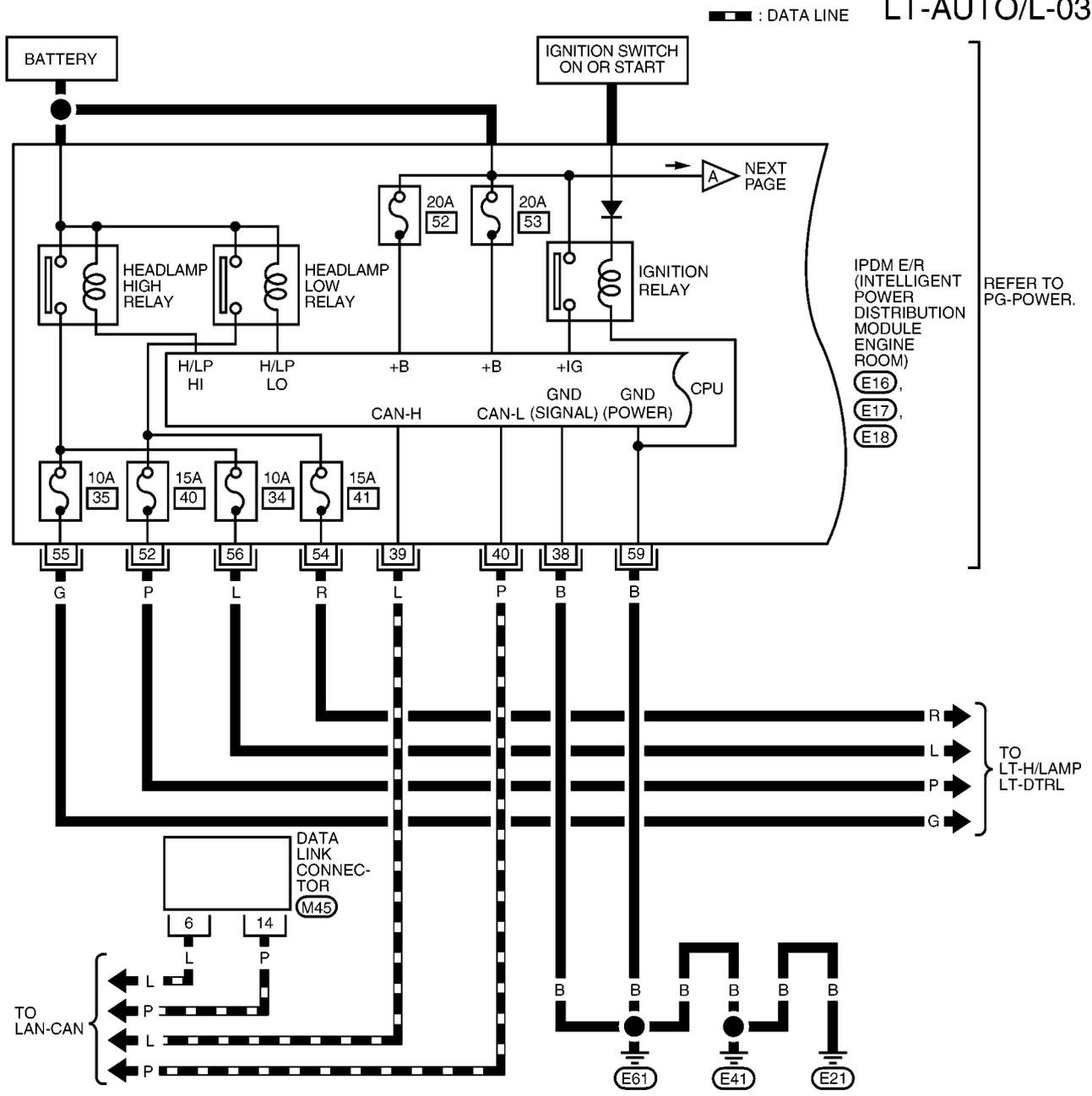
B34 , B129
W W

REFER TO THE FOLLOWING.
M1 , M92 -SUPER MULTIPLE
 JUNCTION (SMJ)

A
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LT
L
M

AUTO LIGHT SYSTEM

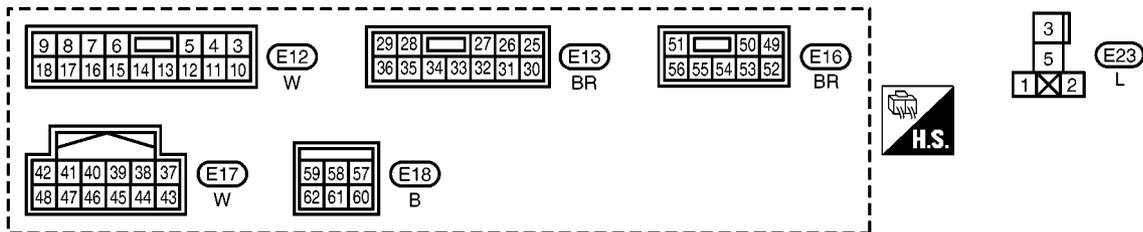
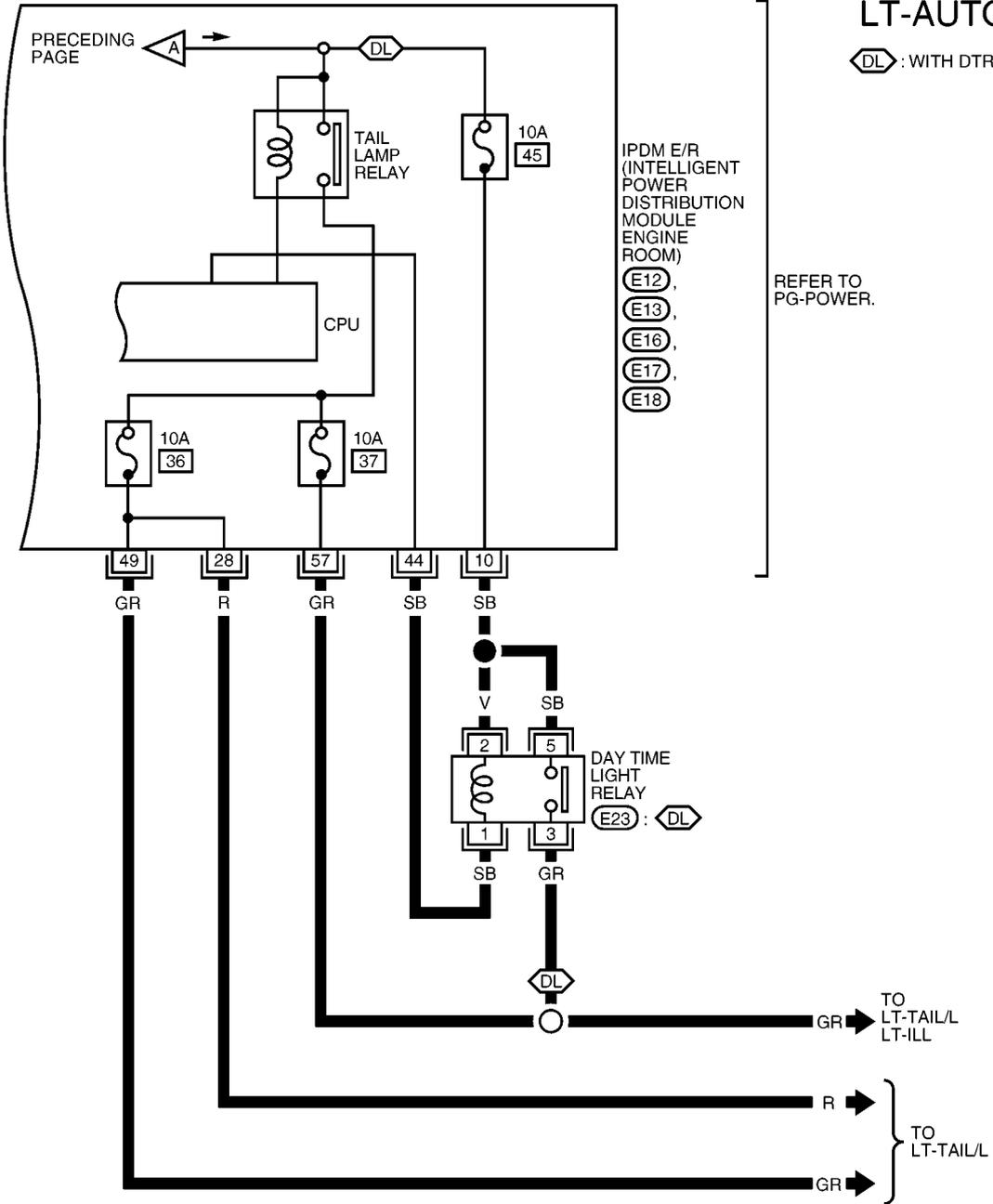
LT-AUTO/L-03



AUTO LIGHT SYSTEM

LT-AUTO/L-04

DL : WITH DTRL SYSTEM



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LT

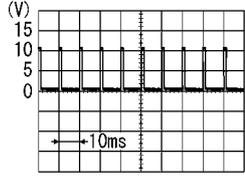
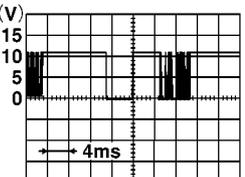
L

M

AUTO LIGHT SYSTEM

Terminals and Reference Values for BCM

EKS00Q81

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
3	Y	Ignition switch (ON)	ON	—	Battery voltage
6	G	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right;">PKIB4958J</p>
7	GR	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	
8	LG	Combination switch output 1	ON	Lighting, turn, wiper OFF Wiper dial position 4	
9	BR	Combination switch output 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	
10	O	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	
15	SB	Door switch (DR) signal	OFF	Front door switch (driver side) ON (open) OFF (closed)	
21	P	CAN- L	—	—	—
22	L	CAN- H	—	—	—
24	R	Light and rain sensor signal	—	Ignition switch ON OFF	 <p style="text-align: right;">PKIC1618E</p>
36	P	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	Approx. 0V
37	L	Combination switch input 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	
38	V	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	
39	SB	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	
40	R	Combination switch input 1	ON	Lighting, turn, wiper OFF Wiper dial position 4	
42	V	Light and rain sensor power supply	ON	—	Battery voltage
55	B	Ground	ON	—	Approx. 0V
57	W	Battery power supply (fusible link)	OFF	—	Battery voltage

AUTO LIGHT SYSTEM

Terminals and Reference Values for IPDM E/R

EKS00Q82

Terminal No.	Wire color	Signal name	Measuring condition		Reference value	
			Ignition switch	Operation or condition		
10	SB	Daytime light relay power supply*1	OFF	—	Battery voltage	
28	R	Front combination lamp LH*2 (clearance lamp)	ON	Lighting switch 1ST position	OFF	Approx. 0V
					ON	Battery voltage
38	B	Ground	ON	—	Approx. 0V	
39	L	CAN- H	—	—	—	
40	P	CAN- L	—	—	—	
44	SB	daytime light relay signal*1	ON	Engine running	Approx. 0V	
				Engine stopped	Battery voltage	
49	GR	Front combination lamp RH*2 (clearance lamp)	ON	Lighting switch 1ST position	OFF	Approx. 0V
					ON	Battery voltage
52	P	Headlamp low (LH)	ON	Lighting switch 2ND position	OFF	Approx. 0V
					ON	Battery voltage
54	R	Headlamp low (RH)	ON	Lighting switch 2ND position	OFF	Approx. 0V
					ON	Battery voltage
55	G	Headlamp high (LH)	ON	Lighting switch HIGH or PASS position	OFF	Approx. 0V
					ON	Battery voltage
56	L	Headlamp high (RH)	ON	Lighting switch HIGH or PASS position	OFF	Approx. 0V
					ON	Battery voltage
57	GR	Rear combination lamp (RH and LH) (tail) and license plate lamp (RH and LH)*2	ON	Lighting switch 1ST position	OFF	Approx. 0V
					ON	Battery voltage
59	B	Ground	ON	—	Approx. 0V	

*1 : With daytime light system, *2 : Without daytime light system

How to Proceed With Trouble Diagnosis

EKS00Q83

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-49, "System Description"](#) .
3. Carry out the Preliminary Check. Refer to [LT-58, "Preliminary Check"](#) .
4. Check symptom and repair or replace the cause of malfunction. Refer to [LT-62, "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

AUTO LIGHT SYSTEM

EKS00Q84

Preliminary Check SETTING CHANGE FUNCTIONS

- Sensitivity of auto light system can be adjusted using CONSULT-II. Refer to [LT-60, "WORK SUPPORT"](#) .

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES OR FUSIBLE LINK

Check for blown fuses or fusible link.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	G
	Ignition switch ON or START position	1
IPDM E/R	Battery	34
		35
		36* ¹
		37* ¹
		40
		41
		45* ²
		52
		53

*¹ : Without daytime light system, *² : With daytime light system

Refer to [LT-52, "Wiring Diagram — AUTO/L —"](#) .

OK or NG

OK >> GO TO 2.

NG >> If fuse or fusible link is blown, be sure to eliminate cause of malfunction before installing new fuse or fusible link. Refer to [PG-4, "POWER SUPPLY ROUTING CIRCUIT"](#) .

2. CHECK POWER SUPPLY CIRCUIT

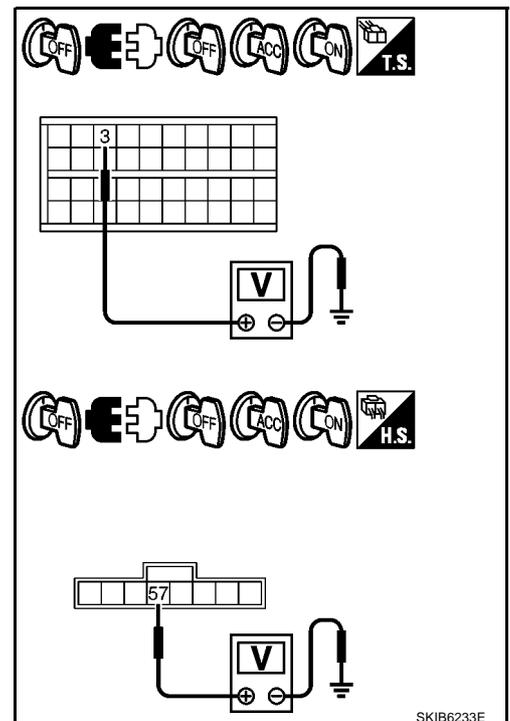
1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check voltage between BCM harness connector and ground.

Terminal (+)		Terminal (-)	Ignition switch position		
BCM connector	Terminal		OFF	ACC	ON
M42	3	Ground	Approx. 0V	Approx. 0V	Battery voltage
M44	57		Battery voltage	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.



SKIB6233E

AUTO LIGHT SYSTEM

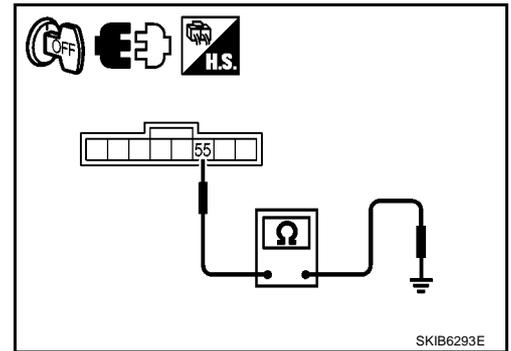
3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

BCM connector	Terminal	Ground	Continuity
M44	55		Yes

OK or NG

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



CONSULT-II Function (BCM)

EKS00Q85

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

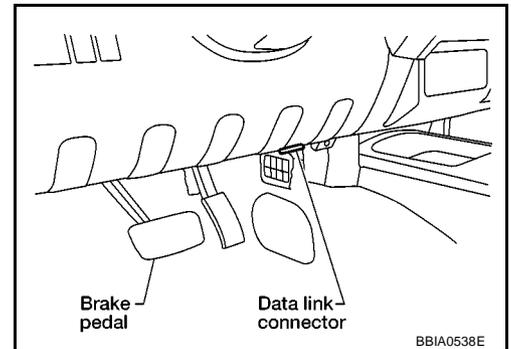
BCM diagnosis part	Diagnosis mode	Description
HEADLAMP	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
BCM	SELF-DIAG RESULTS	BCM performs self-diagnosis of CAN communication.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.

CONSULT-II OPERATION

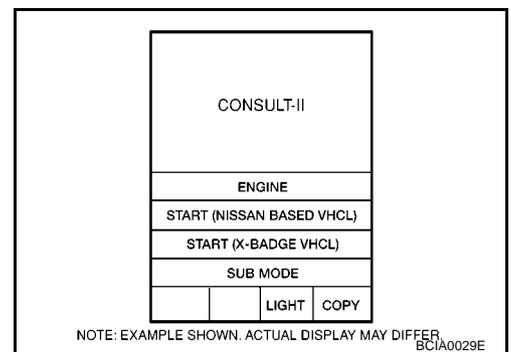
CAUTION:

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.

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

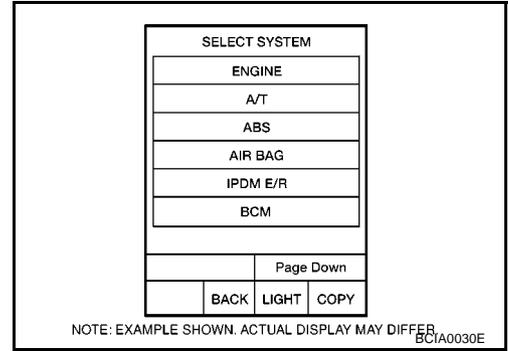


- Touch "START (NISSAN BASED VHCL)".

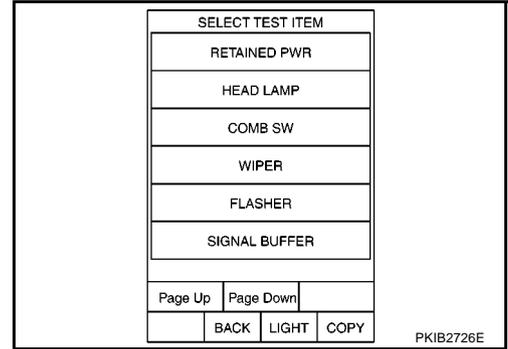


AUTO LIGHT SYSTEM

3. Touch "BCM" on "SELECT SYSTEM" screen.
If "BCM" is not indicated, refer to [GI-50. "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" on "SELECT WORK ITEM" screen.
4. Touch "START".
5. Touch "MODE 1-4" of setting to be changed.
6. Touch "CHANGE SET".
7. The setting will be changed and "CUSTOMIZING COMPLETED" will be displayed.
8. Touch "END".

Work Support Setting Item

Work item	Description
CUSTOM A/LIGHT SETTING	Auto light sensitivity can be changed in this mode. Sensitivity can be adjusted in four modes. <ul style="list-style-type: none"> ● MODE 1 (Factory setting)/ MODE 2 (More sensitive Mode 1) /MODE 3 (More sensitive than Mode 2)/ MODE4 (Less sensitive than Mode 1)

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 "SELECT MONITOR ITEM" screen.

ALL SIGNALS	Monitors all the signals.
SELECTION FROM MENU	Selects items and monitors them.

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

AUTO LIGHT SYSTEM

Display Item List

Monitor item	Contents
IGN ON SW "ON/OFF"	Displays status (ignition switch IGN position: ON/other: OFF) of ignition switch judged from the ignition switch signal.
ACC ON SW "ON/OFF"	Displays status (ignition switch ACC or IGN position: ON/other: OFF) of ignition switch judged from the ignition switch signal.
HI BEAM SW "ON/OFF"	Displays status (lighting switch high beam position: ON/other: OFF) of high beam switch judged from the lighting switch signal.
HEAD LAMP SW 1 "ON/OFF"	Displays status (lighting switch 2ND position: ON/other: OFF) of headlamp 1 switch judged from the lighting switch signal.
HEAD LAMP SW 2 "ON/OFF"	Displays status (lighting switch 2ND position: ON/other: OFF) of headlamp 2 switch judged from the lighting switch signal.
LIGHT SW 1ST "ON/OFF"	Displays status (lighting switch 1ST or 2ND position: ON/other: OFF) of lighting switch 1ST position switch judged from the lighting switch signal.
PASSING SW "ON/OFF"	Displays status (lighting switch passing position: ON/other: OFF) of passing switch judged from the lighting switch signal.
FR FOG SW "ON/OFF"	Displays status (lighting switch front fog lamp ON position: ON/others: OFF) of front fog lamp switch judged from the lighting switch signal.
RR FOG SW "ON/OFF"	Displays status (lighting switch rear fog lamp ON position: ON/others: OFF) of rear fog lamp switch judged from the lighting switch signal.
DOOR SW - DR "ON/OFF"	Displays status (door is open: ON/door is closed: OFF) of driver side door switch judged from the driver side door switch signal.
DOOR SW - AS "ON/OFF"	Displays status (door is open: ON/door is closed: OFF) of passenger side door switch judged from the passenger side door switch signal.
DOOR SW - RR "ON/OFF"	Displays status (door is open: ON/door is closed: OFF) of rear door switch (RH) judged from the rear door switch (RH) signal.
DOOR SW - RL "ON/OFF"	Displays status (door is open: ON/door is closed: OFF) of rear door switch (LH) judged from the rear door switch (LH) signal.
BACK DOOR SW "ON/OFF"	Displays status (door is open: ON/door is closed: OFF) of back door switch judged from the back door switch signal.
TURN SIGNAL R "ON/OFF"	Displays status (turn signal switch right position: ON/other: OFF) of turn RH switch judged from the turn signal switch signal.
TURN SIGNAL L "ON/OFF"	Displays status (turn signal switch left position: ON/other: OFF) of turn LH switch judged from the turn signal switch signal.
CARGO LAMP SW ^{NOTE} "OFF"	—
HD LIGHT TIMER "10 sec/ 30 sec"	Displays status (MODE 1: 10 sec./ MODE 2: 30 sec.) of head light timer.
LIT-SEN FAIL ^{NOTE} "OK"	—
AUT LIGHT SYS ^{NOTE} "OFF"	—

NOTE:

This item is displayed, but cannot be monitored.

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 "OFF" 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.

AUTO LIGHT SYSTEM

Test item	Description
RR FOG LAMP	Allows rear fog lamp to operate by switching ON-OFF.
FR FOG LAMP	Allows front fog lamp relay to operate by switching ON-OFF.

Trouble Diagnosis Chart by Symptom

EKS00Q86

Trouble phenomenon	Malfunction system and reference
<ul style="list-style-type: none"> ● 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. 	<ul style="list-style-type: none"> ● Refer to LT-60, "WORK SUPPORT" . ● Refer to LT-118, "Combination Switch Inspection" . ● Refer to LT-63, "Light and Rain Sensor System Inspection" . <p>If above systems are normal, replace BCM. Refer to BCS-17, "Removal and Installation of BCM" .</p>
<p>Parking lamps illuminate when outside of the vehicle becomes dark, but headlamps stay off. (Lighting switch 1ST position and 2nd position operate normally.)</p>	<ul style="list-style-type: none"> ● Refer to LT-60, "WORK SUPPORT" . ● Refer to LT-63, "Light and Rain Sensor System Inspection" . <p>If above systems are normal, replace BCM. Refer to BCS-17, "Removal and Installation of BCM" .</p>
<p>Auto light adjustment system will not operate. (Lighting switch AUTO, 1ST position and 2ND position operate normally.)</p>	<ul style="list-style-type: none"> ● Refer to LT-63, "Light and Rain Sensor System Inspection" . <p>If above system is normal, replace BCM. Refer to BCS-17, "Removal and Installation of BCM" .</p>
<p>Auto light adjustment system will not operate.</p>	<ul style="list-style-type: none"> ● CAN communication line to BCM inspection. Refer to BCS-16, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" .
<p>Shut off delay feature will not operate.</p>	<ul style="list-style-type: none"> ● CAN communication line inspection between BCM and combination meter. Refer to BCS-16, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" . ● Refer to BL-39, "Check Door Switch" . <p>If above system is normal, replace BCM. Refer to BCS-17, "Removal and Installation of BCM" .</p>

Lighting Switch Inspection

EKS00Q87

1. CHECK LIGHTING SWITCH INPUT SIGNAL

Ⓟ With CONSULT-II

1. Select "BCM" on CONSULT-II.
2. Select "HEAD LAMP" on "SELECT TEST ITEM" screen. Then select "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Make sure "AUTO LIGHT SW" turns ON-OFF linked with operation of lighting switch.

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

ⓧ Without CONSULT-II

Refer to [LT-118, "Combination Switch Inspection"](#) .

OK or NG

OK >> INSPECTION END

NG >> Check lighting switch. Refer to [LT-118, "Combination Switch Inspection"](#) .

DATA MONITOR			
MONITOR		NO DTC	
AUTO LIGHT SW		ON	
MODE	BACK	LIGHT	COPY

PKIA6344E

AUTO LIGHT SYSTEM

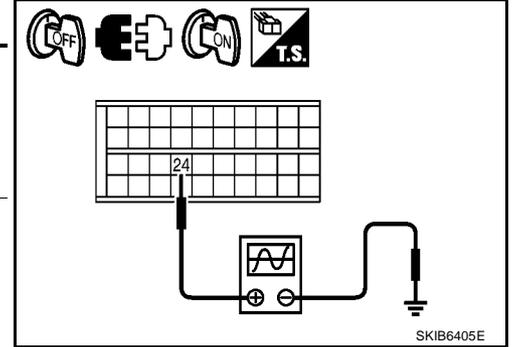
EKS00Q88

Light and Rain Sensor System Inspection

1. CHECK LIGHT AND RAIN SENSOR INPUT SIGNAL

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

Terminal (+)		Terminal (-)	Condition		Voltage
BCM connector	Terminal				
M42	24	Ground	Ignition switch	ON	
				OFF	



OK or NG

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

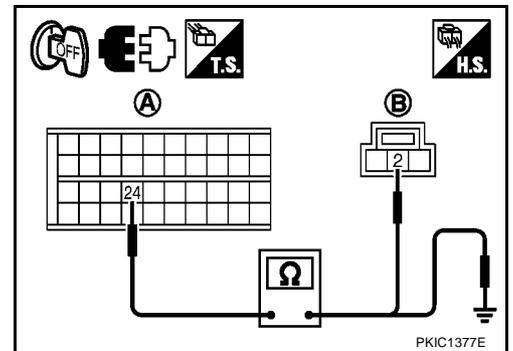
2. CHECK LIGHT AND RAIN SENSOR SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect light and rain sensor connector.
3. Check continuity between BCM harness connector (A) and light and rain sensor harness connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
M42	24	R3	2	Yes

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

A		Ground	Continuity
Connector	Terminal		
M42	24		No



OK or NG

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

AUTO LIGHT SYSTEM

3. CHECK LIGHT AND RAIN SENSOR SIGNAL GROUND CIRCUIT

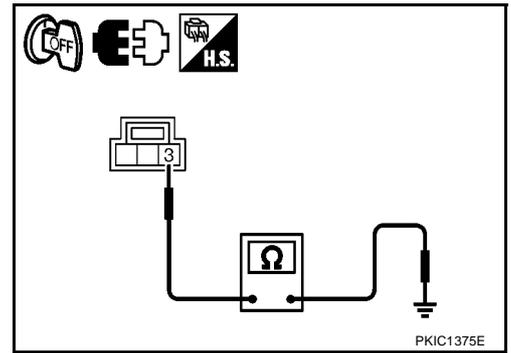
Check continuity between light and rain sensor harness connector and ground.

Light and rain sensor connector	Terminal	Ground	Continuity
R3	3		Yes

OK or NG

OK >> GO TO 4.

NG >> Repair harness or connector.



4. CHECK LIGHT AND RAIN SENSOR POWER CIRCUIT (2)

1. Check continuity between BCM harness connector (A) and light and rain sensor harness connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
M43	42	R3	1	Yes

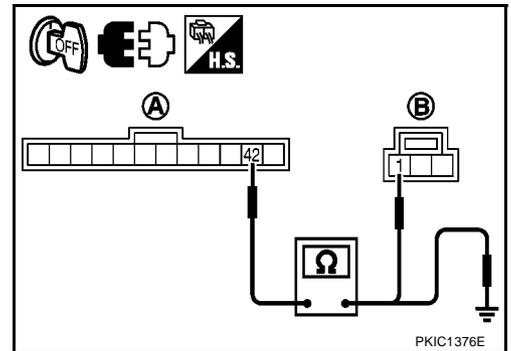
2. Check continuity between BCM harness connector (A) and ground.

A		Ground	Continuity
Connector	Terminal		
M43	42		No

OK or NG

OK >> GO TO 5.

NG >> Repair harness or connector.



5. CHECK LIGHT AND RAIN SENSOR POWER CIRCUIT (1)

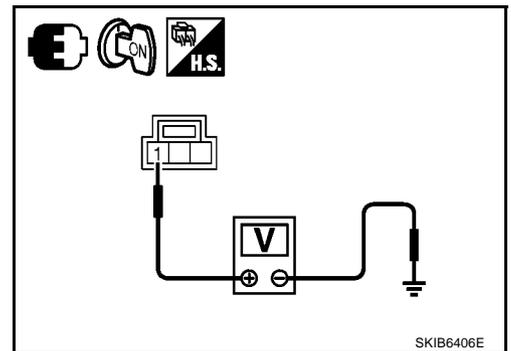
1. Connect BCM connector.
2. Turn ignition switch ON.
3. Check voltage between light and rain sensor harness connector and ground.

Terminal		(-)	Voltage
(+) Terminal			
Light and rain sensor connector	Terminal		
R3	1	Ground	Battery voltage

OK or NG

OK >> Replace light and rain sensor. Refer to [LT-65, "Removal and Installation of Light and Rain Sensor"](#) .

NG >> Replace BCM. Refer to [BCS-17, "Removal and Installation of BCM"](#) .



AUTO LIGHT SYSTEM

Removal and Installation of Light and Rain Sensor

EKS00Q89

CAUTION:

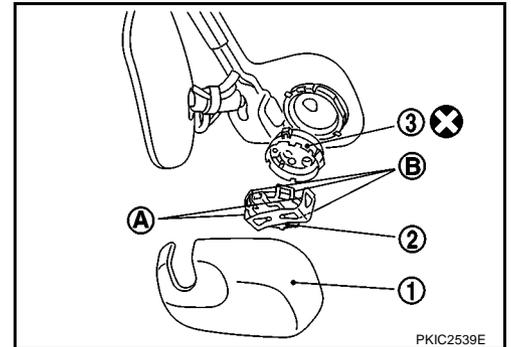
When light and rain sensor is removed from windscreen, gel/adhesive part of housing should not be re-used.

REMOVAL

1. Remove light and rain sensor cover (1).
2. Remove metal clip (A).
3. Remove light and rain sensor (2).
4. Disconnect light and rain sensor connector.
5. Remove plastic clip (B).
6. Remove housing (3) of light and rain sensor.

CAUTION:

Don't touch the electronic circuit board.



⊗ : Always replace after every

INSTALLATION

Installation is the reverse order of removal.

CAUTION:

- Don't touch gel/adhesive.
- Surface of windscreen should be cleaned.

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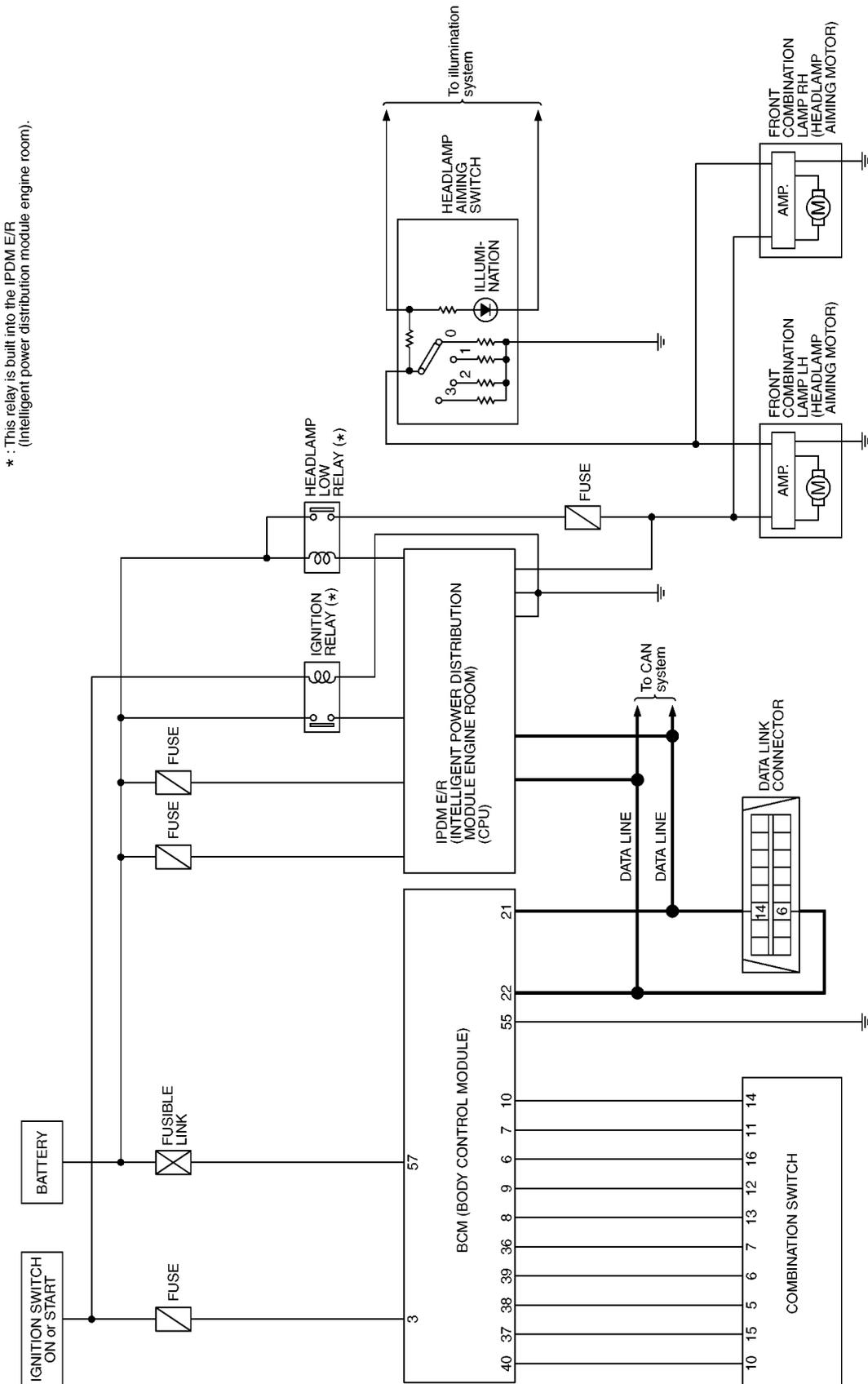
HEADLAMP AIMING CONTROL (MANUAL)

HEADLAMP AIMING CONTROL (MANUAL)

PFP:25190

Schematic

EKS00P39



* : This relay is built into the IPDM E/R (Intelligent power distribution module engine room).

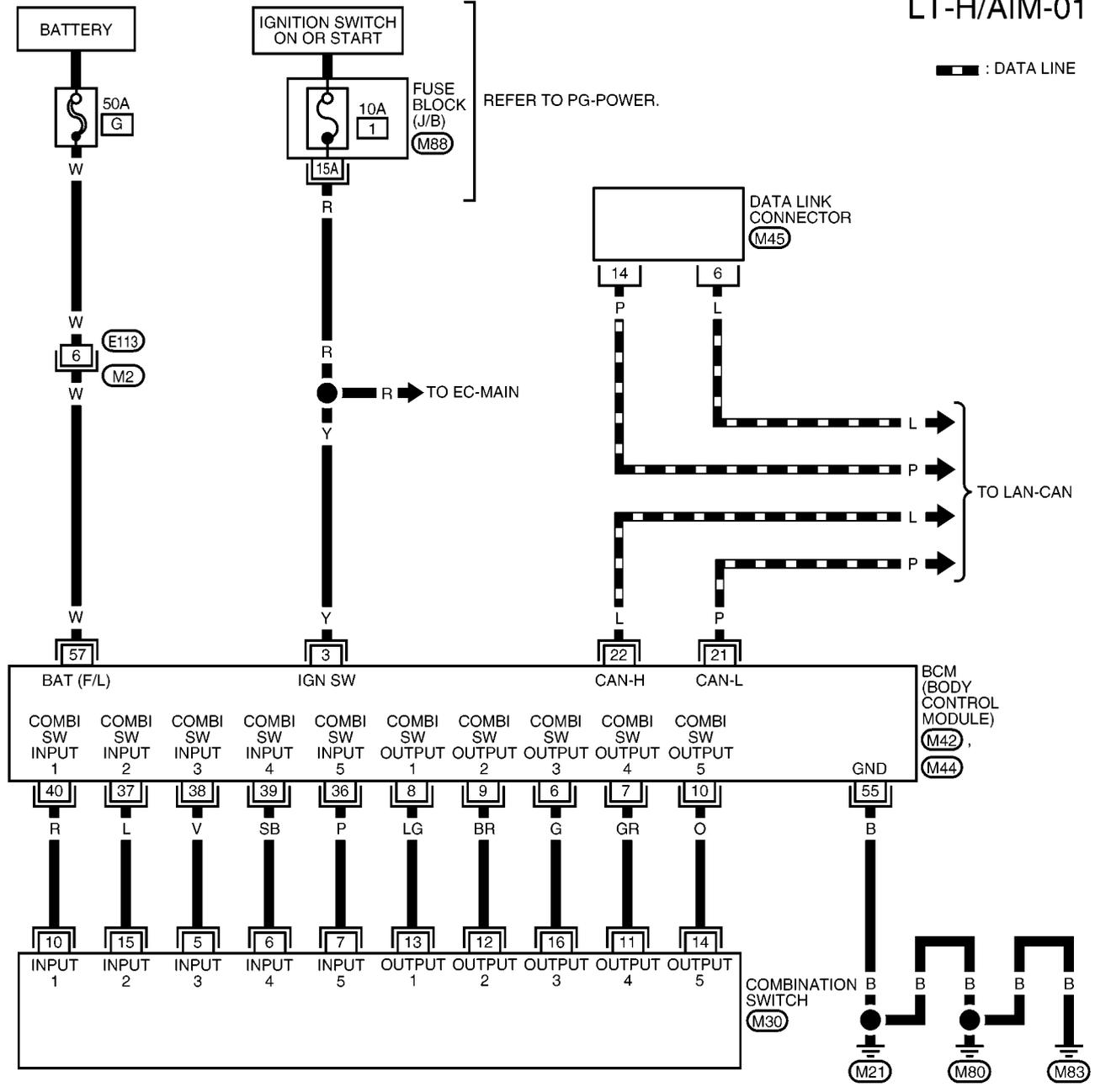
HEADLAMP AIMING CONTROL (MANUAL)

EKS00PCK

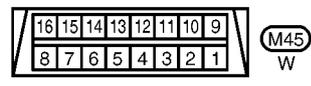
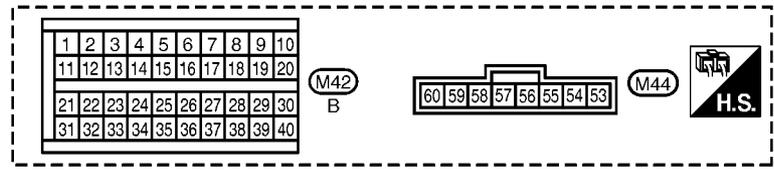
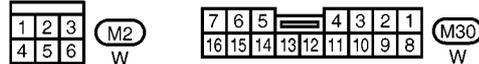
Wiring Diagram — H/AIM —

LT-H/AIM-01

▬ : DATA LINE



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REFER TO THE FOLLOWING.
 (M88) - FUSE BLOCK-
 JUNCTION BOX (J/B)

MKWA3566E

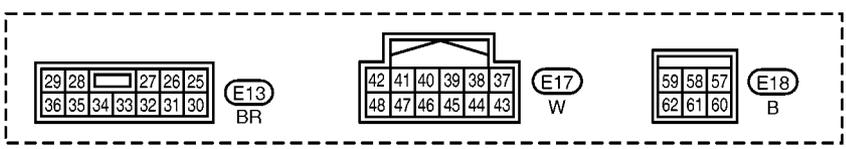
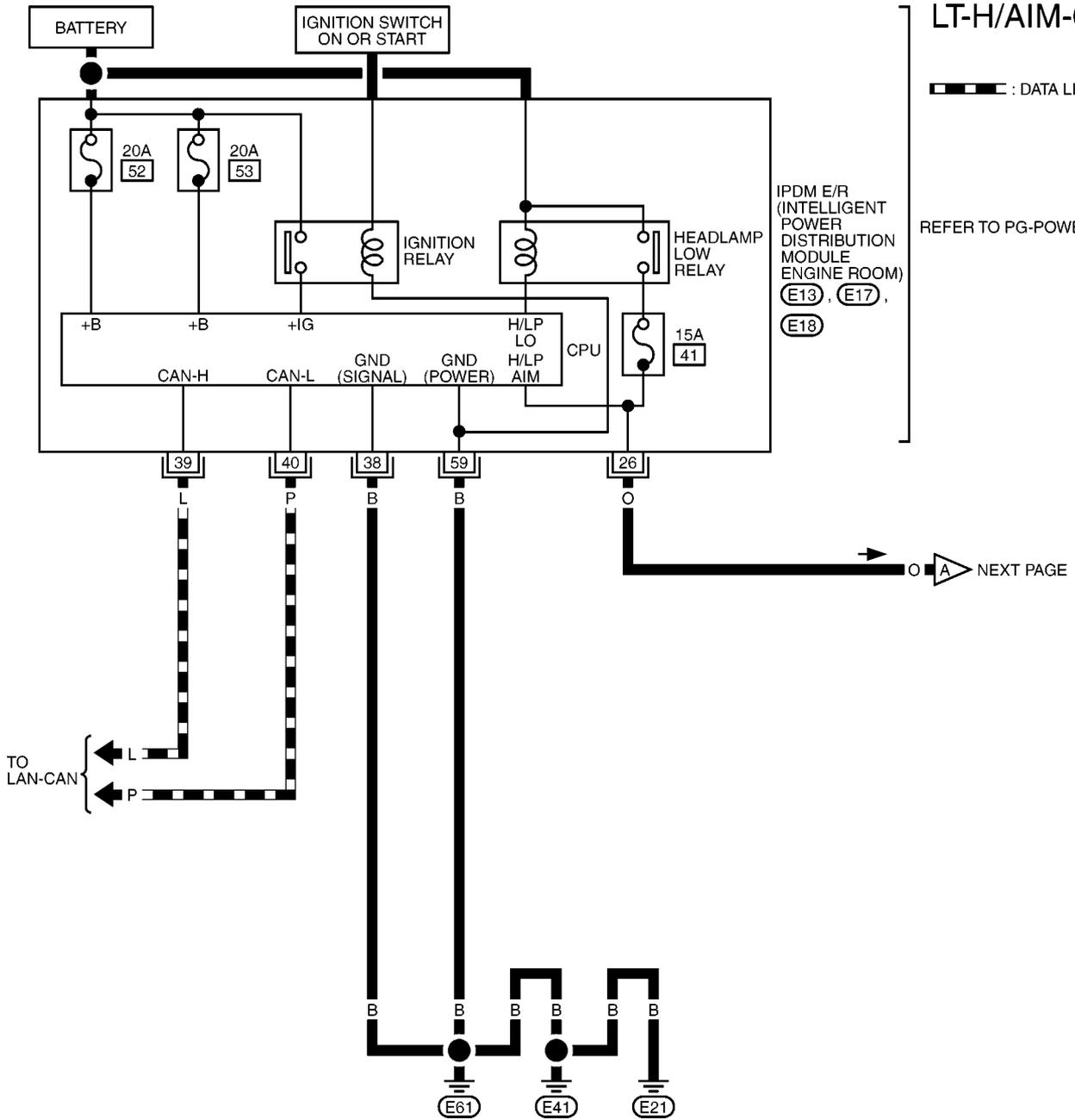
HEADLAMP AIMING CONTROL (MANUAL)

LT-H/AIM-02

▬ : DATA LINE

REFER TO PG-POWER.

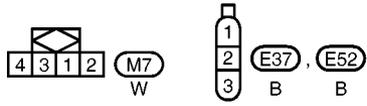
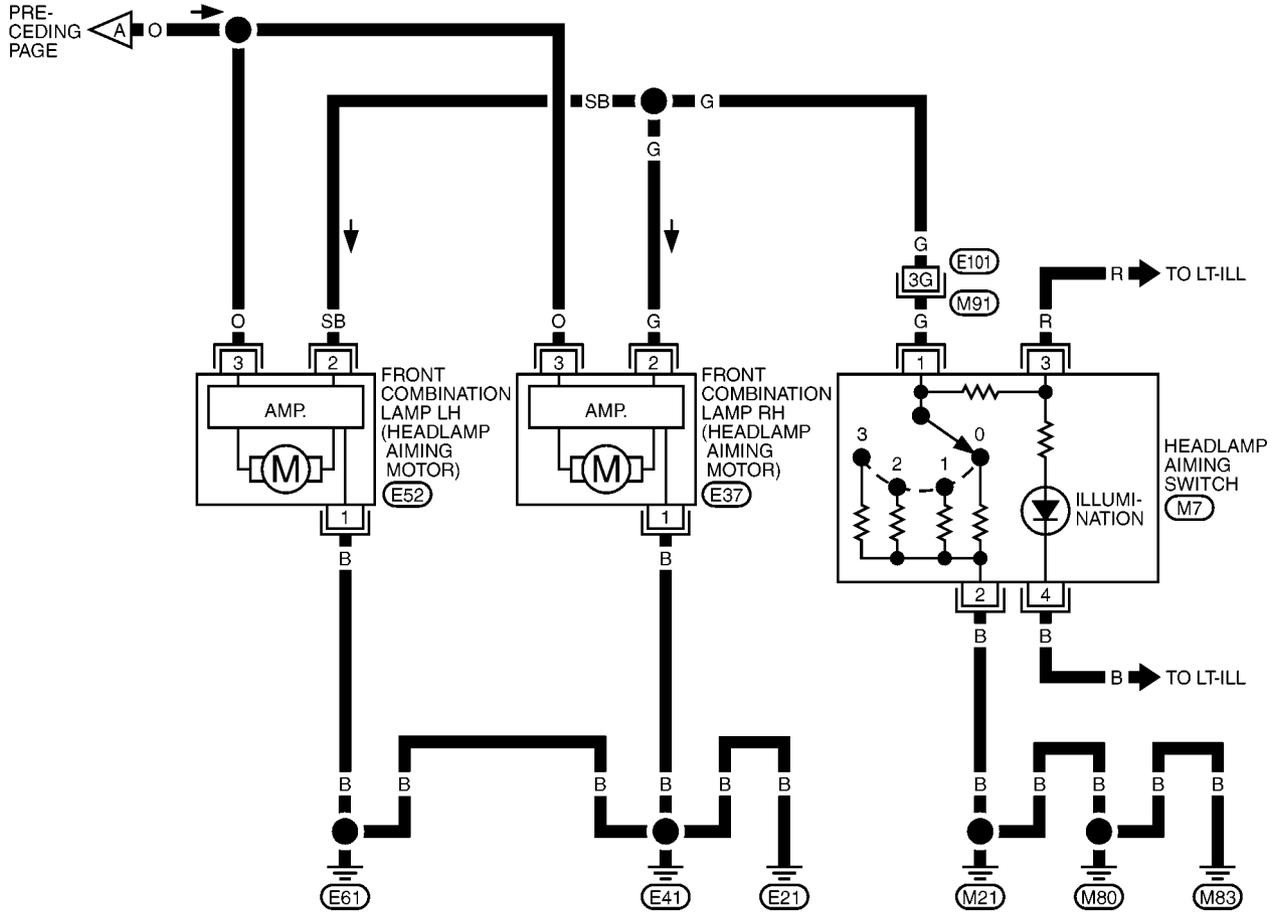
IPDM E/R
(INTELLIGENT
POWER
DISTRIBUTION
MODULE
ENGINE ROOM)
(E13), (E17),
(E18)



HEADLAMP AIMING CONTROL (MANUAL)

LT-H/AIM-03

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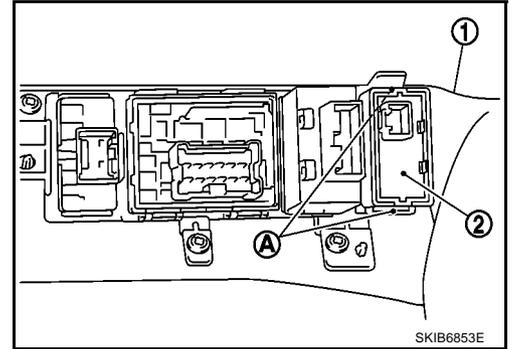
REFER TO THE FOLLOWING.
 (M91) -SUPETR ,MULTIPLE JUNCTION (SMJ)

LT

HEADLAMP AIMING CONTROL (MANUAL)

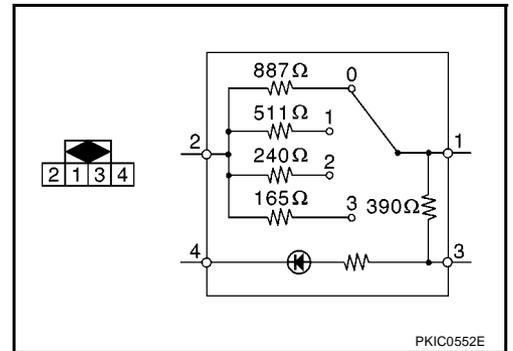
Removal and Installation

1. Remove lower instrument panel (driver side) (1). Refer to [IP-10](#), "[Removal and Installation](#)".
2. Press headlamp aiming switch (2) fixing pawl (A) and remove unit from instrument lower panel (driver side) (1).



Switch Circuit Inspection

Using a circuit tester, check resistance between headlamp aiming switch connector terminals in each operation status of aiming switch.



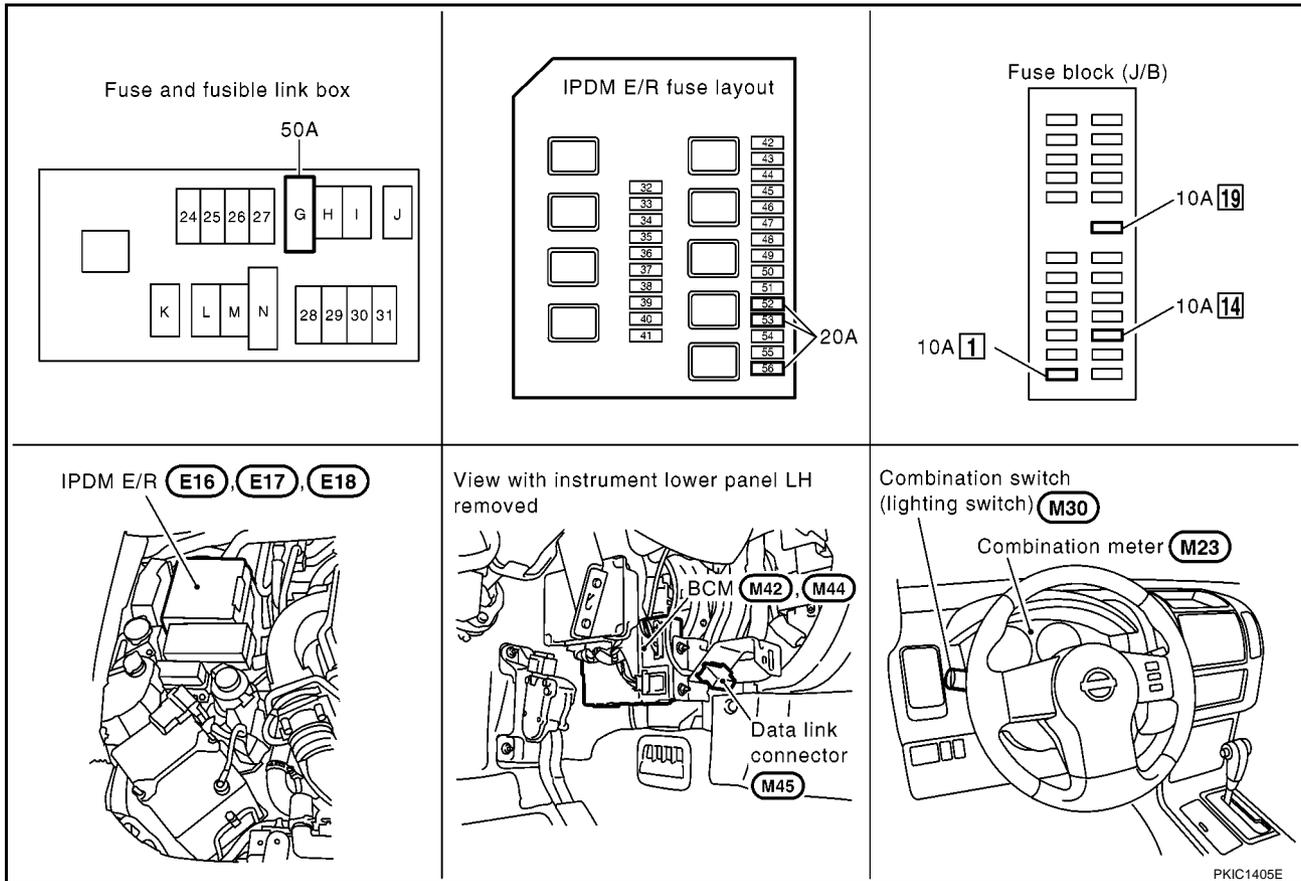
FRONT FOG LAMP

FRONT FOG LAMP

PPF:26150

Component Parts and Harness Connector Location

EKS00P3Y



System Description

EKS00P3Z

The control of the front fog lamps is dependent upon the position of the combination switch (lighting switch). The lighting switch must be in the 1ST position, 2ND position or AUTO position (LOW beam is ON) for front fog lamp operation. When the lighting switch is placed in the front fog lamp position, the BCM (body control module) receives input signal requesting the front 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) through the CAN communication. 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

- to ignition relay (located in IPDM E/R) and
- to front fog lamp relay (located in IPDM E/R), from battery directly,
- through 50A fusible link (letter G, located in fuse and fusible link box)
- to BCM terminal 57,
- through 20A fuse (No. 52, located in IPDM E/R) and
- through 20A fuse (No. 53, located in IPDM E/R)
- to CPU (located in IPDM E/R),
- through 10A fuse [No. 19, located in fuse block (J/B)]
- to combination meter terminal 3.

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

- to ignition relay (located in IPDM E/R),
- through 10A fuse [No. 1, located in fuse block (J/B)]
- to BCM terminal 3
- through 10A fuse [No. 14, located in fuse block (J/B)]

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FRONT FOG LAMP

- to combination meter terminal 16.

Ground is supplied

- to BCM terminal 55 and
- to combination meter terminal 23
- through grounds M21, M80 and M83,
- to IPDM E/R terminals 38 and 59
- through grounds E21, E41 and E61.

FOG LAMP OPERATION

The front fog lamp switch is built into the combination switch. The lighting switch must be in the 1ST position, 2ND position or AUTO position (LOW beam is ON) and the front fog lamp switch must be ON for front fog lamp operation.

With the front fog lamp switch in the ON position, the CPU of the IPDM E/R grounds the coil side of the front fog lamp relay. The front fog lamp relay then directs power

- through 20A fuse (No. 56, located in IPDM E/R)
- through IPDM E/R terminal 50
- to front fog lamp LH terminal 1 and
- through IPDM E/R terminal 51
- to front fog lamp RH terminal 1.

Ground is supplied at all times

- to front fog lamp RH and LH terminal 2
- through grounds E21, E41 and E61.

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

COMBINATION SWITCH READING FUNCTION

Refer to [BCS-3, "COMBINATION SWITCH READING FUNCTION"](#) .

CAN Communication System Description

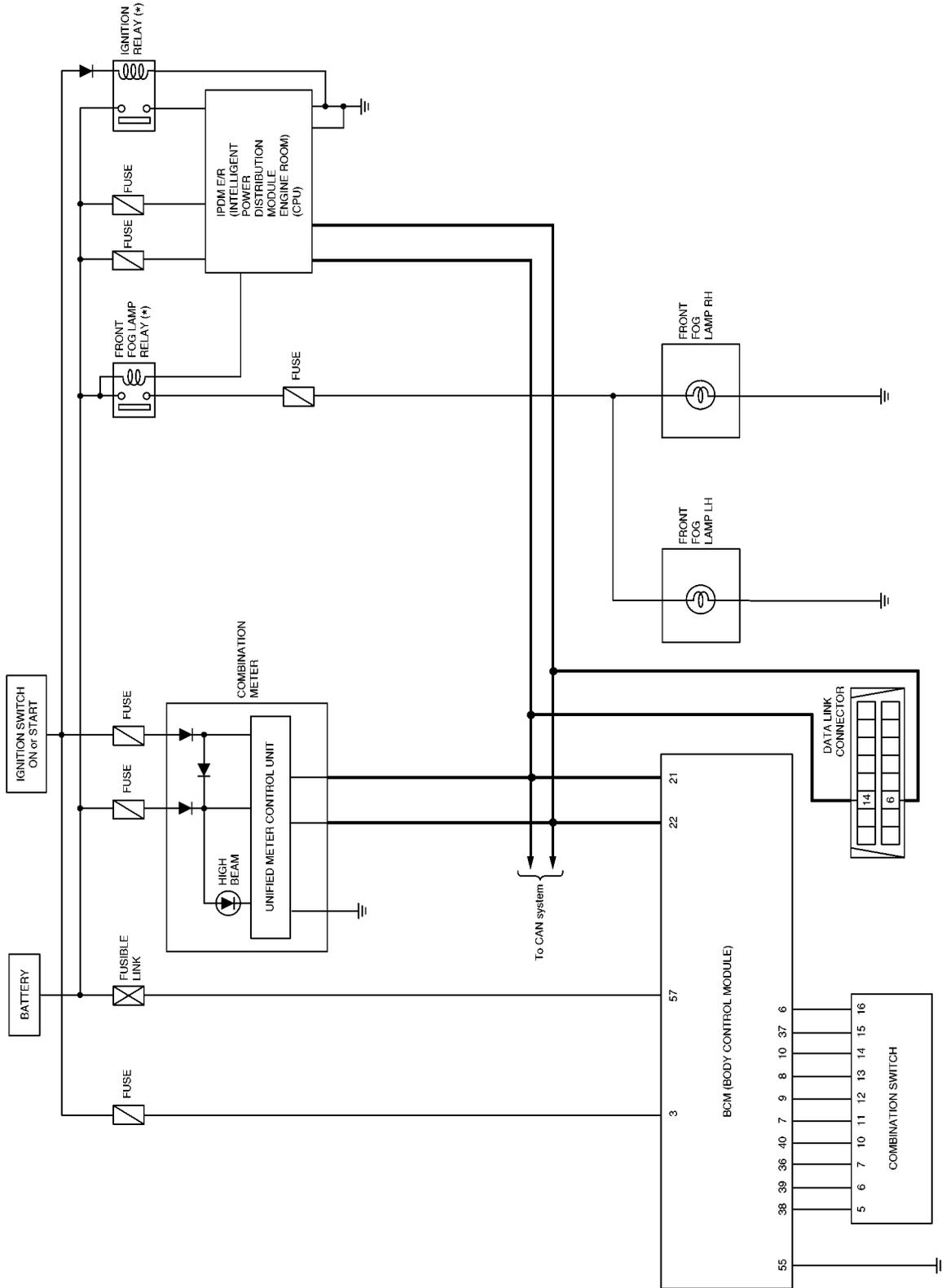
Refer to [LAN-23, "CAN COMMUNICATION"](#) .

EKS00P40

FRONT FOG LAMP

Schematic

EKS00P41



*: This relay is build into the IPDM/ER (Intelligent power distribution module engine room).

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MKWA3669E

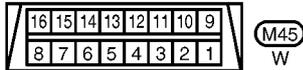
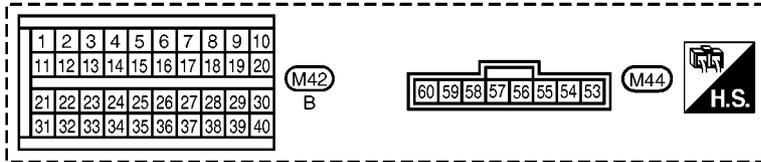
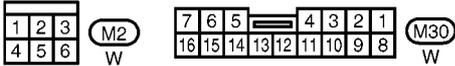
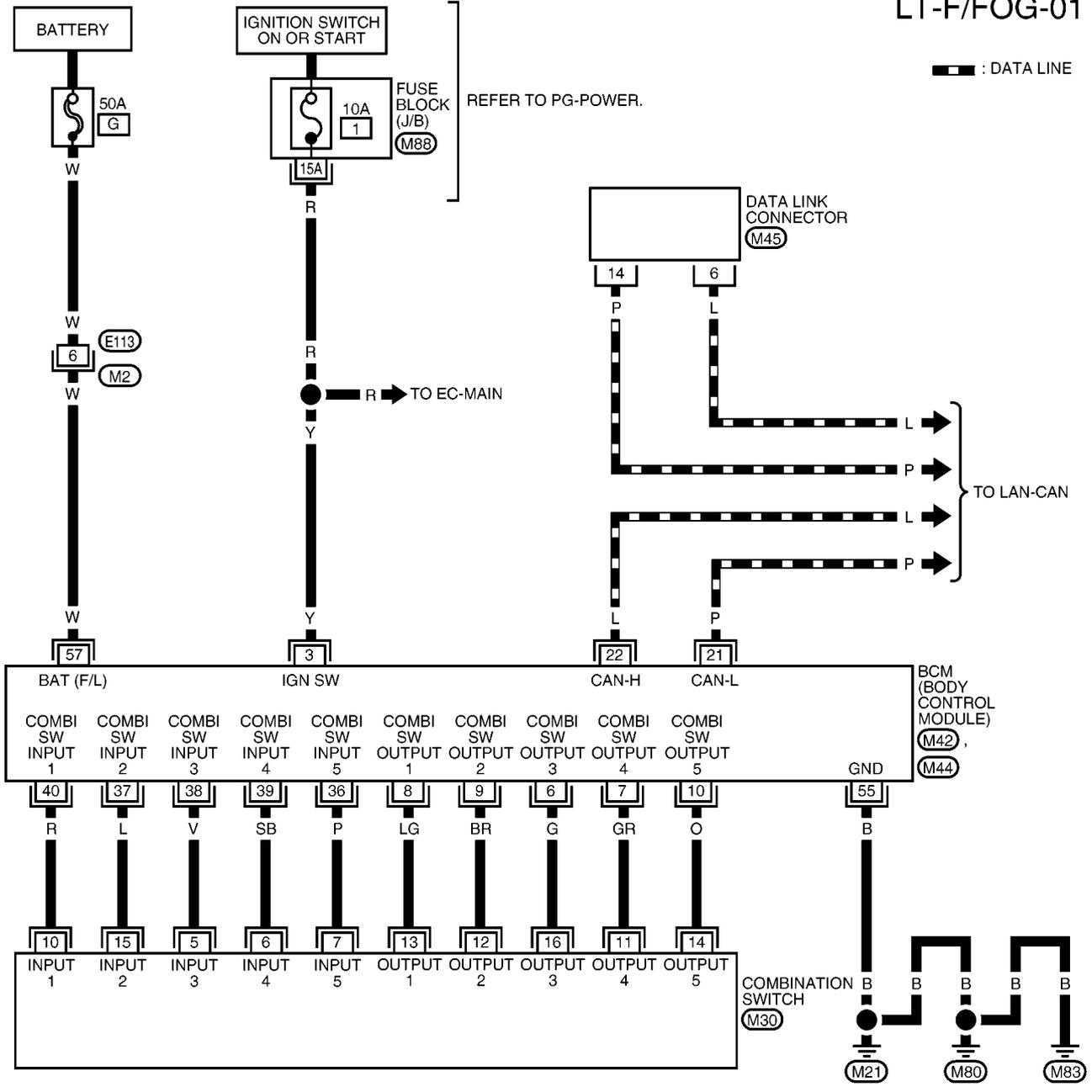
FRONT FOG LAMP

EKS00P42

Wiring Diagram — F/FOG —

LT-F/FOG-01

▬ : DATA LINE



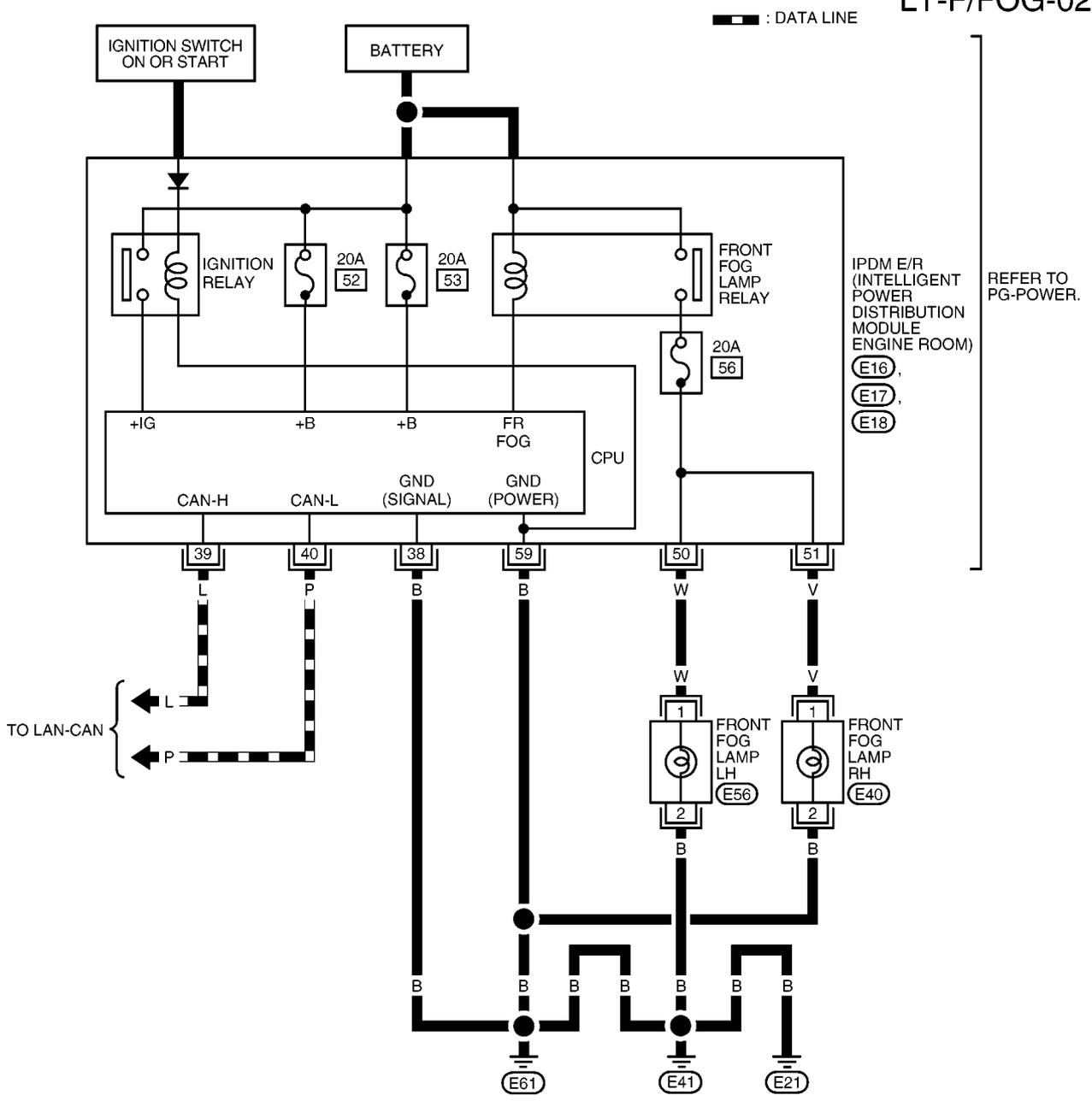
REFER TO THE FOLLOWING.

(M88) - FUSE BLOCK- JUNCTION BOX (J/B)

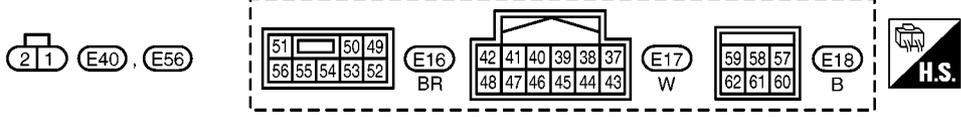
MKWA3569E

FRONT FOG LAMP

LT-F/FOG-02



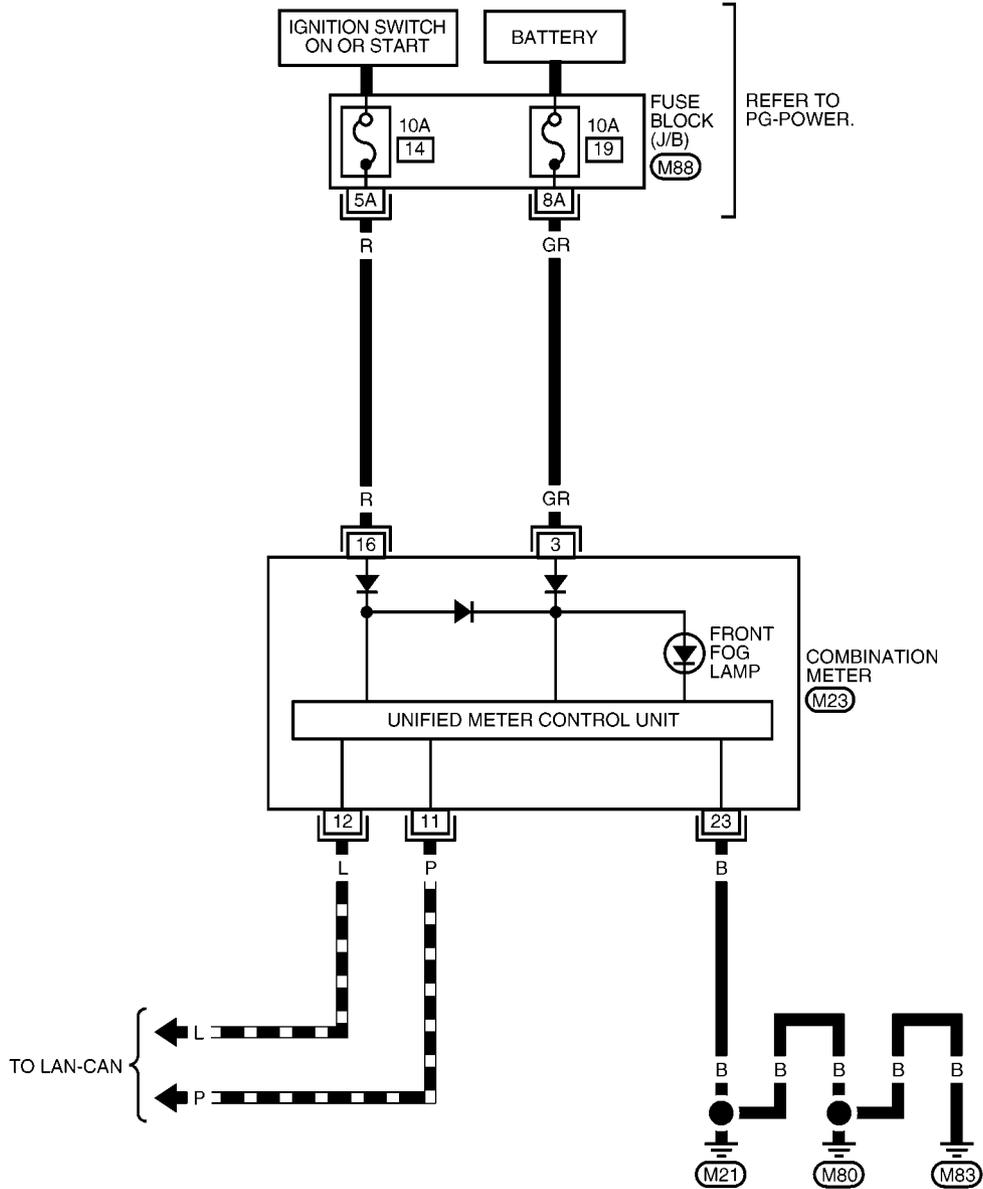
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FRONT FOG LAMP

LT-F/FOG-03

▬ : DATA LINE



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	(M23)
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	W

REFER TO THE FOLLOWING.

(M88) - FUSE BLOCK-JUNCTION BOX (J/B)

FRONT FOG LAMP

Terminals and Reference Values for BCM

EKS00P43

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
3	Y	Ignition switch (ON)	ON	—	Battery voltage
6	G	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	
7	GR	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	
8	LG	Combination switch output 1	ON	Lighting, turn, wiper OFF Wiper dial position 4	
9	BR	Combination switch output 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	
10	O	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	
21	P	CAN- L	—	—	
22	L	CAN- H	—	—	—
36	P	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	Approx. 0V
37	L	Combination switch input 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	
38	V	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	
39	SB	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	
40	R	Combination switch input 1	ON	Lighting, turn, wiper OFF Wiper dial position 4	
55	B	Ground	ON	—	Approx. 0V
57	W	Battery power supply (fusible link)	OFF	—	Battery voltage

Terminals and Reference Values for IPDM E/R

EKS00P44

Terminal No.	Wire color	Signal name	Measuring condition		Reference value	
			Ignition switch	Operation or condition		
38	B	Ground	ON	—	Approx. 0V	
39	L	CAN- H	—	—	—	
40	P	CAN- L	—	—	—	
50	W	Front fog lamp (LH)	ON	Lighting switch must be in the 1ST position, 2ND position or AUTO position (LOW beam is ON)	Front fog lamp switch: OFF	Approx. 0V
				Front fog lamp switch: ON	Battery voltage	
51	V	Front fog lamp (RH)	ON	Lighting switch must be in the 1ST position, 2ND position or AUTO position (LOW beam is ON)	Front fog lamp switch: OFF	Approx. 0V
					Front fog lamp switch: ON	Battery voltage
59	B	Ground	ON	—	Approx. 0V	

FRONT FOG LAMP

EKS00P45

How to Proceed With Trouble Diagnosis

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-71, "System Description"](#) .
3. Perform the Preliminary Check. Refer to [LT-78, "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

EKS00P46

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES OR FUSIBLE LINK

Check for blown fuses or fusible link.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	G
	Ignition switch ON or START position	1
IPDM E/R	Battery	52
		53
	Battery (Fog lamps ON)	56
Combination meter	Battery	19
	Ignition switch ON or START position	14

Refer to [LT-74, "Wiring Diagram — F/FOG —"](#) .

OK or NG

OK >> GO TO 2.

NG >> If fuse or fusible link is blown, be sure to eliminate cause of malfunction before installing new fuse or fusible link. Refer to [PG-4, "POWER SUPPLY ROUTING CIRCUIT"](#) .

2. CHECK POWER SUPPLY CIRCUIT

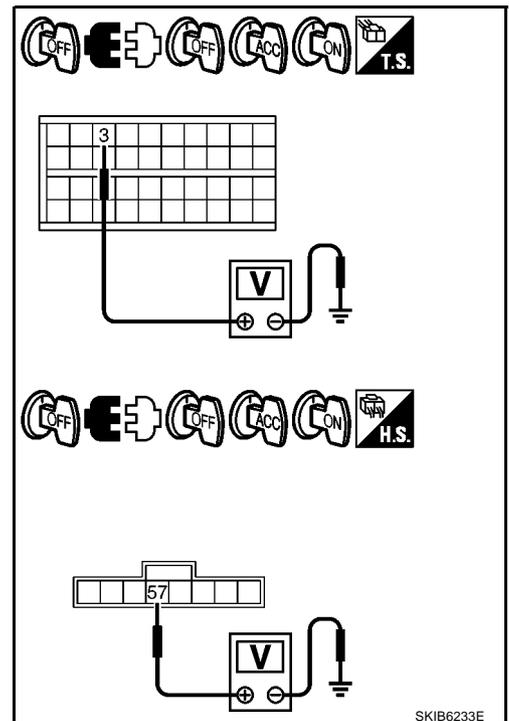
1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check voltage between BCM harness connector and ground.

Terminal		Ignition switch position			
(+)		(-)	OFF	ACC	ON
Connector	Terminal		Ground		
M42	3	Ground	0V	0V	Battery voltage
M44	57		Battery voltage	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.



SKIB6233E

FRONT FOG LAMP

3. CHECK GROUND CIRCUIT

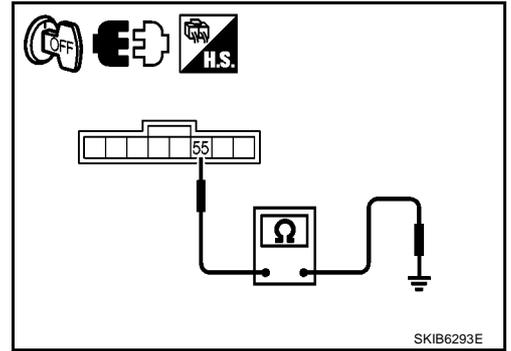
Check continuity between BCM harness connector and ground.

Connector	Terminal	Ground	Continuity
M44	55		Yes

OK or NG

OK >> INSPECTION END

NG >> Repair harness or connector.



EKS00P47

CONSULT-II Functions (BCM)

Refer to [LT-15, "CONSULT-II Functions \(BCM\)"](#) .

CONSULT-II Functions (IPDM E/R)

Refer to [LT-18, "CONSULT-II Functions \(IPDM E/R\)"](#) .

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FRONT FOG LAMP

EKS00P49

Front Fog Lamps Do Not Illuminate (Both Sides)

1. CHECK COMBINATION SWITCH INPUT SIGNAL

④ With CONSULT-II

1. Select "BCM" on CONSULT-II. Select "HEAD LAMP" on "SELECT TEST ITEM" screen.
2. Select "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Make sure "FR FOG SW" turns ON-OFF linked with operation of front fog lamp switch.

When front fog lamp switch : FR FOG SW ON is ON

DATA MONITOR			
MONITOR			
FR FOG SW		ON	
		RECORD	
MODE	BACK	LIGHT	COPY

PKIA7598E

⊗ Without CONSULT-II

Refer to [LT-118, "Combination Switch Inspection"](#) .

OK or NG

OK >> GO TO 2.

NG >> Check combination switch (lighting switch). Refer to [LT-118, "Combination Switch Inspection"](#) .

2. FRONT FOG LAMP ACTIVE TEST

④ With CONSULT-II

1. Select "IPDM E/R" on CONSULT-II. Select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "EXTERNAL LAMPS" on "SELECT TEST ITEM" screen.
3. Touch "FOG" screen.
4. Make sure front fog lamp operation.

Front fog lamps should operate.

⊗ Without CONSULT-II

1. Start auto active test. Refer to [PG-19, "Auto Active Test"](#) .
2. Make sure front fog lamp operation.

Front fog lamp should operate.

ACTIVE TEST			
EXTERNAL LAMPS		OFF	
		TAIL	
LO		HI	
FOG			
MODE	BACK	LIGHT	COPY

PKIC0936E

OK or NG

OK >> GO TO 3.

NG >> GO TO 4.

3. CHECK IPDM E/R

1. Select "IPDM E/R" on CONSULT-II. Select "DATA MONITOR" on "SELECT DIAG MODE" screen.
2. Make sure "FR FOG REQ" turns ON when front fog lamp switch is in ON position.

When front fog lamp switch : FR FOG REQ ON is ON position

DATA MONITOR			
MONITOR			
FR FOG REQ		ON	
		Page Down	
		RECORD	
MODE	BACK	LIGHT	COPY

SKIA5898E

OK or NG

OK >> Replace IPDM E/R. Refer to [PG-26, "Removal and Installation of IPDM E/R"](#) .

NG >> Replace BCM. Refer to [BCS-17, "Removal and Installation of BCM"](#) .

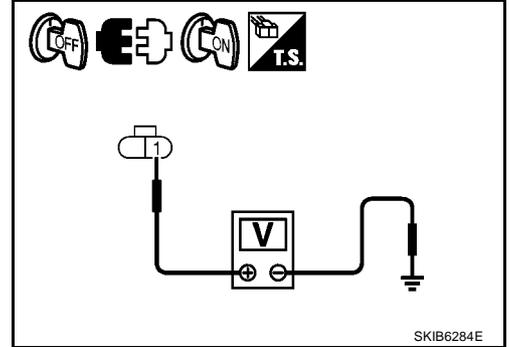
FRONT FOG LAMP

4. CHECK FOG LAMP INPUT SIGNAL

With CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect front fog lamp RH and LH connector.
3. Select "IPDM E/R" on CONSULT-II. Select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
4. Select "EXTERNAL LAMPS" on "SELECT TEST ITEM" screen.
5. Touch "FOG" screen.
6. Check voltage between front fog lamp (RH and LH) harness connector and ground.

Terminal			(-)	Voltage
(+)		Terminal		
Front fog lamp connector				Ground
RH	E40	1		
LH	E56	1		



Without CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect front fog lamp RH and LH connector.
3. Start auto active test. Refer to [PG-19, "Auto Active Test"](#).
4. When fog lamp is operating, check voltage between front fog lamp (RH and LH) harness connector and ground.

Terminal			(-)	Voltage
(+)		Terminal		
Front fog lamp connector				Ground
RH	E40	1		
LH	E56	1		

OK or NG

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

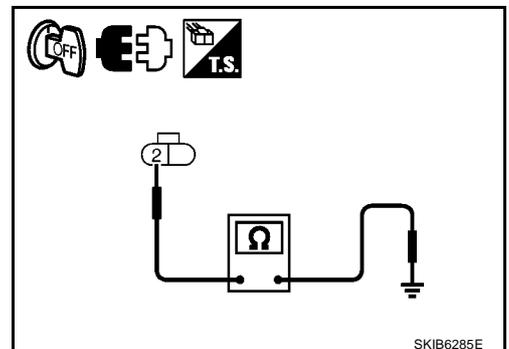
5. CHECK FRONT FOG LAMP GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between front fog lamp (RH and LH) harness connector and ground.

Front fog lamp connector		Terminal	Ground	Continuity
RH	E40	2		Ground
LH	E56	2		

OK or NG

- OK >> Check connector for connection, bend and loose fit. If it is normal, check front fog lamp bulbs.
 NG >> Repair harness or connector.



FRONT FOG LAMP

6. CHECK FRONT FOG LAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector (A) and front fog lamp (RH and LH) harness connector (B).

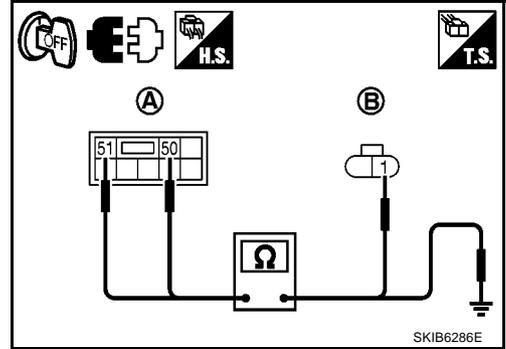
Circuit	A		B		Continuity
	Connector	Terminal	Connector	Terminal	
RH	E16	51	E40	1	Yes
LH		50	E56	1	

4. Check harness continuity between IPDM E/R harness connector (A) terminal and ground.

A			Ground	Continuity
Connector		Terminal		
RH	E16	51		No
LH		50		

OK or NG

- OK >> Replace IPDM E/R. Refer to [PG-26, "Removal and Installation of IPDM E/R"](#) .
 NG >> Repair harness or connector.



Front Fog Lamp Does Not Illuminate (One Side)

EKS00P4A

1. CHECK BULB

Check bulb of front fog lamp which does not illuminate.

OK or NG

- OK >> GO TO 2.
 NG >> Replace front fog lamp bulb.

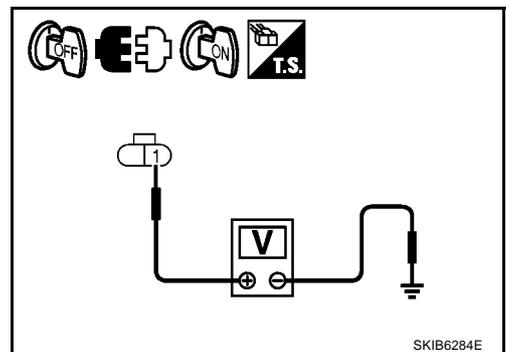
2. CHECK FOG LAMP INPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect front fog lamp RH or LH connector.
3. Turn ignition switch ON.
4. Front fog lamp switch is turned ON position.
5. Check voltage between front fog lamp (RH or LH) harness connector and ground.

Terminal			(-)	Voltage
(+) Front fog lamp connector		Terminal		
RH	E40	1	Ground	Battery voltage
LH	E56	1		

OK or NG

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



FRONT FOG LAMP

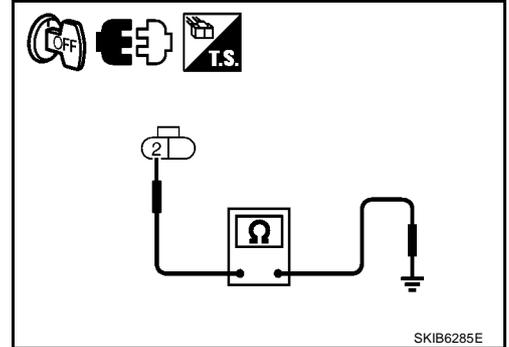
3. CHECK FRONT FOG LAMP GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between front fog lamp (RH or LH) harness connector and ground.

Front fog lamp connector		Terminal	Ground	Continuity
RH	E40	2		Yes
LH	E56	2		

OK or NG

- OK >> Check connector for connection, bend and loose fit.
 NG >> Repair harness or connector.



4. CHECK FOG LAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector (A) and front fog lamp (RH or LH) harness connector (B).

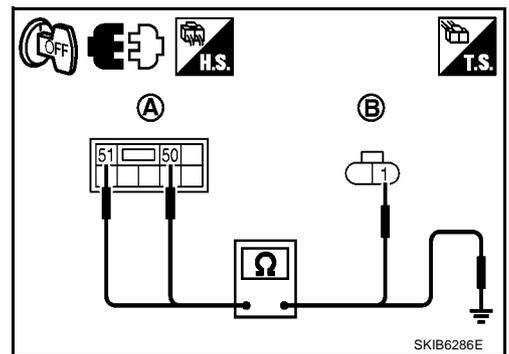
Circuit	A		B		Continuity
	Connector	Terminal	Connector	Terminal	
RH	E16	51	E40	1	Yes
LH		50	E56	1	

4. Check harness continuity between IPDM E/R harness connector (A) and ground.

A			Ground	Continuity
Connector		Terminal		No
RH	E16	51		
LH		50		

OK or NG

- OK >> Replace IPDM E/R. Refer to [PG-26, "Removal and Installation of IPDM E/R"](#) .
 NG >> Repair harness or connector.



Front Fog Lamp Indicator Lamp Does Not Illuminate

EKS00P4B

1. CHECK CAN COMMUNICATION

1. Select "BCM" on CONSULT-II. Select "BCM" on "SELECT TEST ITEM" screen.
2. Select "SELF-DIAG RESULTS" on "SELECT DIAG MODE" screen.

Display of self-diagnostic results

- NO DTC>> Replace combination meter. Refer to [DI-27, "Removal and Installation of Combination Meter"](#) .
 CAN COMM CIRCUIT>> Refer to [BCS-16, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#) .

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FRONT FOG LAMP

EKS00P4C

Front Fog Lamps Do Not Turn OFF

1. CHECK FRONT FOG LAMP TURN OFF

Make sure that lighting switch is OFF. And make sure front fog lamp turns off when ignition switch is turned OFF.

OK or NG

OK >> GO TO 3.

NG >> GO TO 2.

2. CHECK COMBINATION SWITCH INPUT SIGNAL

1. Select "BCM" on CONSULT-II.
2. Select "HEAD LAMP" on "SELECT TEST ITEM" screen. Then select "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Make sure "FR FOG SW" turns ON-OFF linked with operation of front fog lamp switch.

When front fog lamp switch : FR FOG SW OFF is OFF position

With "HEAD LAMP" data monitor,

OK or NG

OK >> Replace IPDM E/R. Refer to [PG-26, "Removal and Installation of IPDM E/R"](#).

NG >> Check combination switch (lighting switch). Refer to [LT-118, "Combination Switch Inspection"](#).

3. CHECK 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-26, "Removal and Installation of IPDM E/R"](#).

CAN COMM CIRCUIT>> Refer to [BCS-16, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#).

DATA MONITOR			
MONITOR			
FR FOG SW	OFF		
		RECORD	
MODE	BACK	LIGHT	COPY

PKIB9378E

SELF-DIAG RESULTS			
DTC RESULTS		TIME	
CAN COMM CIRCUIT [U1000]			
ERASE		PRINT	
MODE	BACK	LIGHT	COPY

PKIA7627E

FRONT FOG LAMP

Aiming Adjustment

EKS00P4D

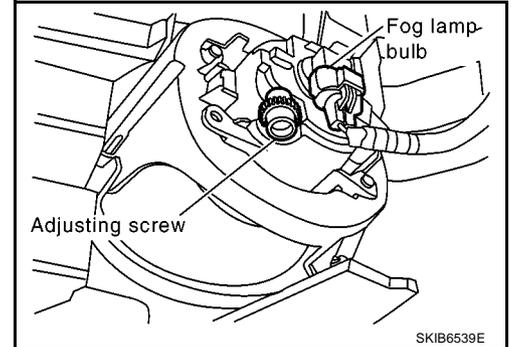
The fog lamp is a semi-sealed beam type which uses a replaceable halogen bulb. Before performing aiming adjustment, make sure of the following.

- Keep all tires inflated to correct pressure.
- Place vehicle on level surface.
- 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's seat.

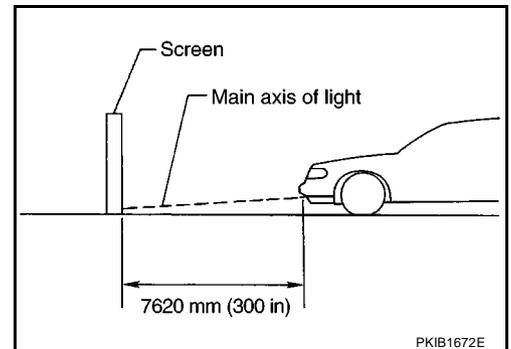
Adjust aiming in the vertical direction by turning the adjustment screw.

NOTE:

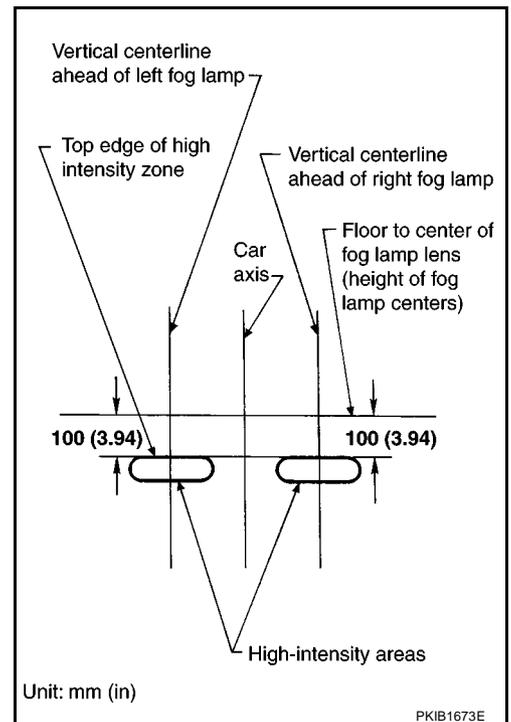
Use a Phillips screwdriver to adjust. Turn screw clockwise to raise pattern and counterclockwise to lower pattern.



1. Set the distance between the screen and the center of the fog lamp lens as shown.
2. Turn front fog lamps ON.
3. Remove front portion of fender protector(s) for adjusting screw access. Refer to [EI-22, "Removal and Installation of Front Fender Protector"](#).



4. 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.



FRONT FOG LAMP

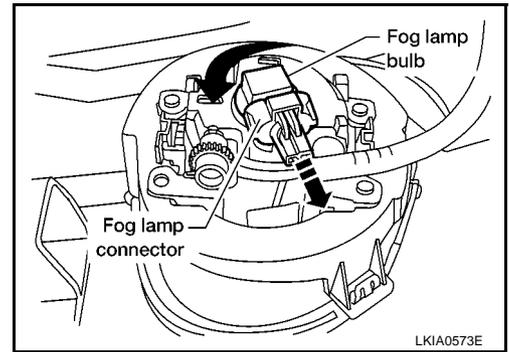
Bulb Replacement

1. Disconnect front fog lamp connector.
2. Turn the bulb socket counterclockwise to remove it.

Front fog lamp : 12V - 55W (H11)

CAUTION:

- Never touch the glass of bulb directly by hand. Keep grease and other oily substances away from it. Do not touch bulb by hand while it is lit or right after being turned off. Burning may result.
- Never 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.

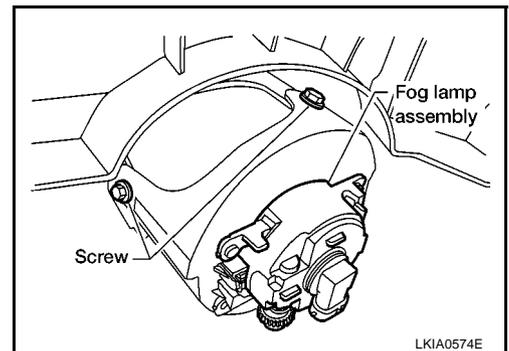


Removal and Installation of Front Fog Lamp REMOVAL

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

CAUTION:

- Never 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. Remove front portion of fender protector. Refer to [EI-22, "Removal and Installation of Front Fender Protector"](#).
 2. Disconnect front fog lamp connector.
 3. Remove front fog lamp screws and pull fog lamp rearward out of front bumper.



INSTALLATION

Installation is the reverse order of removal.

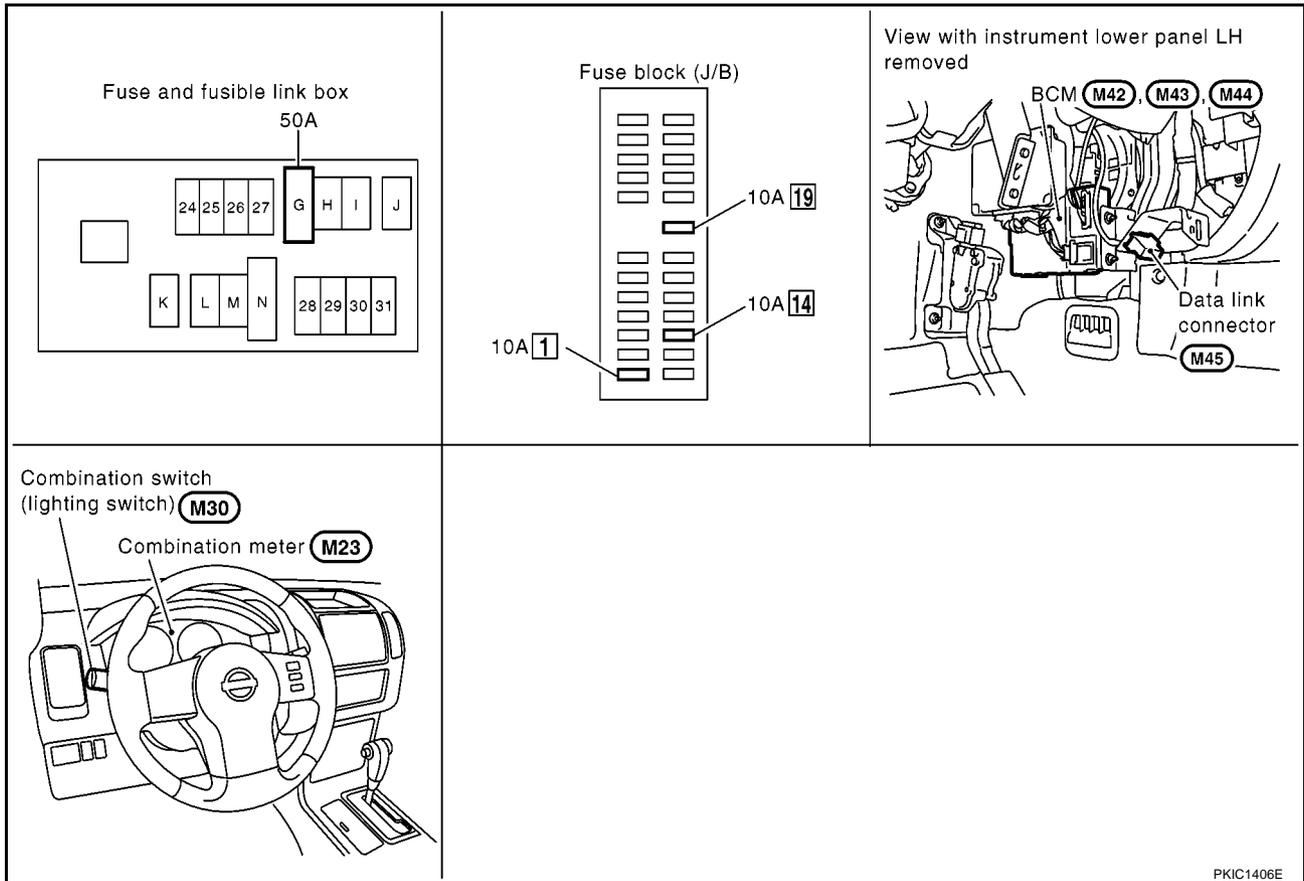
REAR FOG LAMP

REAR FOG LAMP

PFP:26550

Component Parts and Harness Connector Location

EKS00P4G



System Description

EKS00P4H

The control of the rear fog lamps is dependent upon the position of the lighting switch. The lighting switch must be in the 1ST position, 2ND position or AUTO position (LOW beam is ON) for rear fog lamp operation. When the lighting switch is placed in the rear fog lamp position the BCM (body control module) receives input signal requesting the rear fog lamps to illuminate.

OUTLINE

Power is also supplied at all times

- through 50A fusible link (letter G, located in fuse and fusible link box)
- to BCM terminal 57,
- through 10A fuse [No. 19, located in fuse block (J/B)]
- to combination meter terminal 3.

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

- through 10A fuse [No. 1, located in fuse block (J/B)]
- to BCM terminal 3,
- through 10A fuse [No. 14, located in fuse block (J/B)]
- to combination meter terminal 16.

Ground is supplied

- to BCM terminal 55 and
- to combination meter terminal 23
- through grounds M21, M80 and M83.

REAR FOG LAMP

REAR FOG LAMP OPERATION

The lighting switch must be in the 1ST position, 2ND position or AUTO position (LOW beam is ON) for rear fog lamp operation.

With the rear fog lamp switch in the ON position, the BCM directs power

- through BCM terminal 49
- to rear combination lamp LH terminal 6 (LHD models)
- to rear combination lamp RH terminal 6 (RHD models).

Ground is supplied

- to rear combination lamp RH and LH terminals 3
- through grounds E21, E41 and E61.

With power and ground supplied, the rear fog lamps illuminate.

COMBINATION SWITCH READING FUNCTION

Refer to [BCS-3, "COMBINATION SWITCH READING FUNCTION"](#) .

CAN Communication System Description

EKS00P4I

Refer to [LAN-23, "CAN COMMUNICATION"](#) .

CAN Communication Unit

EKS00P4J

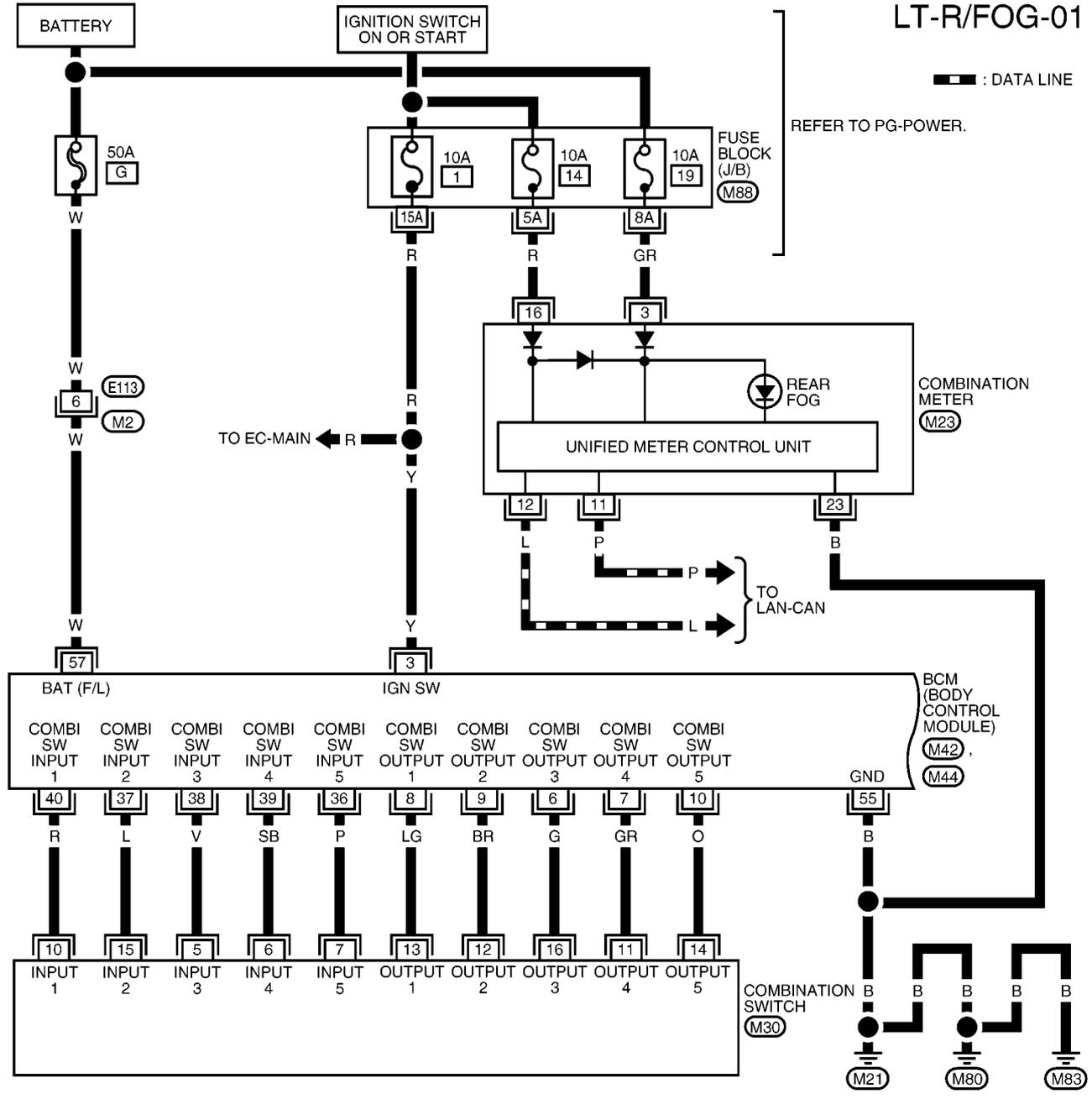
Refer to [LAN-30, "CAN Communication Unit"](#) .

REAR FOG LAMP

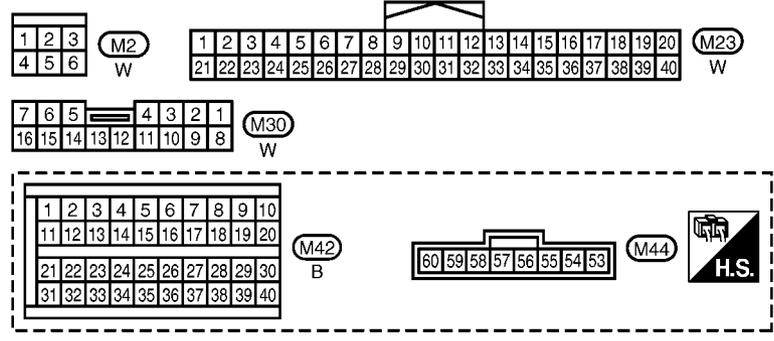
Wiring Diagram — R/FOG —

EKS00P4K

LT-R/FOG-01



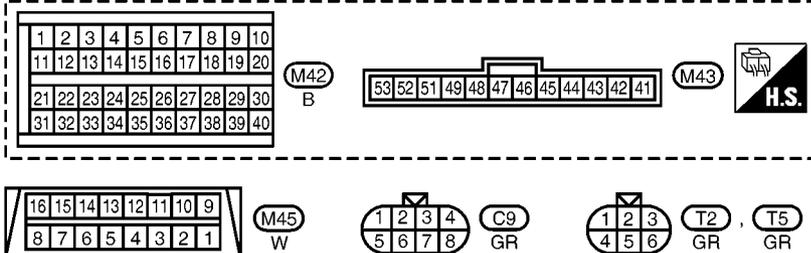
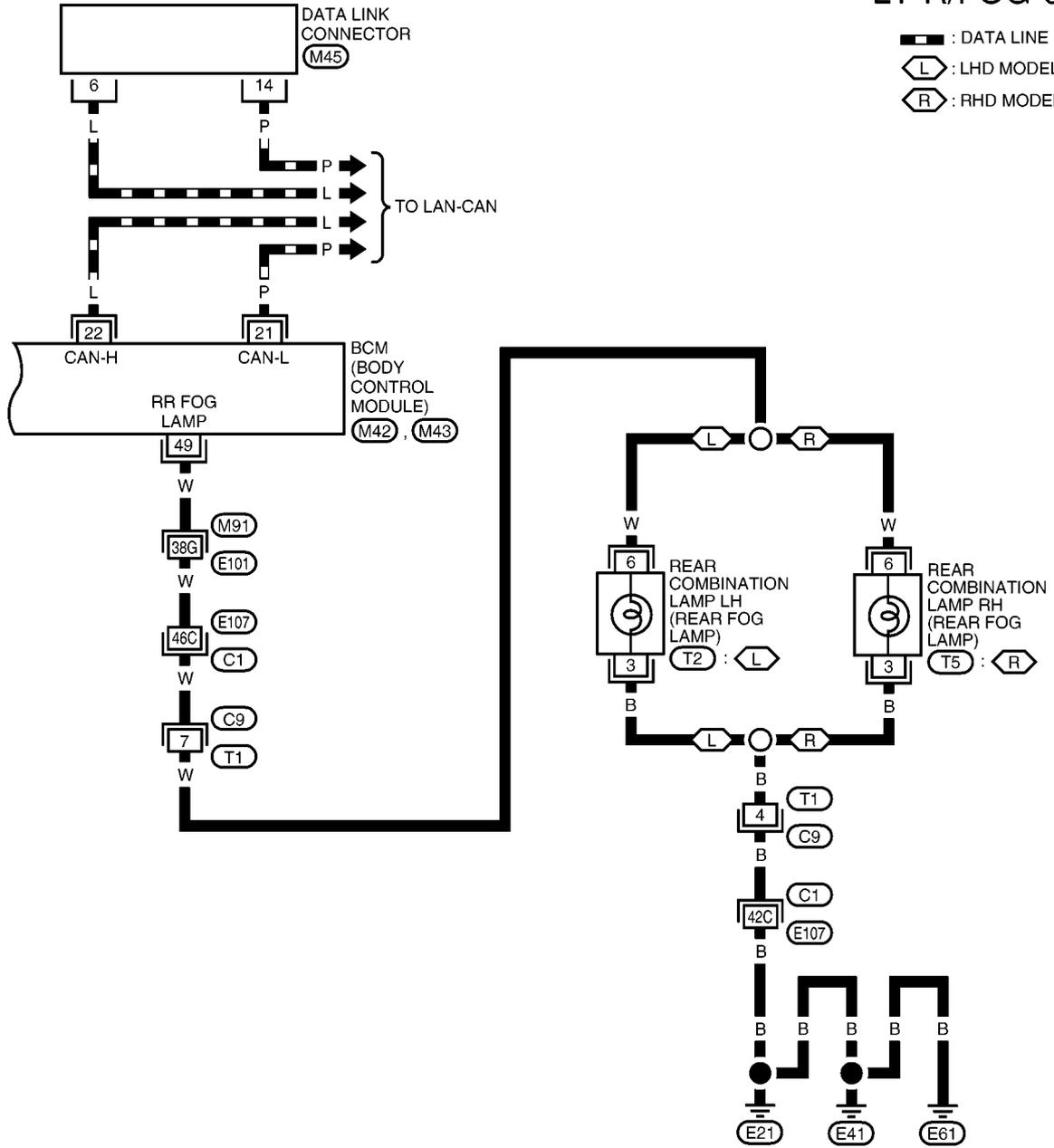
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REFER TO THE FOLLOWING.
 (M88) - FUSE BLOCK-JUNCTION BOX (J/B)

REAR FOG LAMP

LT-R/FOG-02



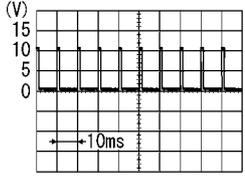
REFER TO THE FOLLOWING.

(C1), (M91) - SUPER MULTIPLE JUNCTION (SMJ)

REAR FOG LAMP

Terminals and Reference Values for BCM

EKS00P4L

Terminal No.	Wire color	Signal name	Measuring condition		Reference value	
			Ignition switch	Operation or condition		
3	Y	Ignition switch (ON)	ON	—	Battery voltage	
6	G	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p>PKIB4958J</p>	
7	GR	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4		
8	LG	Combination switch output 1	ON	Lighting, turn, wiper OFF Wiper dial position 4		
9	BR	Combination switch output 2	ON	Lighting, turn, wiper OFF Wiper dial position 4		
10	O	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4		
21	P	CAN- L	—	—		—
22	L	CAN- H	—	—	—	
36	P	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	Approx. 0V	
37	L	Combination switch input 2	ON	Lighting, turn, wiper OFF Wiper dial position 4		
38	V	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4		
39	SB	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4		
40	R	Combination switch input 1	ON	Lighting, turn, wiper OFF Wiper dial position 4		
49	W	Rear fog lamp output	ON	Lighting switch (Rear fog lamp switch)	ON	Battery voltage
					OFF	Approx. 0V
55	B	Ground	ON	—	Approx. 0V	
57	W	Battery power supply (fusible link)	OFF	—	Battery voltage	

How to Proceed With Trouble Diagnosis

EKS00P4M

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-87, "System Description"](#) .
3. Perform the Preliminary Check. Refer to [LT-92, "Preliminary Check"](#) .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the rear fog lamp operate normally? If YES, GO TO 6. If NO, GO TO 4.
6. INSPECTION END

REAR FOG LAMP

EKS00P4N

Preliminary Check CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

Check for blown fuses.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	G
	Ignition switch ON or START position	1
Combination meter	Battery	19
	Ignition switch ON or START position	14

Refer to [LT-89, "Wiring Diagram — R/FOG —"](#) .

OK or NG

OK >> GO TO 2.

NO >> If fuse or fusible link is blown, be sure to eliminate cause of malfunction before installing new fuse or fusible link. Refer to [PG-4, "POWER SUPPLY ROUTING CIRCUIT"](#) .

2. CHECK POWER SUPPLY CIRCUIT

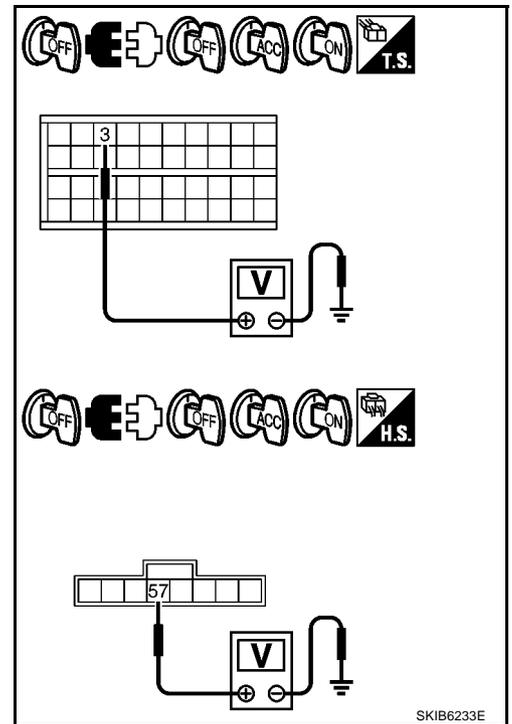
1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check voltage between BCM harness connector and ground.

Terminal		(-)	Ignition switch position		
(+)			OFF	ACC	ON
Connector	Terminal				
M42	3	Ground	0V	0V	Battery voltage
M44	57		Battery voltage	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.



3. CHECK GROUND CIRCUIT

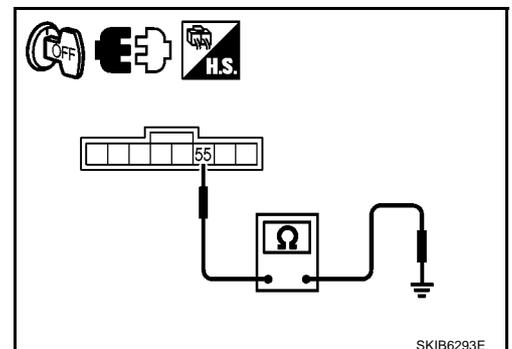
Check continuity between BCM harness connector and ground.

Connector	Terminal	Ground	Continuity
M44	55		Yes

OK or NG

OK >> INSPECTION END

NG >> Repair harness or connector.



REAR FOG LAMP

CONSULT-II Functions (BCM)

EKS00P40

Refer to [LT-15, "CONSULT-II Functions \(BCM\)"](#) .

Rear Fog Lamp Does Not Operate

EKS00P4P

1. CHECK BULB

Check bulb standard of rear fog lamp is correct.

OK or NG

- OK >> GO TO 2.
- NG >> Replace rear fog lamp bulb.

2. CHECK CIRCUITS BETWEEN COMBINATION SWITCH AND BCM (1)

☑ With CONSULT-II

1. Select "BCM" on CONSULT-II. Select "HEAD LAMP" on "SELECT TEST ITEM" screen.
2. Select "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Make sure "RR FOG SW" turns ON-OFF linked with operation of rear fog lamp switch.

When rear fog lamp switch is ON : RR FOG SW ON

☒ Without CONSULT-II

Refer to [LT-118, "Combination Switch Inspection"](#) .

OK or NG

- OK >> GO TO 3.
- NG >> Check rear fog lamp switch. Refer to [LT-118, "Combination Switch Inspection"](#) .

DATA MONITOR			
MONITOR			
RR FOG SW	ON		
RECORD			
MODE	BACK	LIGHT	COPY

PKIB7212E

3. CHECK CIRCUITS BETWEEN COMBINATION SWITCH AND BCM (2)

☑ With CONSULT-II

1. Select "BCM" on CONSULT-II. Select "HEAD LAMP" on "SELECT TEST ITEM" screen.
2. Select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Touch "RR FOG LAMP" screen.
4. Check rear fog lamp operation.

Rear fog lamp should operate.

☒ Without CONSULT-II

.GO TO 4.

OK or NG

- OK >> Replace BCM. Refer to [BCS-17, "Removal and Installation of BCM"](#) .
- NG >> GO TO 4.

ACTIVE TEST			
RR FOG LAMP	ON		
OFF			
MODE	BACK	LIGHT	COPY

PKIB7213E

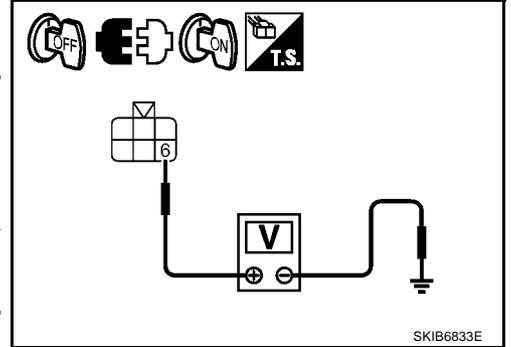
REAR FOG LAMP

4. CHECK CIRCUITS BETWEEN BCM AND REAR FOG LAMP(1)

④ With CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect rear combination lamp connector.
3. Select "BCM" on CONSULT-II. Select "HEAD LAMP" on "SELECT TEST ITEM" screen.
4. Select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
5. Touch "RR FOG LAMP" screen.
6. When rear fog lamp is operating, check voltage between rear combination lamp harness connector and ground.

Terminal				Voltage
(+)		Terminal	(-)	
Rear combination lamp connector				6
RHD models	T5			
LHD models	T2			



⊗ Without CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect rear fog lamp connector.
3. Turn ignition switch ON.
4. Set rear fog lamp switch in ON position.
5. Check voltage between rear combination lamp harness connector and ground.

Terminal				Voltage
(+)		Terminal	(-)	
Rear combination lamp connector				6
RHD models	T5			
LHD models	T2			

OK or NG

- OK >> GO TO 6
 NG >> GO TO 5

REAR FOG LAMP

5. CHECK CIRCUIT BETWEEN IPDM E/R AND REAR FOG LAMP (2)

1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check continuity between BCM harness connector (A) and rear combination lamp harness connector (B).

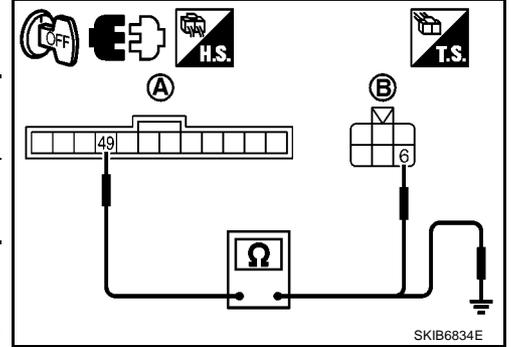
Circuit	A		B		Continuity
	Connector	Terminal	Connector	Terminal	
RHD models	M43	49	T5	6	Yes
LHD models			T2		

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

A		Ground	Continuity
Connector	Terminal		
M43	49		No

OK or NG

- OK >> Replace BCM. Refer to [BCS-17, "Removal and Installation of BCM"](#) . (Reconnect BCM harness connector and check the operation of turn signal. If it is abnormal, replace BCM.)
- NG >> Repair harness or connector.



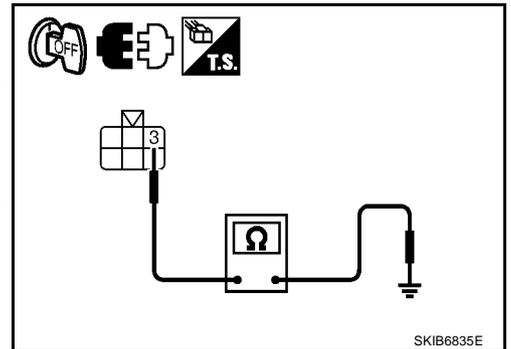
6. CHECK CIRCUIT BETWEEN REAR COMBINATION LAMP AND GROUND

1. Turn ignition switch OFF.
2. Check continuity between rear combination lamp harness connector and ground.

Rear combination lamp connector		Terminal	Ground	Continuity
RHD models	T5	3		Yes
LHD models	T2			

OK or NG

- OK >> Check connector for connection, bend and loose fit.
- NG >> Repair harness or connector.



Rear Fog Lamp Indicator Lamp Does Not Illuminate

1. CHECK CAN COMMUNICATION

1. Select "BCM" on CONSULT-II. Select "BCM" on "SELECT TEST ITEM" screen.
2. Select "SELF-DIAG RESULTS" on "SELECT DIAG MODE" screen.

Display of self-diagnostic results

- NO DTC>> Replace combination meter. Refer to [DI-27, "Removal and Installation of Combination Meter"](#) .
- CAN COMM CIRCUIT>> Refer to [BCS-16, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#) .

REAR FOG LAMP

Rear Fog Lamp Does Not Turn OFF

EKS00P4R

1. CHECK CIRCUIT BETWEEN COMBINATION SWITCH AND BCM

④ With CONSULT-II

1. Turn rear fog lamp switch OFF.
2. Select "BCM" on CONSULT-II. Select "HEADLAMP" on "SELECT TEST ITEM" screen.
3. Select "DATA MONITOR" on "SELECT DIAG MODE" screen and make sure "RR FOG SW" is OFF.

**When rear fog lamp switch is : RR FOG SW OFF
OFF**

DATA MONITOR	
MONITOR	
RR FOG SW	OFF
DOOR SW-DR	ON
DOOR SW-AS	OFF
DOOR SW-RR	OFF
DOOR SW-RL	OFF
BACK DOOR SW	OFF
TURN SIGNAL R	OFF
TURN SIGNAL L	OFF
OPTICAL SENSOR	0.71 V

PKIB0262E

⊗ Without CONSULT-II

Refer to [LT-118, "Combination Switch Inspection"](#) .

OK or NG

OK >> Replace BCM. Refer to [BCS-17, "Removal and Installation of BCM"](#) .

NG >> Inspect rear fog lamp switch. Refer to [LT-118, "Combination Switch Inspection"](#) .

Bulb Replacement

EKS00P4S

Refer to [LT-143, "Bulb Replacement"](#) .

Removal and Installation

EKS00P4T

Refer to [LT-144, "Removal and Installation"](#) .

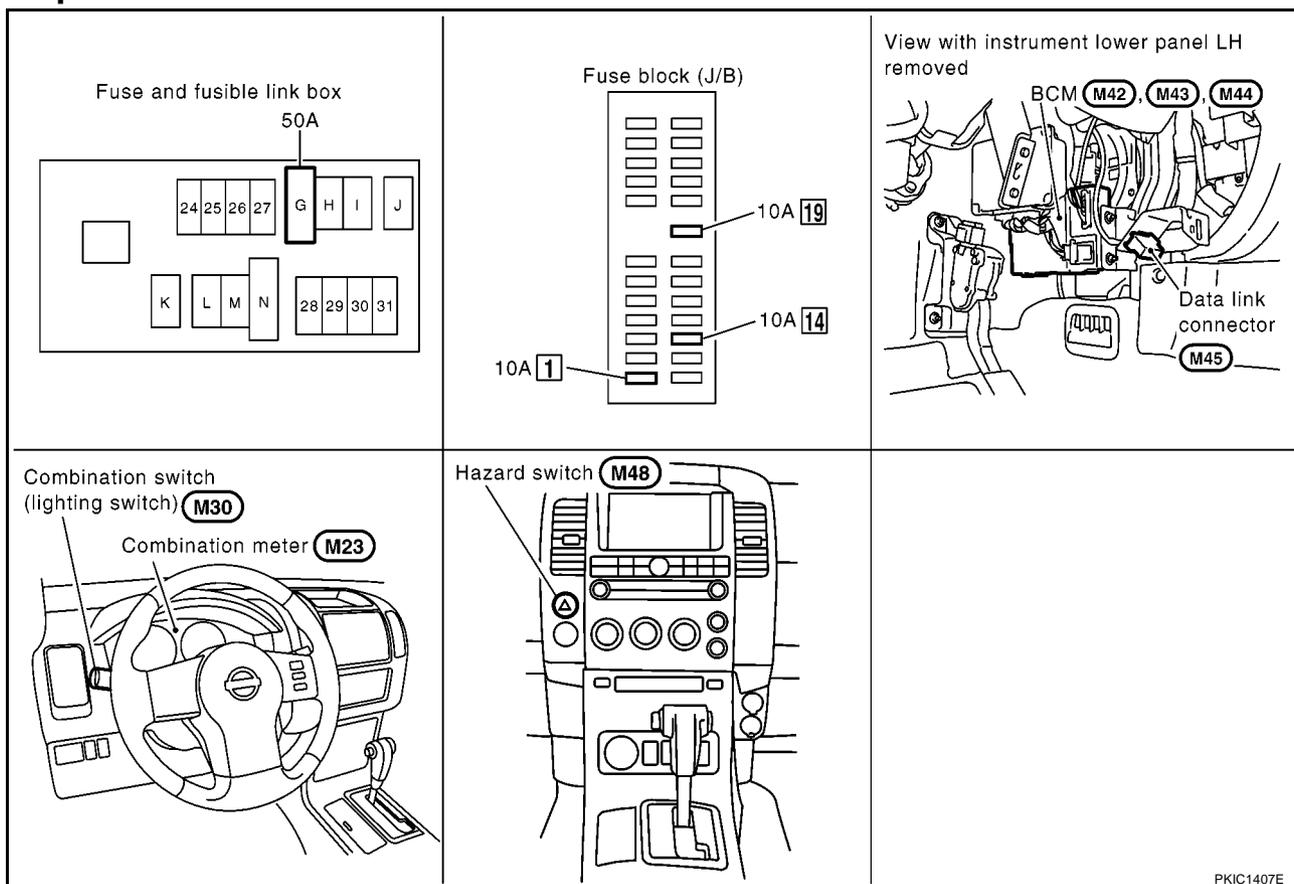
TURN SIGNAL AND HAZARD WARNING LAMPS

TURN SIGNAL AND HAZARD WARNING LAMPS

PFP:26120

Component Parts and Harness Connector Location

EKS00P85



PKIC1407E

System Description OUTLINE

EKS00P86

Power is supplied at all times

- through 50A fusible link (letter G, located in fuse and fusible link box)
- to BCM (body control module) terminal 57,
- through 10A fuse [No. 19, located in fuse block (J/B)]
- to combination meter terminal 3.

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

- through 10A fuse [No. 1, located in fuse block (J/B)]
- to BCM terminal 3,
- through 10A fuse [No. 14, located in fuse block (J/B)]
- to combination meter terminal 16.

Ground is supplied

- to BCM terminal 55 and
- to combination meter terminal 23
- through grounds M21, M80 and M83.

TURN SIGNAL OPERATION

LH Turn

When the turn signal switch is moved to the left position, BCM receives input signal requesting left turn signals to flash.

BCM then supplies power

- through BCM terminal 47
- to front combination lamp LH terminal 1

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TURN SIGNAL AND HAZARD WARNING LAMPS

- to side turn signal lamp LH terminal 1 and
- to rear combination lamp LH terminal 2.

Ground is supplied

- to front combination lamp LH terminal 2
- to side turn signal lamp LH terminal 2 and
- to rear combination lamp LH terminal 3
- through ground E21, E41 and E61.

The BCM also supplies input to combination meter terminals 11 and 12 through the CAN communication. This input is processed by unified meter control unit in combination meter, which in turn supplies ground to the left turn signal indicator lamp.

With power and input supplied, BCM controls flashing of LH turn signal lamps.

RH Turn

When the turn signal switch is moved to the right position, BCM receives input signal requesting right turn signals to flash.

BCM then supplies power

- through BCM terminal 48
- to front combination lamp RH terminal 1
- to side turn signal lamp RH terminal 1 and
- to rear combination lamp RH terminal 2.

Ground is supplied

- to front combination lamp RH terminal 2
- to side turn signal lamp RH terminal 2 and
- to rear combination lamp RH terminal 3
- through ground E21, E41 and E61.

The BCM also supplies input to combination meter terminals 11 and 12 through the CAN communication. This input is processed by unified meter control unit in combination meter, which in turn supplies ground to the right turn signal indicator lamp.

With power and input supplied, BCM controls flashing of RH turn signal lamps.

HAZARD LAMP OPERATION

Power is supplied at all times

- through 50A fusible link (letter G, located in fuse and fusible link box)
- to BCM terminal 57,
- through 10A fuse [No. 19, located in fuse block (J/B)]
- to combination meter terminal 3.

Ground is supplied

- to BCM terminal 55 and
- to combination meter terminal 23
- through grounds M21, M80 and M83.

When the hazard switch is depressed, ground is supplied

- to BCM terminal 33
- through hazard switch terminal 2
- through hazard switch terminal 1
- through grounds M21, M80 and M83.

When the hazard switch is depressed, BCM receives input signal requesting turn signals to flash.

BCM then supplies power

- through BCM terminal 47
- to front combination lamp LH terminal 1
- to side turn signal lamp LH terminal 1 and
- to rear combination lamp LH terminal 2,
- through BCM terminal 48

TURN SIGNAL AND HAZARD WARNING LAMPS

- to front combination lamp RH terminal 1
- to side turn signal lamp RH terminal 1 and
- to rear combination lamp RH terminal 2.

Ground is supplied

- to front combination lamp RH and LH terminals 2
- to side turn signal lamp RH and LH terminals 2 and
- to rear combination lamp RH and LH terminals 3
- through ground E21, E41 and E61.

The BCM also supplies input to combination meter terminals 11 and 12 through the CAN communication. This input is processed by unified meter control unit in combination meter, which in turn supplies ground to the left and right turn signal indicator lamps.

With power and input supplied, BCM controls flashing of hazard warning lamps.

REMOTE KEYLESS ENTRY SYSTEM OPERATION

Refer to [BL-89, "MULTI-REMOTE CONTROL SYSTEM"](#) .

COMBINATION SWITCH READING FUNCTION

Refer to [BCS-3, "COMBINATION SWITCH READING FUNCTION"](#) .

CAN Communication System Description

Refer to [LAN-23, "CAN COMMUNICATION"](#) .

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EKS00P87

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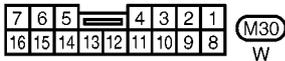
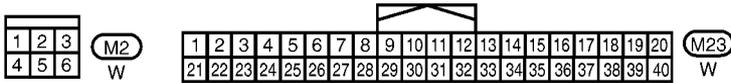
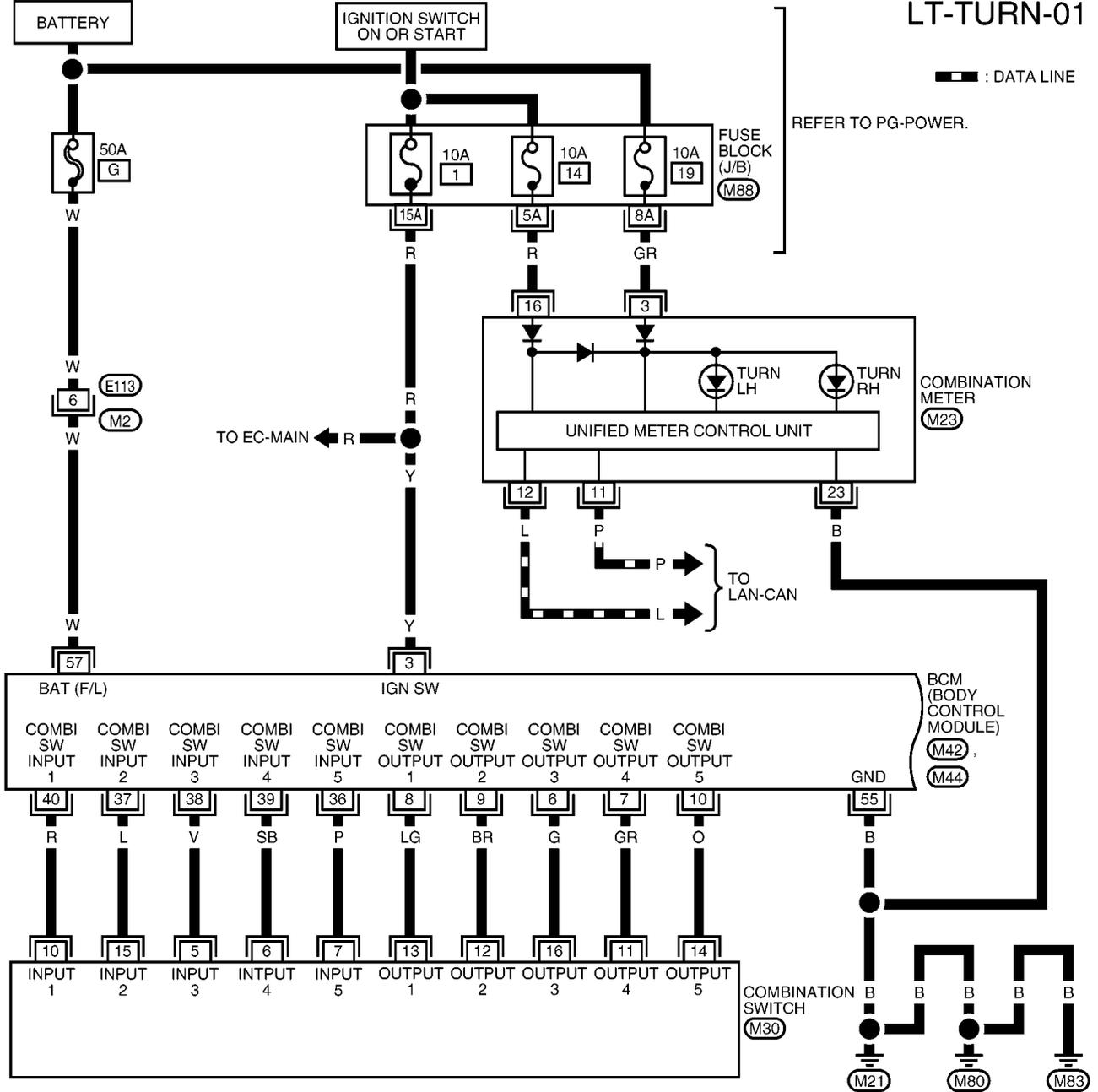
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TURN SIGNAL AND HAZARD WARNING LAMPS

EKS00P88

Wiring Diagram — TURN —

LT-TURN-01



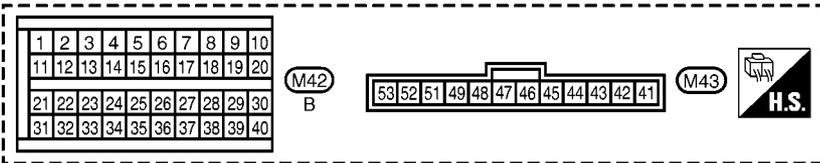
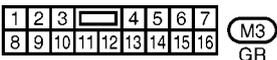
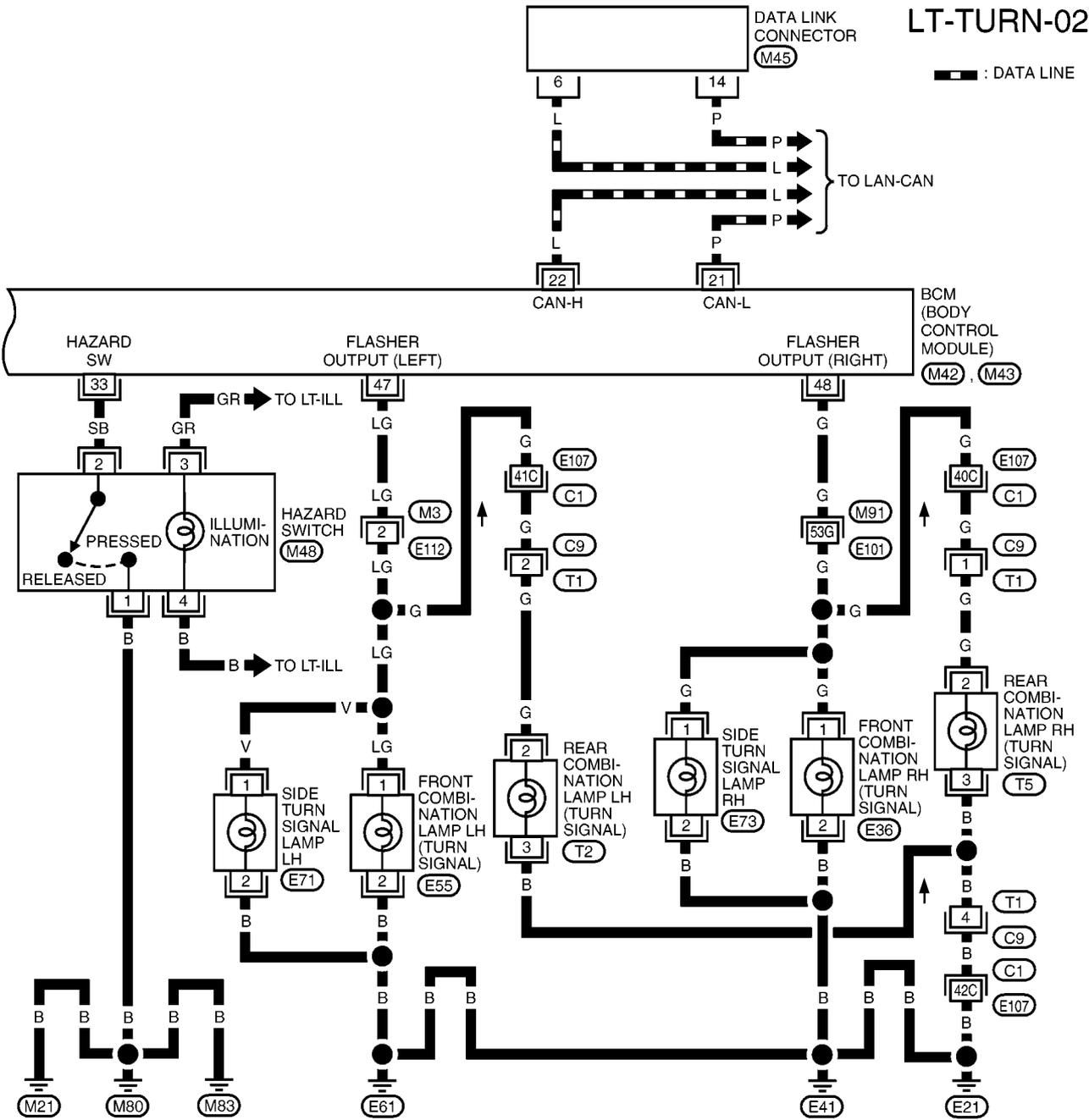
REFER TO THE FOLLOWING.

(M88) - FUSE BLOCK-
JUNCTION BOX (J/B)

MKWA3574E

TURN SIGNAL AND HAZARD WARNING LAMPS

LT-TURN-02



REFER TO THE FOLLOWING.
(C1), (M91) -SUPER MULTIPLE JUNCTION (SMJ)



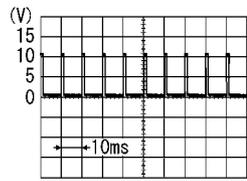
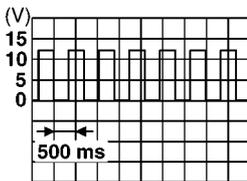
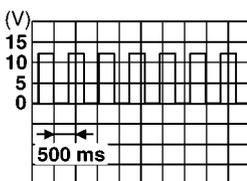
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TURN SIGNAL AND HAZARD WARNING LAMPS

Terminals and Reference Values for BCM

EKS00P89

Terminal No.	Wire color	Signal name	Measuring condition		Reference value	
			Ignition switch	Operation or condition		
3	Y	Ignition switch (ON)	ON	—	Battery voltage	
6	G	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right; font-size: small;">PKIB4958J</p>	
7	GR	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4		
8	LG	Combination switch output 1	ON	Lighting, turn, wiper OFF Wiper dial position 4		
9	BR	Combination switch output 2	ON	Lighting, turn, wiper OFF Wiper dial position 4		
10	O	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4		
21	P	CAN- L	—	—		—
22	L	CAN- H	—	—	—	
33	SB	Hazard switch signal	OFF	Hazard switch	ON	Approx. 0V
					OFF	Approx. 5V
36	P	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	Approx. 0V	
37	L	Combination switch input 2	ON	Lighting, turn, wiper OFF Wiper dial position 4		
38	V	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4		
39	SB	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4		
40	R	Combination switch input 1	ON	Lighting, turn, wiper OFF Wiper dial position 4		
47	LG	Turn signal (left)	ON	Combination switch	Turn left ON	 <p style="text-align: right; font-size: small;">SKIA3009J</p>
48	G	Turn signal (right)	ON	Combination switch	Turn right ON	 <p style="text-align: right; font-size: small;">SKIA3009J</p>
55	B	Ground	ON	—	Approx. 0V	
57	W	Battery power supply (fusible link)	OFF	—	Battery voltage	

TURN SIGNAL AND HAZARD WARNING LAMPS

EKS00P8A

How to Proceed With Trouble Diagnosis

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-97, "System Description"](#) .
3. Perform preliminary check. Refer to [LT-103, "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

EKS00P8B

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES OR FUSIBLE LINK

Check for blown fuses or fusible link.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	G
	Ignition switch ON or START position	1
Combination meter	Battery	19
	Ignition switch ON or START position	14

Refer to [LT-100, "Wiring Diagram — TURN —"](#) .

OK or NG

OK >> GO TO 2.

NG >> If fuse or fusible link is blown, be sure to eliminate cause of malfunction before installing new fuse or fusible link. Refer to [PG-4, "POWER SUPPLY ROUTING CIRCUIT"](#) .

2. CHECK POWER SUPPLY CIRCUIT

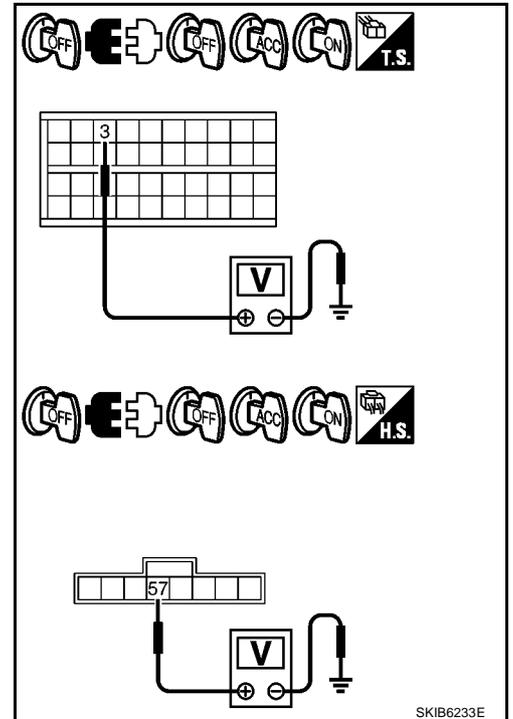
1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check voltage between BCM harness connector and ground.

Terminal (+)		Terminal (-)	Ignition switch position		
BCM connector	Terminal		OFF	ACC	ON
M42	3	Ground	0V	0V	Battery voltage
M44	57		Battery voltage	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3

NG >> Repair harness or connector.



SKIB6233E

TURN SIGNAL AND HAZARD WARNING LAMPS

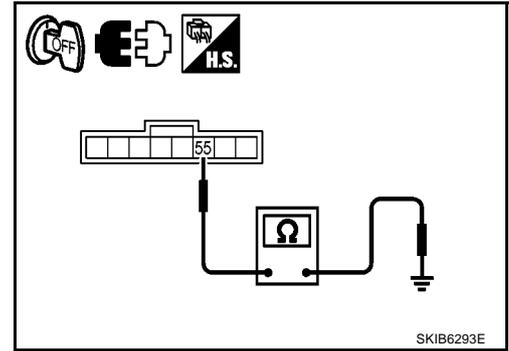
3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

BCM connector	Terminal	Ground	Continuity
M44	55		Yes

OK or NG

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



TURN SIGNAL AND HAZARD WARNING LAMPS

CONSULT-II Function (BCM)

EKS00P8C

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

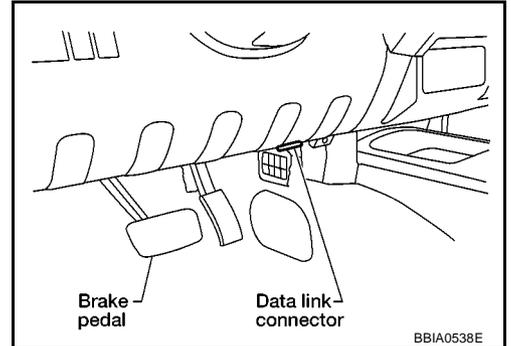
BCM diagnostic part	Diagnostic mode	Description
FLASHER	DATA MONITOR	Displays BCM input/output data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.

CONSULT-II OPERATION

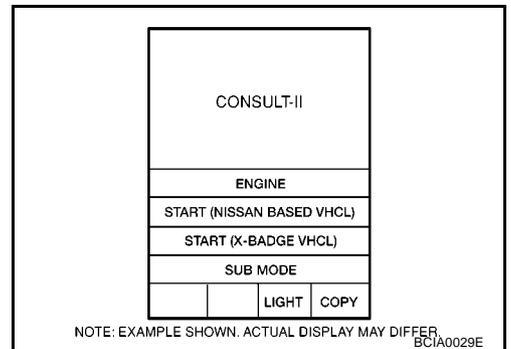
CAUTION:

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.

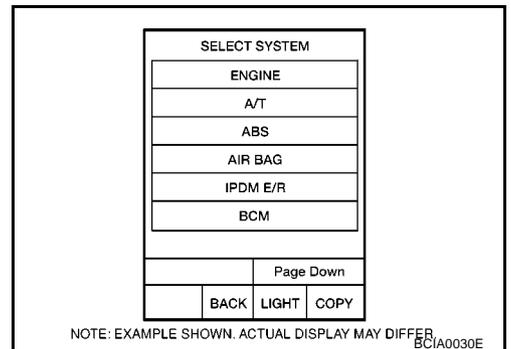
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, and then turn ignition switch ON.



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

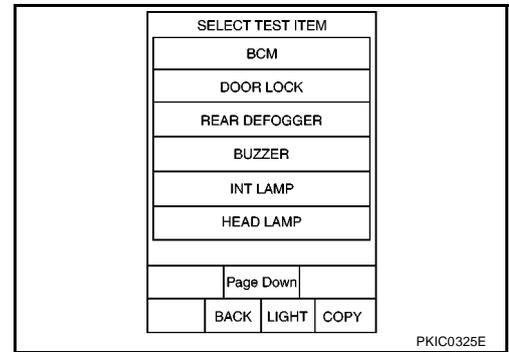


3. Touch "BCM" on "SELECT SYSTEM" screen. If "BCM" is not indicated, refer to [GI-50, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



TURN SIGNAL AND HAZARD WARNING LAMPS

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 "SELECT MONITOR ITEM" screen.

ALL SIGNALS	Monitors all the signals.
SELECTION FROM MENU	Selects items and monitors them.

4. When "SELECTION FROM MENU" is selected, touch items to be monitored. When "ALL SIGNALS" is selected, all the items will be monitored.
5. Touch "START".
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 status (ignition switch IGN position: ON/other: OFF) of ignition switch judged from the ignition switch signal.
HAZARD SW "ON/OFF"	Displays status (hazard switch ON position: ON/other: OFF) of hazard switch judged from the hazard switch signal.
TURN SIGNAL R "ON/OFF"	Displays status (turn signal switch right position: ON/other: OFF) of turn RH switch judged from the turn signal switch signal.
TURN SIGNAL L "ON/OFF"	Displays status (turn signal switch left position: ON/other: OFF) of turn LH switch judged from the turn signal switch signal.
BRAKE SW "ON/OFF"	Displays status of stop lamp 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 "OFF" deactivates the operation.

Display Item List

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

TURN SIGNAL AND HAZARD WARNING LAMPS

EKS00P8D

Turn Signal Lamp Does Not Operate

1. CHECK BULB

Check bulb standard of each turn signal lamp is correct.

OK or NG

- OK >> GO TO 2.
- NG >> Replace turn signal lamp bulb.

2. CHECK COMBINATION SWITCH INPUT SIGNAL

☑ With CONSULT-II

1. Select "BCM" on CONSULT-II. Select "FLASHER" on "SELECT TEST ITEM" screen.
2. Select "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Make sure "TURN SIGNAL R" and "TURN SIGNAL L" turns ON-OFF linked with operation of lighting switch.

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

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

DATA MONITOR			
MONITOR			
TURN SIGNAL R	ON		
TURN SIGNAL L	ON		
RECORD			
MODE	BACK	LIGHT	COPY

PKIA7600E

☒ Without CONSULT-II

Refer to [LT-118, "Combination Switch Inspection"](#).

OK or NG

- OK >> GO TO 3.
- NG >> Check combination switch (lighting switch). Refer to [LT-118, "Combination Switch Inspection"](#).

3. ACTIVE TEST

☑ With CONSULT-II

1. Select "BCM" on CONSULT-II. Select "FLASHER" on "SELECT TEST ITEM" screen.
2. Select "ACTIVE TEST" on "SELECT DIAG MODE" screen. Select "FLASHER" on "SELECT TEST ITEM" screen.
3. Make sure operation of turn signal lamps.

Turn signal lamp should operate.

☒ Without CONSULT-II

GO TO 4.

OK or NG

- OK >> Replace BCM. Refer to [BCS-17, "Removal and Installation of BCM"](#).
- NG >> GO TO 4.

ACTIVE TEST			
FLASHER	OFF		
RH			
LH			
MODE			
MODE	BACK	LIGHT	COPY

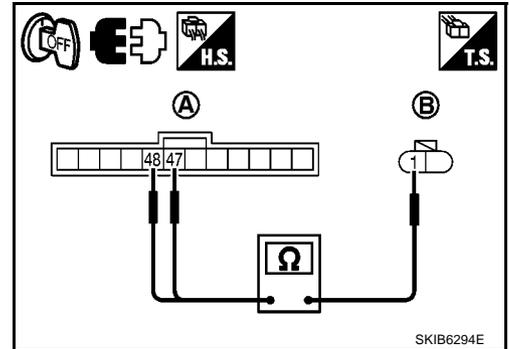
SKIA6190E

TURN SIGNAL AND HAZARD WARNING LAMPS

4. CHECK TURN SIGNAL LAMP CIRCUIT

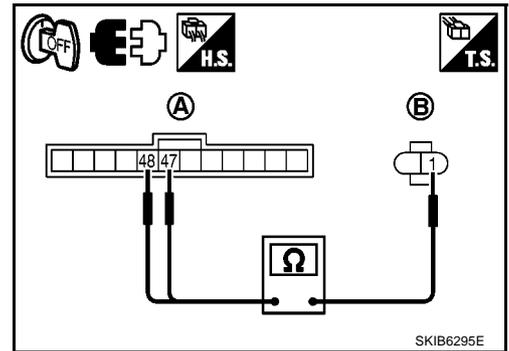
1. Turn ignition switch OFF.
2. Disconnect BCM connector, front combination lamp (RH and LH) connector, side turn signal lamp (RH and LH) connector and rear combination lamp (RH and LH) connector.
3. Check continuity between BCM harness connector (A) and front combination lamp (RH and LH) harness connector (B).

Circuit	A		B		Continuity
	Connector	Terminal	Connector	Terminal	
RH	M43	48	E36	1	Yes
LH		47			



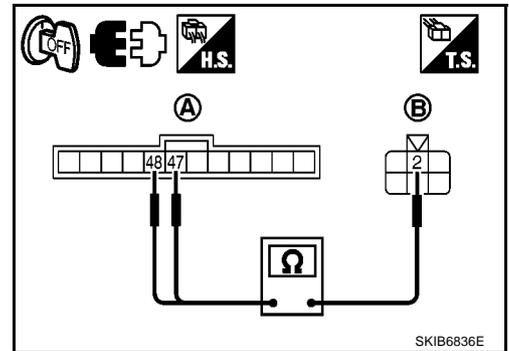
4. Check continuity between BCM harness connector (A) and side turn signal lamp (RH and LH) harness connector (B).

Circuit	A		B		Continuity
	Connector	Terminal	Connector	Terminal	
RH	M43	48	E73	1	Yes
LH		47			



5. Check continuity between BCM harness connector (A) and rear combination lamp (RH and LH) harness connector (B).

Circuit	A		B		Continuity
	Connector	Terminal	Connector	Terminal	
RH	M43	48	T5	2	Yes
LH		47			



OK or NG

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

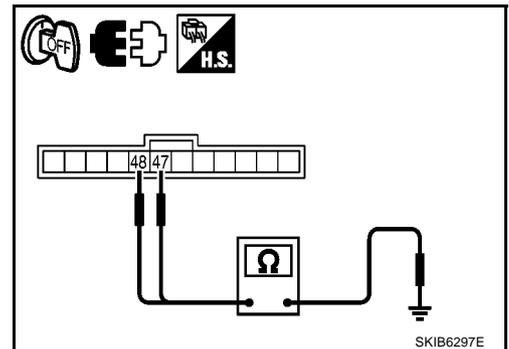
5. CHECK SIGNAL LAMP CIRCUIT (SHORT CIRCUIT)

Check continuity between BCM harness connector and ground.

BCM connector		Terminal	Ground	Continuity
RH	M43	48		No
LH		47	No	

OK or NG

- OK >> Replace BCM if turn signal lamp does not work after setting the connector again. Refer to [BCS-17, "Removal and Installation of BCM"](#).
- NG >> Repair harness or connector.



TURN SIGNAL AND HAZARD WARNING LAMPS

Hazard Warning Lamp Does Not Operate But Turn Signal Lamps Operate

EKS00P8E

1. CHECK BULB

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

OK or NG

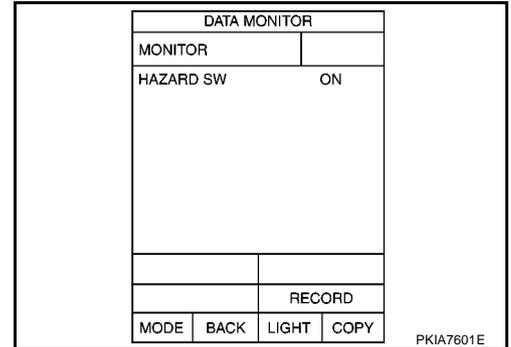
- OK >> GO TO 2.
- NG >> Replace turn signal lamp bulb.

2. CHECK HAZARD SWITCH INPUT SIGNAL

With CONSULT-II

1. Select "BCM" on CONSULT-II. Select "FLASHER" on "SELECT TEST ITEM" screen.
2. Select "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Make sure "HAZARD SW" turns ON-OFF linked with operation of multifunction switch (hazard switch).

When hazard switch is in : HAZARD SW ON
ON position



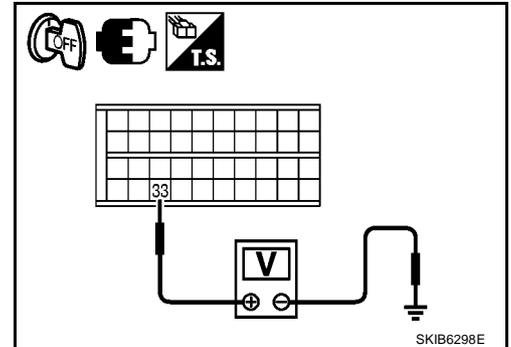
Without CONSULT-II

Check voltage between BCM harness connector and ground.

Terminal (+)		Terminal (-)	Condition	Voltage
Connector	Terminal			
M42	33	Ground	Hazard switch is ON	Approx. 0V
			Hazard switch is OFF	Approx. 5V

OK or NG

- OK >> Replace BCM. Refer to [BCS-17, "Removal and Installation of BCM"](#).
- NG >> GO TO 3.



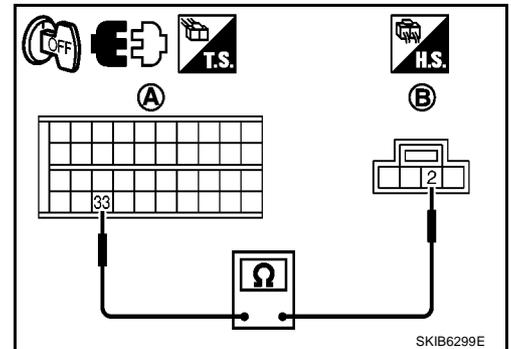
3. CHECK HAZARD SWITCH CIRCUIT

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

A		B		Continuity
Connector	Terminal	Connector	Terminal	
M42	33	M48	2	Yes

OK or NG

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



TURN SIGNAL AND HAZARD WARNING LAMPS

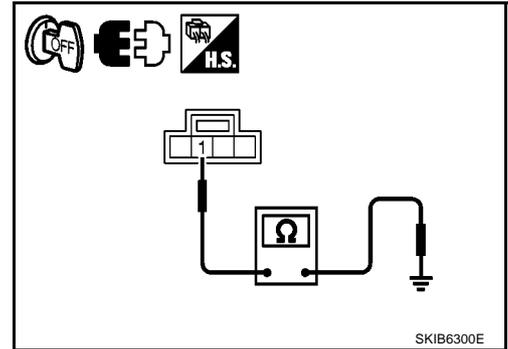
4. CHECK GROUND CIRCUIT

Check continuity between hazard switch harness connector and ground.

Hazard switch connector	Terminal	Ground	Continuity
M48	1		Yes

OK or NG

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



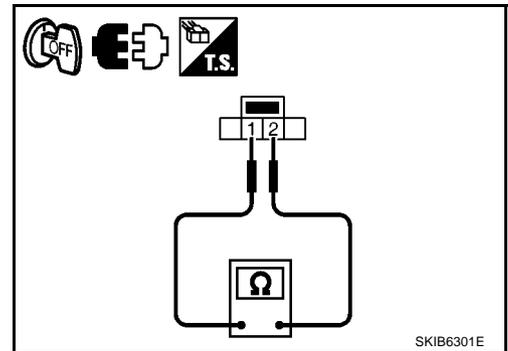
5. CHECK HAZARD SWITCH

Check continuity of hazard switch.

Hazard switch		Condition	Continuity
Terminal			
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-17, "Removal and Installation of BCM"](#) .
- NG >> Replace hazard switch. Refer to [LT-113, "Removal and Installation"](#) .



Turn Signal Indicator Lamp Does Not Operate

EKS00P8F

1. CHECK CAN COMMUNICATION

1. Select "BCM" on CONSULT-II. Select "BCM" on "SELECT TEST ITEM" screen.
2. Select "SELF-DIAG RESULTS" on "SELECT DIAG MODE" screen.

Display of self-diagnostic results

- NO DTC>> Replace combination meter. Refer to [DI-27, "Removal and Installation of Combination Meter"](#) .
- CAN COMM CIRCUIT>> Refer to [BCS-16, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#) .

TURN SIGNAL AND HAZARD WARNING LAMPS

Bulb Replacement (Front Turn Signal Lamp)

EKS00P8G

Refer to [LT-29, "Bulb Replacement"](#) .

Bulb Replacement (Rear Turn Signal Lamp)

EKS00P8H

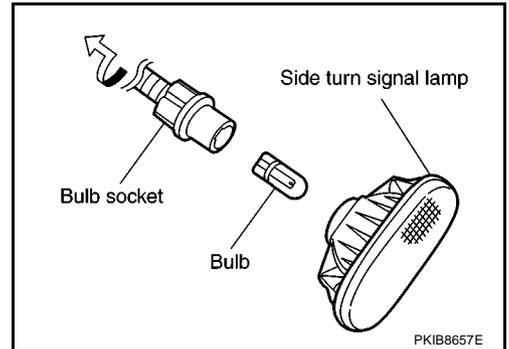
Refer to [LT-143, "Bulb Replacement"](#) .

Bulb Replacement (Side Turn Signal Lamp)

EKS00P8I

1. Remove side turn signal lamp. Refer to [LT-111, "Removal and Installation of Side Turn Signal Lamp"](#) .
2. Turn bulb socket counterclockwise and unlock it.
3. Remove the bulb from the socket.

Side turn signal lamp : 12V 5W



Removal and Installation of Front Turn Signal Lamp

EKS00P8J

Refer to [LT-30, "Removal and Installation"](#) .

Removal and Installation of Rear Turn Signal Lamp

EKS00P8K

Refer to [LT-144, "Removal and Installation"](#) .

Removal and Installation of Side Turn Signal Lamp REMOVAL

EKS00P8L

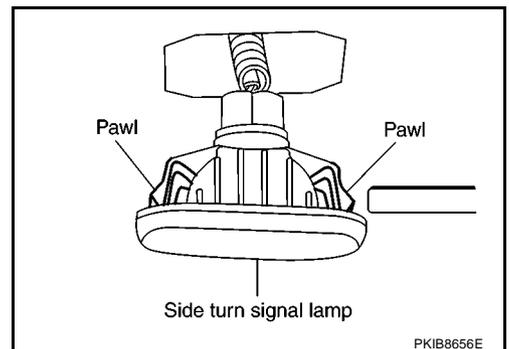
1. Insert a spatula or the similar tool under the side turn signal lamp. While pushing the pawl of the lamp, pull off the lamp from the vehicle.
2. Disconnect side turn signal lamp.

NOTE:

Support side turn signal lamp harness with tape so that it won't fall into the front fender.

CAUTION:

Install the lamp housing with the bead facing up.



INSTALLATION

Installation is the reverse order of removal.

LIGHTING AND TURN SIGNAL SWITCH

LIGHTING AND TURN SIGNAL SWITCH

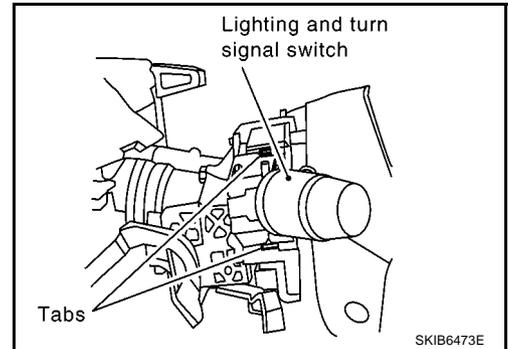
PFP:25540

Removal and Installation

EKS00P8N

REMOVAL

1. Remove steering column cover. Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#) .
2. Disconnect lighting and turn signal switch connector.
3. While pressing tabs, pull lighting and turn signal switch toward driver door and release from the steering column.



INSTALLATION

Installation is the reverse order of removal.

HAZARD SWITCH

HAZARD SWITCH

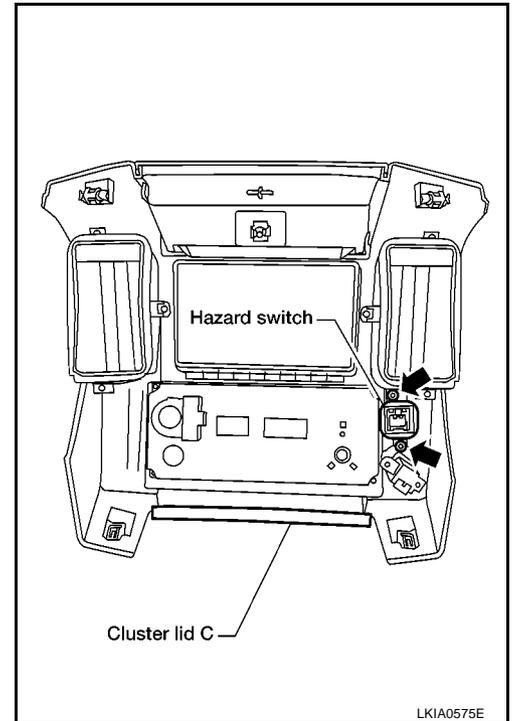
PFP:25290

Removal and Installation

EKS00P80

REMOVAL

1. Remove cluster lid C. Refer to [IP-11, "CLUSTER LID C"](#) .
2. Disconnect hazard switch connector.
3. Remove screws and remove hazard switch.



INSTALLATION

Installation is the reverse order of removal.

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COMBINATION SWITCH

PFP:25567

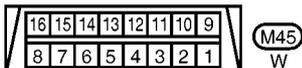
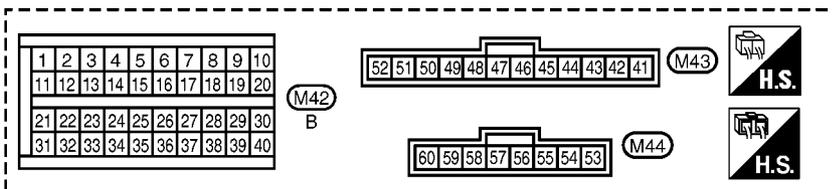
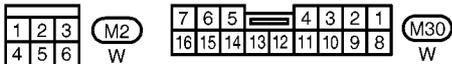
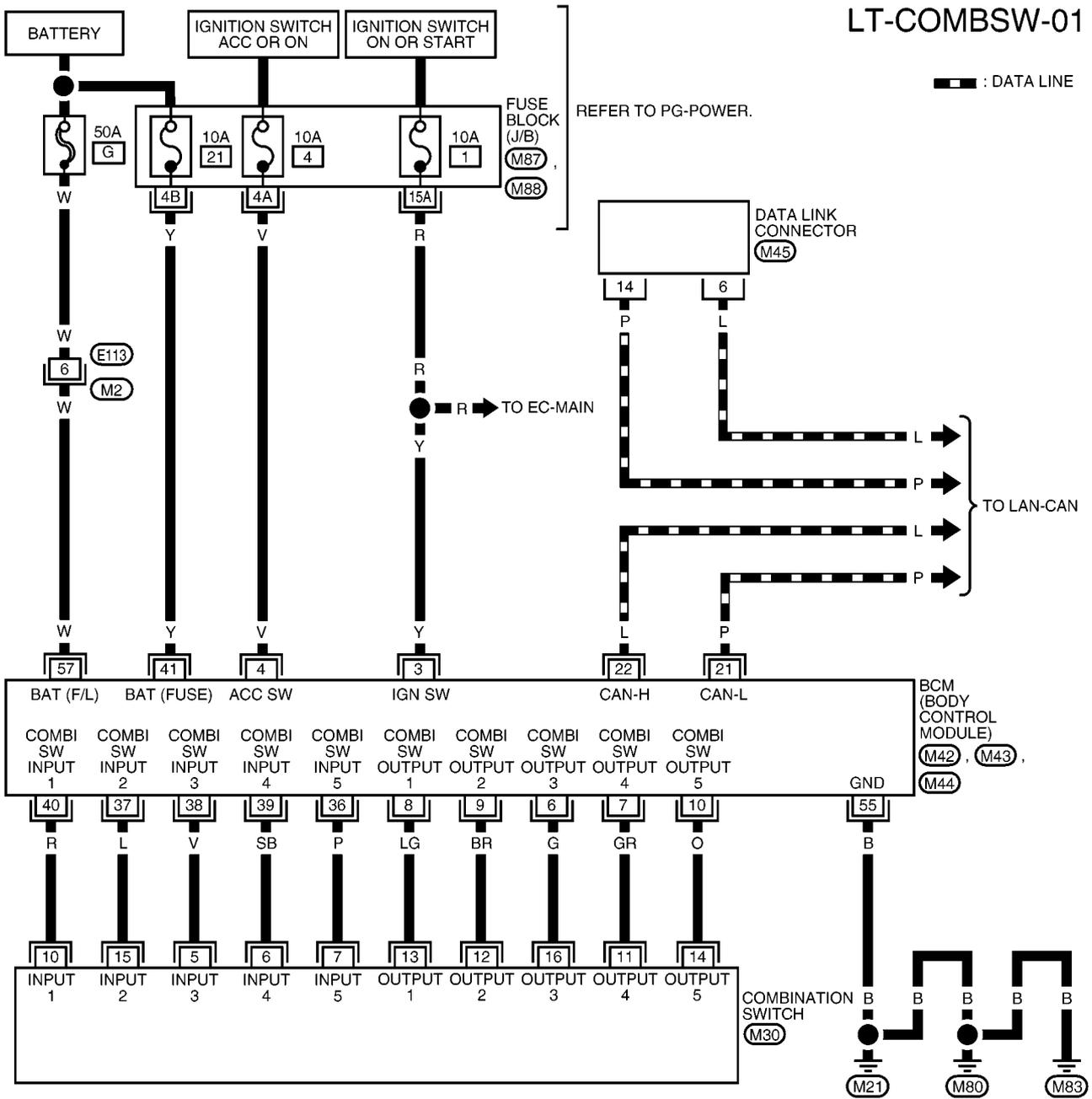
COMBINATION SWITCH

Wiring Diagram — COMBSW —

EKS00P9V

LT-COMBSW-01

— : DATA LINE



REFER TO THE FOLLOWING.
M87, M88 - FUSE BLOCK-JUNCTION BOX (J/B)

COMBINATION SWITCH

Combination Switch Reading Function

EKS00P9W

Refer to [BCS-3, "COMBINATION SWITCH READING FUNCTION"](#) .

CONSULT-II Function (BCM)

EKS00P9X

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

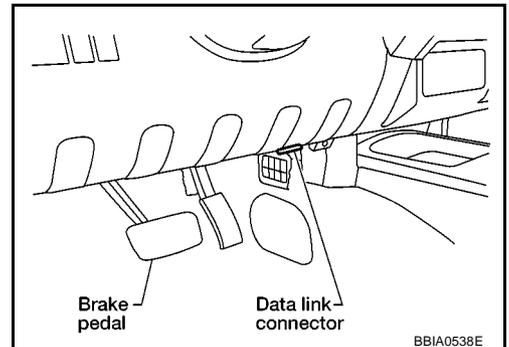
BCM diagnostic part	Diagnostic mode	Description
COMBINATION SWITCH	DATA MONITOR	Displays BCM input/output data in real time.

CONSULT-II OPERATION

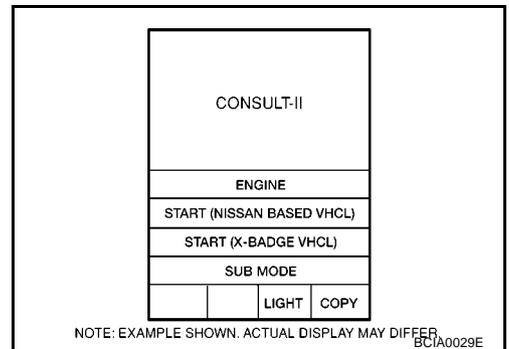
CAUTION:

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.

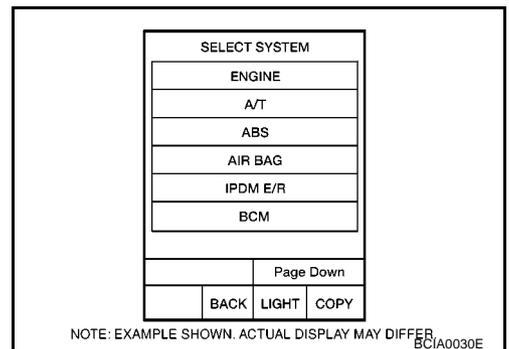
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, and then turn ignition switch ON.



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

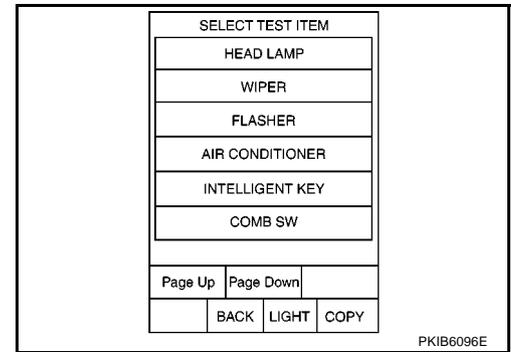


3. Touch "BCM" on "SELECT SYSTEM" screen.
If "BCM" is not indicated, refer to [GI-50, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#) .



COMBINATION SWITCH

4. Touch "COMB SW" on "SELECT TEST ITEM" screen.



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. When "ALL SIGNALS" is selected, all the signals will be monitored. When "SELECTION FROM MENU" is selected, touch items to be monitored.
5. Touch "START".
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
TURN SIGNAL R "ON/OFF"	Displays status (turn signal switch right position: ON/other: OFF) of turn RH switch judged from the turn signal switch signal.
TURN SIGNAL L "ON/OFF"	Displays status (turn signal switch left position: ON/other: OFF) of turn LH switch judged from the turn signal switch signal.
HI BEAM SW "ON/OFF"	Displays status (lighting switch high beam position: ON/other: OFF) of high beam switch judged from the lighting switch signal.
HEAD LAMP SW 1 "ON/OFF"	Displays status (lighting switch 2ND position: ON/other: OFF) of headlamp 1 switch judged from the lighting switch signal.
HEAD LAMP SW 2 "ON/OFF"	Displays status (lighting switch 2ND position: ON/other: OFF) of headlamp 2 switch judged from the lighting switch signal.
LIGHT SW 1ST "ON/OFF"	Displays status (lighting switch 1ST or 2ND position: ON/other: OFF) of lighting switch 1ST position switch judged from the lighting switch signal.
PASSING SW "ON/OFF"	Displays status (lighting switch passing position: ON/other: OFF) of passing switch judged from the lighting switch signal.
FR FOG SW "ON/OFF"	Displays status (lighting switch front fog lamp ON position: ON/others: OFF) of front fog lamp switch judged from the lighting switch signal.
RR FOG SW "ON/OFF"	Displays status (rear fog lamp switch position: ON/other: OFF) of rear fog switch judged from the lighting switch signal.
FR WIPER HI "ON/OFF"	Displays status (front wiper switch high position: ON/other: OFF) of front wiper high switch judged from the wiper switch signal.
FR WIPER LOW "ON/OFF"	Displays status (front wiper switch low position: ON/other: OFF) of front wiper low switch judged from the wiper switch signal.
FR WIPER INT "ON/OFF"	Displays status (front wiper switch intermittent position: ON/other: OFF) of front wiper intermittent switch judged from the wiper switch signal.
FR WASHER SW "ON/OFF"	Displays status (front washer switch ON position: ON/other: OFF) of front washer switch judged from the wiper switch signal.

COMBINATION SWITCH

Monitor item		Contents
INT VOLUME	"1 - 7"	Displays status (wiper intermittent dial position setting 1-7) of intermittent volume switch judged from the wiper switch signal.
RR WIPER ON	"ON/OFF"	Displays status (rear wiper switch ON position: ON/other: OFF) of rear wiper switch judged from the wiper switch signal.
RR WIPER INT	"ON/OFF"	Displays status (rear wiper switch intermittent position: ON/other: OFF) of rear wiper intermittent switch judged from the wiper switch signal.
RR WASHER SW	"ON/OFF"	Displays status (rear washer switch ON position: ON/other: OFF) of rear washer switch judged from the wiper switch signal.

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COMBINATION SWITCH

EKS00P9Y

Combination Switch Inspection

1. SYSTEM CHECK

Referring to table below, check to which system the 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	—	LIGHT SW 1ST
INT VOLUME 2	RR WIPER ON	RR FOG	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 carry 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 the HI BEAM switch is malfunctioning, confirm that "TURN RH", "HEAD LAMP 1" and "LIGHT SW 1ST" in system 5, to which the HI BEAM switch belongs, turn ON-OFF normally.

DATA MONITOR			
MONITOR			
TURN SIGNAL R		OFF	
TURN SIGNAL L		OFF	
HIBEAM SW		OFF	
HEAD LAMP SW1		OFF	
HEAD LAMP SW2		OFF	
LIGHT SW 1ST		OFF	
PASSING SW		OFF	
AUTO LIGHT SW		OFF	
FR FOG SW		OFF	
		Page Down	
		RECORD	
MODE	BACK	LIGHT	COPY

SKIA7075E

Ⓧ Without CONSULT-II

Operating combination switch, and confirm that other switches in malfunctioning system operate normally.
Example: When the HI BEAM switch is malfunctioning, confirm that "TURN RH", "HEAD LAMP 1" and "LIGHT SW 1ST" in system 5, to which HI BEAM switch belongs, turn ON-OFF normally.

Check results

Other switches in malfunctioning system operate normally.>> Replace lighting switch or wiper switch.

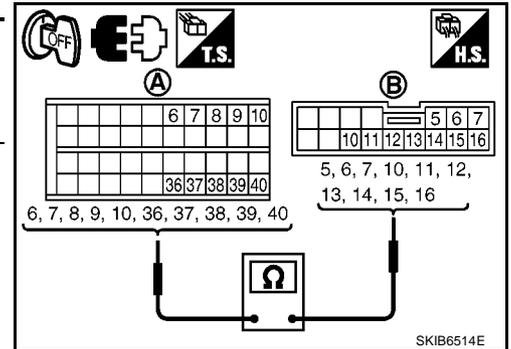
Other switches in malfunctioning system do not operate normally.>> GO TO 3.

COMBINATION SWITCH

3. HARNESS INSPECTION

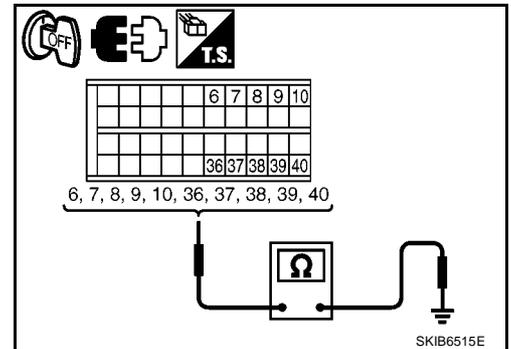
1. Turn ignition switch OFF.
2. Disconnect BCM and combination switch connectors.
3. Check for continuity between BCM harness connector (A) of the suspect system and the corresponding combination switch harness connector (B).

Suspect system	Terminal				Continuity	
	A		B			
	Connector	Terminal	Connector	Terminal		
1	M42	output 1	8	M30	13	Yes
		input 1	40		10	
2		output 2	9		12	
		input 2	37		15	
3		output 3	6		16	
		input 3	38		5	
4		output 4	7		11	
		input 4	39		6	
5		output 5	10		14	
		input 5	36		7	



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

Suspect system	BCM connector	Terminal			Continuity
1	M42	output 1	8	Ground	No
		input 1	40		
2		output 2	9		
		input 2	37		
3		output 3	6		
		input 3	38		
4		output 4	7		
		input 4	39		
5		output 5	10		
		input 5	36		



OK or NG

OK >> GO TO 4.

NG >> Check harness between BCM and combination switch for open or short circuit.

COMBINATION SWITCH

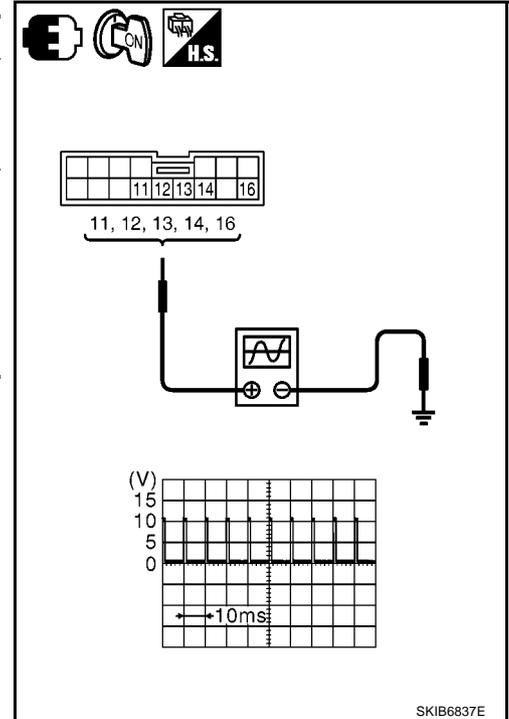
4. BCM OUTPUT TERMINAL INSPECTION

1. Connect BCM and combination switch connectors.
2. Turn ignition switch ON.
3. Turn lighting switch and wiper switch to OFF.
4. Set wiper dial to position 4.
5. Check BCM connector output terminal voltage waveform of suspect malfunctioning system.

Suspect system	Terminal			
	(+)			(-)
	Combination switch connector	Terminal		
1	M30	Output 1	13	Ground
2		Output 2	12	
3		Output 3	16	
4		Output 4	11	
5		Output 5	14	

OK or NG

- OK >> Open circuit in combination switch, GO TO 5.
 NG >> Replace BCM. Refer to [BCS-17, "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

Refer to [LT-112, "Removal and Installation"](#) .

Switch Circuit Inspection

Refer to [LT-118, "Combination Switch Inspection"](#) .

EKS00P9Z

EKS00PA0

STOP LAMP

PFP:26550

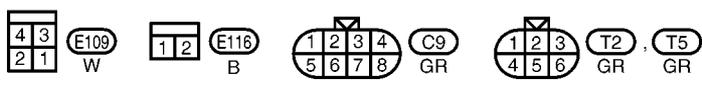
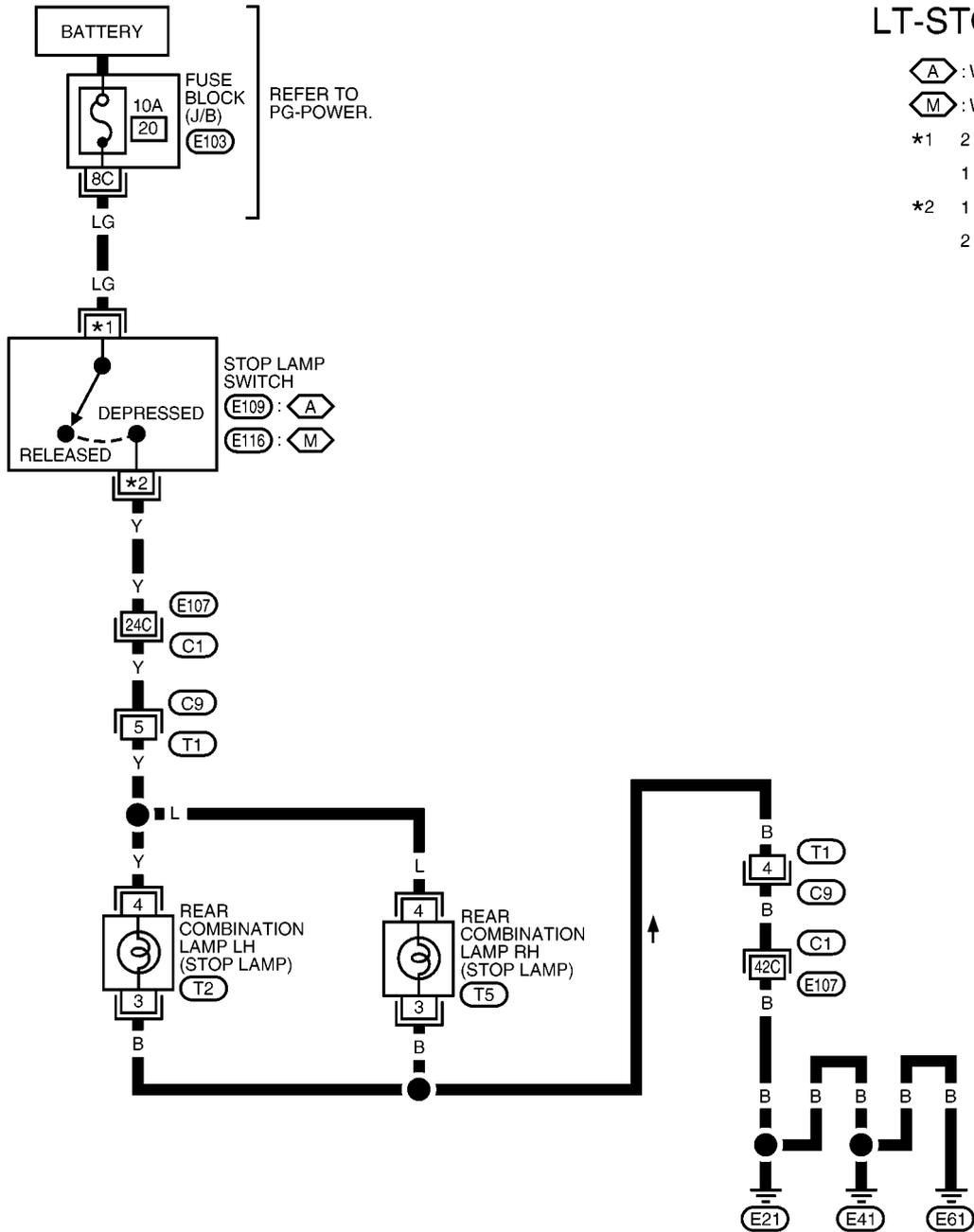
STOP LAMP

Wiring Diagram — STOP/L —

EKS00P8P

LT-STOP/L-01

- ⬡ : WITH A/T
- ⬢ : WITH M/T
- *1 2: ⬢
- 1: ⬡
- *2 1: ⬢
- 2: ⬡



REFER TO THE FOLLOWING.
 C1 -SUPER MULTIPLE JUNCTION (SMJ)
 E103 -FUSE BLOCK-JUNCTION BOX (J/B)

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STOP LAMP

Bulb Replacement

EKS00Q8A

Refer to [LT-143, "Bulb Replacement"](#) .

Removal and Installation

EKS00Q8B

Refer to [LT-144, "Removal and Installation"](#) .

BACK-UP LAMP

PFP:26550

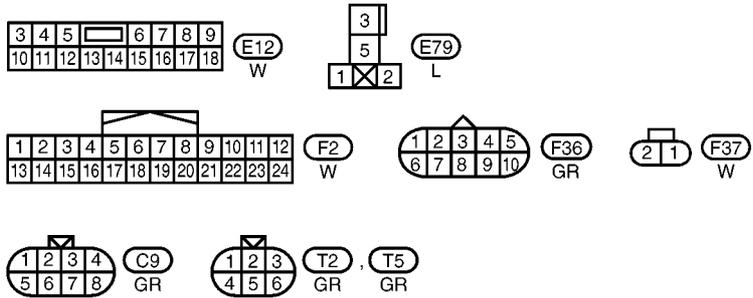
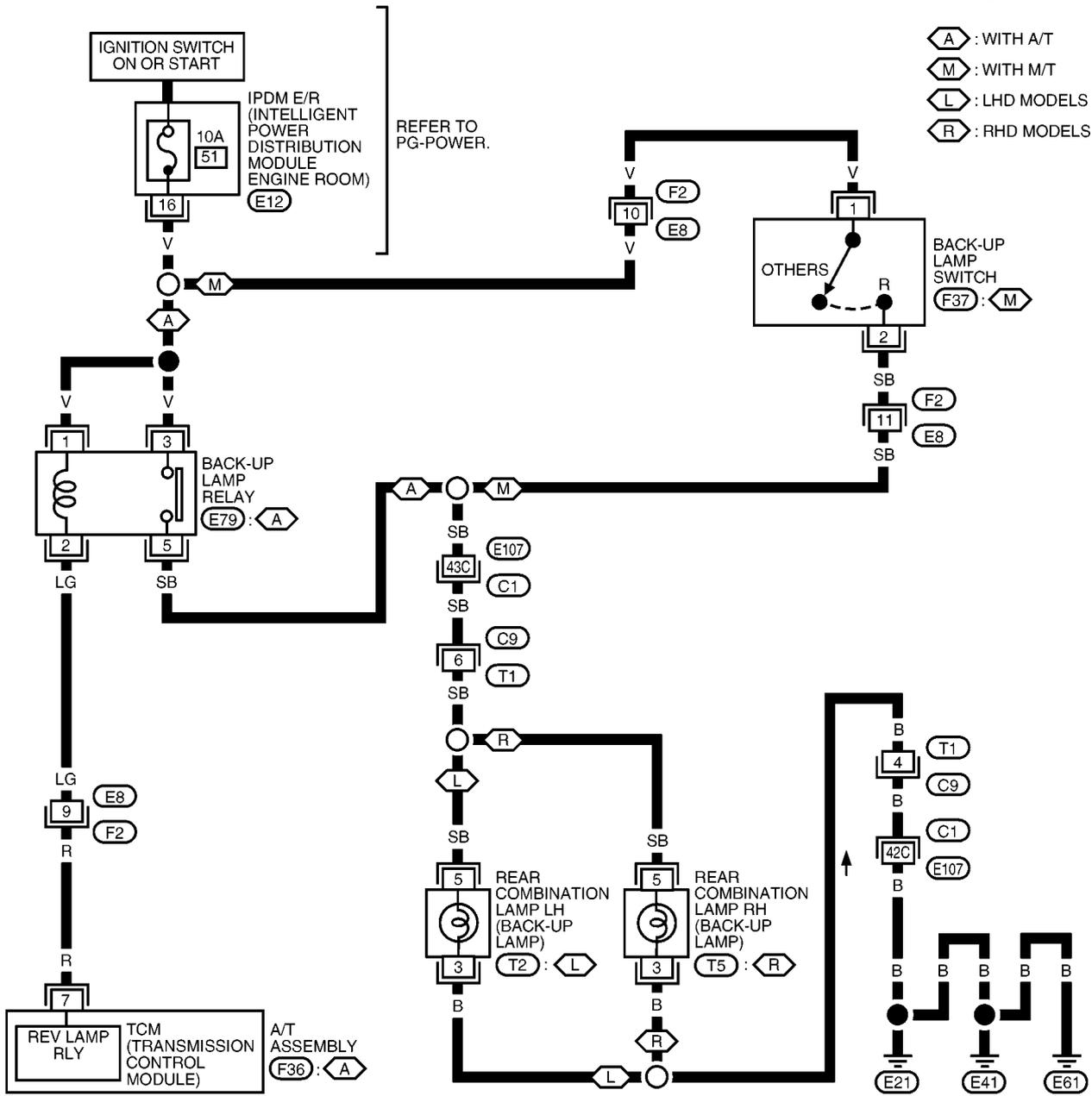
BACK-UP LAMP

Wiring Diagram — BACK/L —

EKS00P8S

LT-BACK/L-01

- A : WITH A/T
- M : WITH M/T
- L : LHD MODELS
- R : RHD MODELS



REFER TO THE FOLLOWING.
C1 -SUPER MULTIPLE JUNCTION (SMJ)

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BACK-UP LAMP

Bulb Replacement

EKS00P8T

Refer to [LT-143, "Bulb Replacement"](#) .

Removal and Installation

EKS00P8U

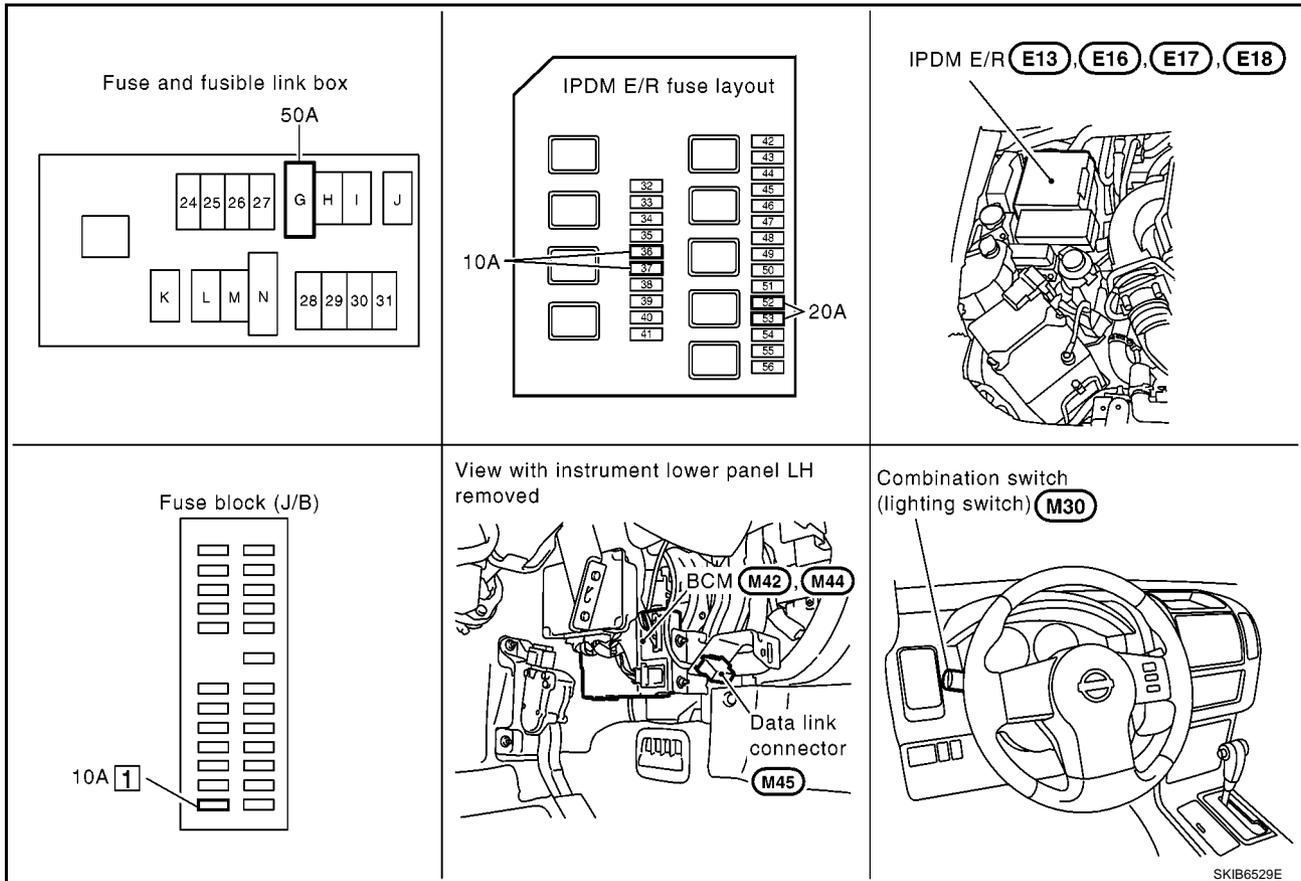
Refer to [LT-144, "Removal and Installation"](#) .

PARKING, LICENSE PLATE AND TAIL LAMPS

PFP:26550

Component Parts and Harness Connector Location

EKS00P9C



System Description

EKS00P9D

Control of the clearance, license plate, and tail lamps 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 clearance, license plate and tail lamps to illuminate. This input signal is communicated to the IPDM E/R (intelligent power distribution module engine room) through the CAN communication. The CPU (central processing unit) of the IPDM E/R controls the tail lamp relay coil. This relay, when energized, directs power to the clearance, license plate and tail lamps, which then illuminate.

OUTLINE

Power is supplied at all times

- to ignition relay (located in IPDM E/R) and
- to tail lamp relay (located in IPDM E/R), from battery directly,
- through 20A fuse (No. 52, located in IPDM E/R) and
- through 20A fuse (No. 53, located in IPDM E/R)
- to CPU (located in IPDM E/R),
- through 50A fusible link (letter G, located in fuse and fusible link box)
- to BCM terminal 57.

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

- to ignition relay (located in IPDM E/R),
- through 10A fuse [No. 1, located in fuse block (J/B)]
- to BCM terminal 3.

Ground is supplied

- to BCM terminal 55
- through grounds M21, M80 and M83,
- to IPDM E/R terminals 38 and 59

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PARKING, LICENSE PLATE AND TAIL LAMPS

- through grounds E21, E41 and E61.

OPERATION BY LIGHTING SWITCH

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

- through IPDM E/R terminal 28
- to front combination lamp LH terminal 1,
- through IPDM E/R terminal 49
- to front combination lamp RH terminal 1,
- through IPDM E/R terminal 57
- to rear combination lamp RH and LH terminals 1 and
- to license plate lamp RH and LH terminals 1.

Ground is supplied

- to front combination lamp RH and LH terminals 2
- to rear combination lamp RH and LH terminals 3 and
- to license plate lamp RH and LH terminals 2
- through grounds E21, E41 and E61.

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

COMBINATION SWITCH READING FUNCTION

Refer to [BCS-3, "COMBINATION SWITCH READING FUNCTION"](#) .

CAN Communication System Description

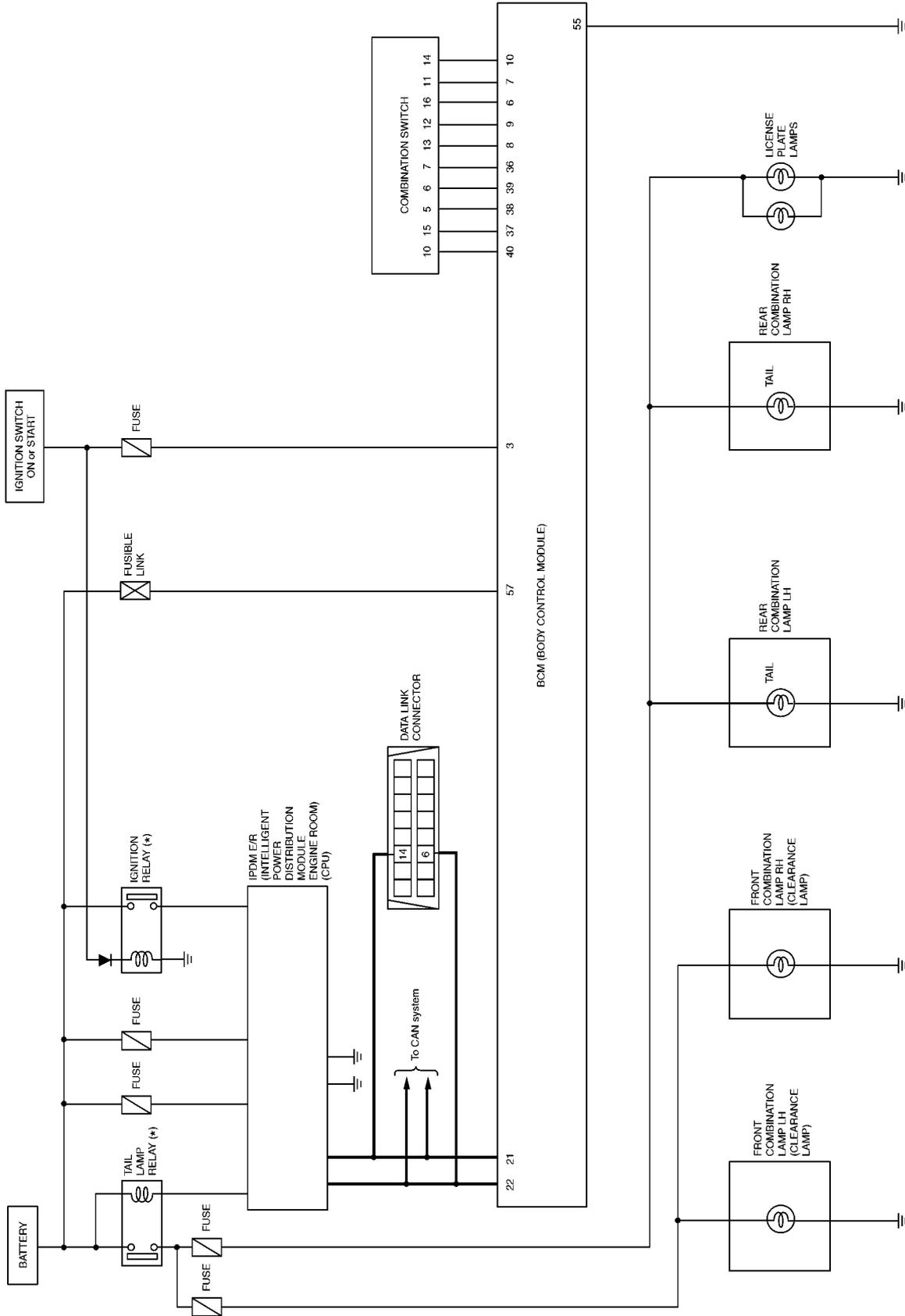
Refer to [LAN-23, "CAN COMMUNICATION"](#) .

EKS00P9F

PARKING, LICENSE PLATE AND TAIL LAMPS

Schematic WITHOUT DAYTIME LIGHT SYSTEM

EKS00P9G



*: This relay is built into the IPDM EFR (Intelligent power distribution module engine room).

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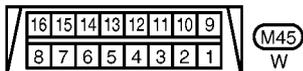
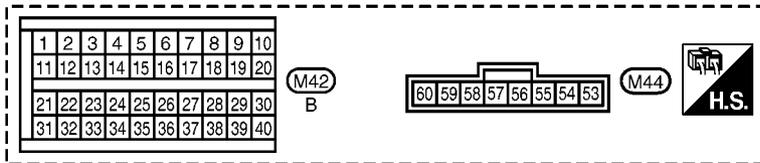
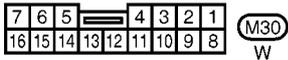
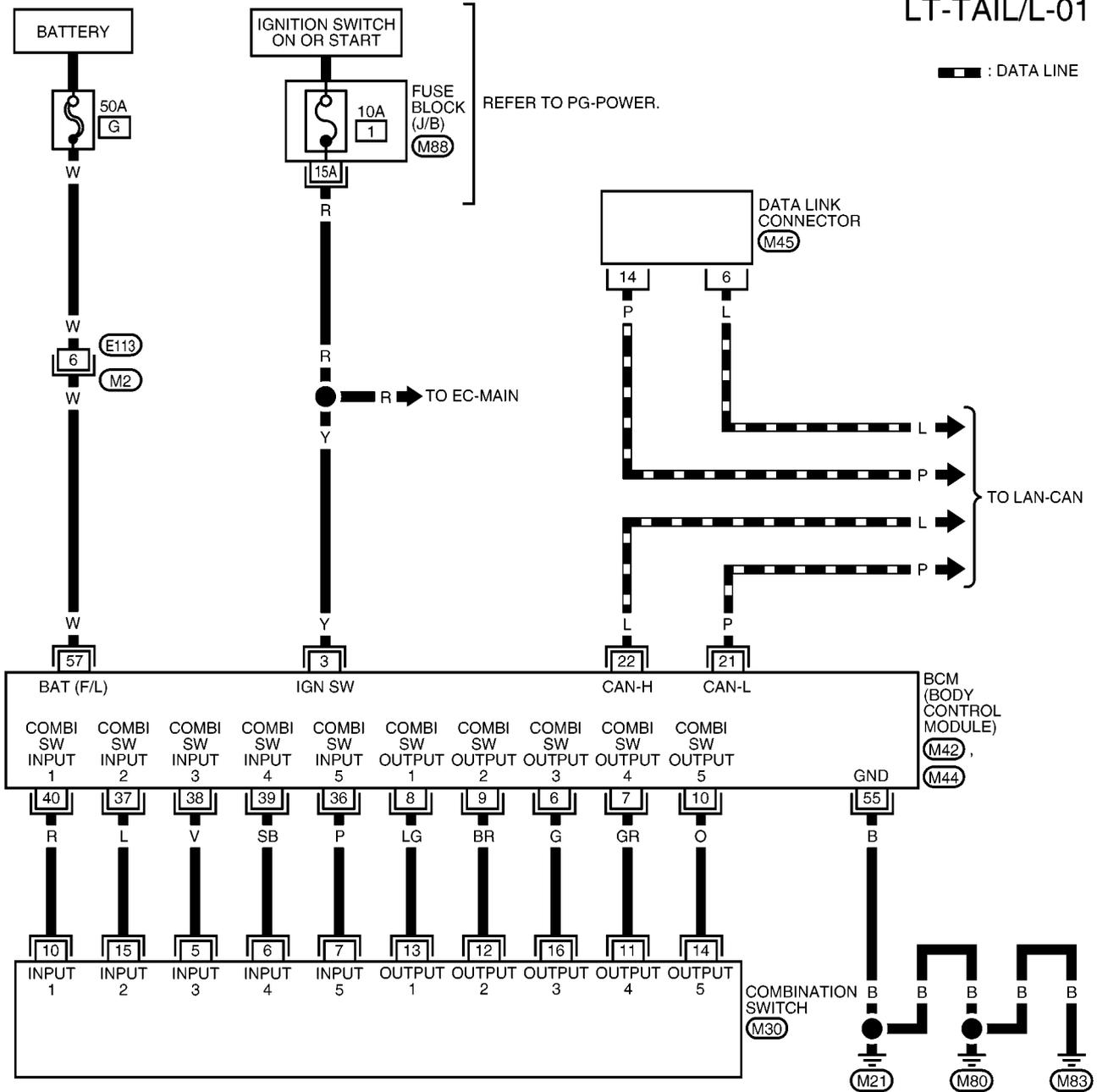
PARKING, LICENSE PLATE AND TAIL LAMPS

EKS00P9H

Wiring Diagram — TAIL/L — WITHOUT DAYTIME LIGHT SYSTEM

LT-TAIL/L-01

▬ : DATA LINE



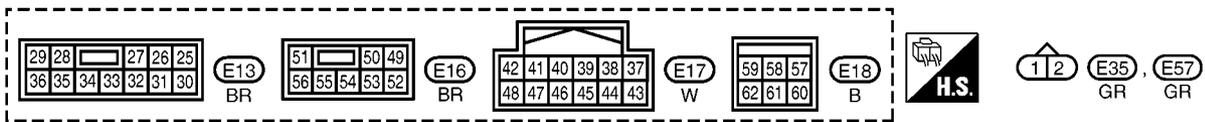
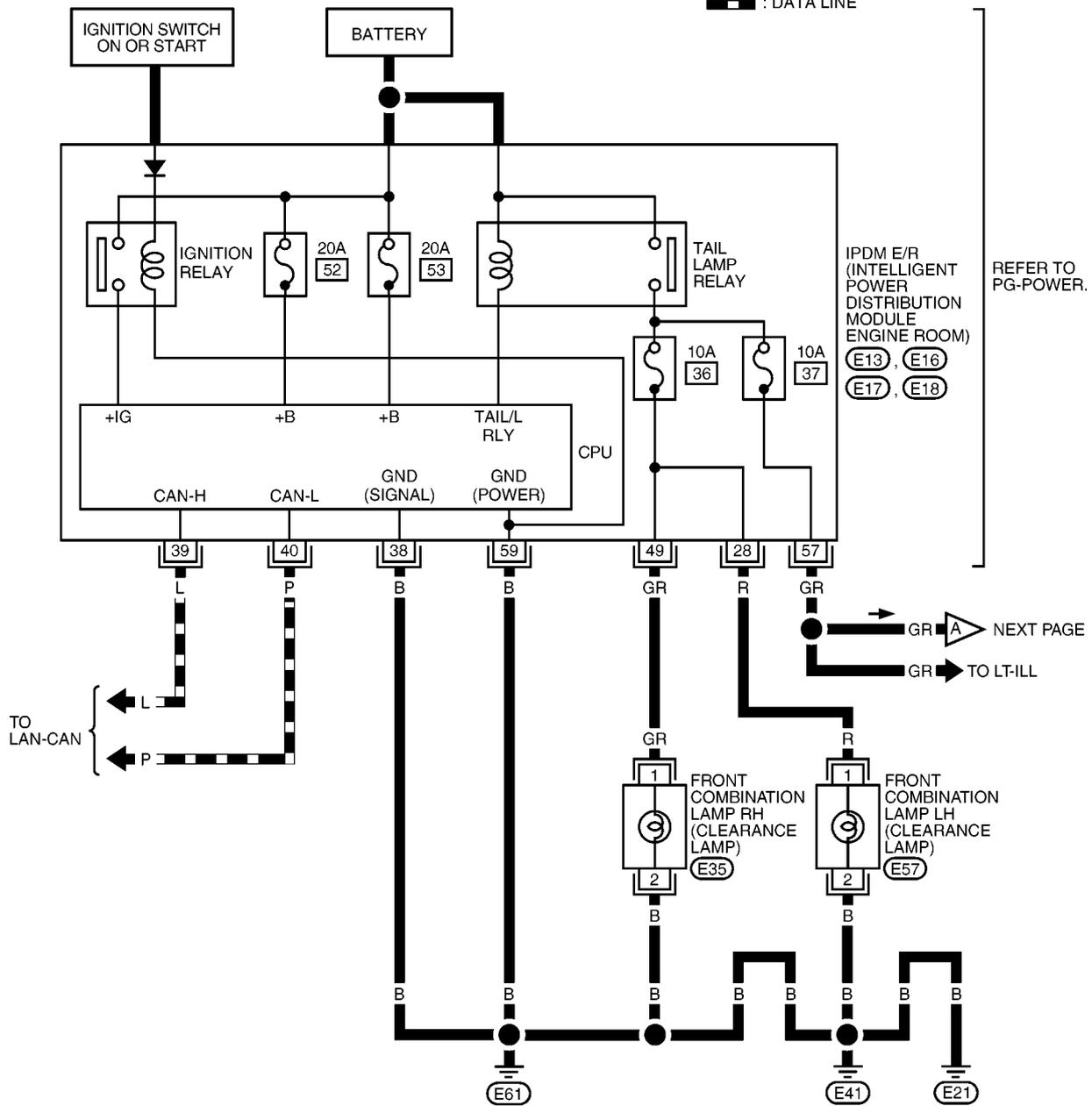
REFER TO THE FOLLOWING.

(M88) - FUSE BLOCK-
JUNCTION BOX (J/B)

MKWA3579E

PARKING, LICENSE PLATE AND TAIL LAMPS

LT-TAIL/L-02



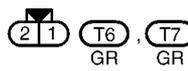
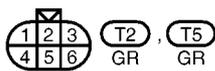
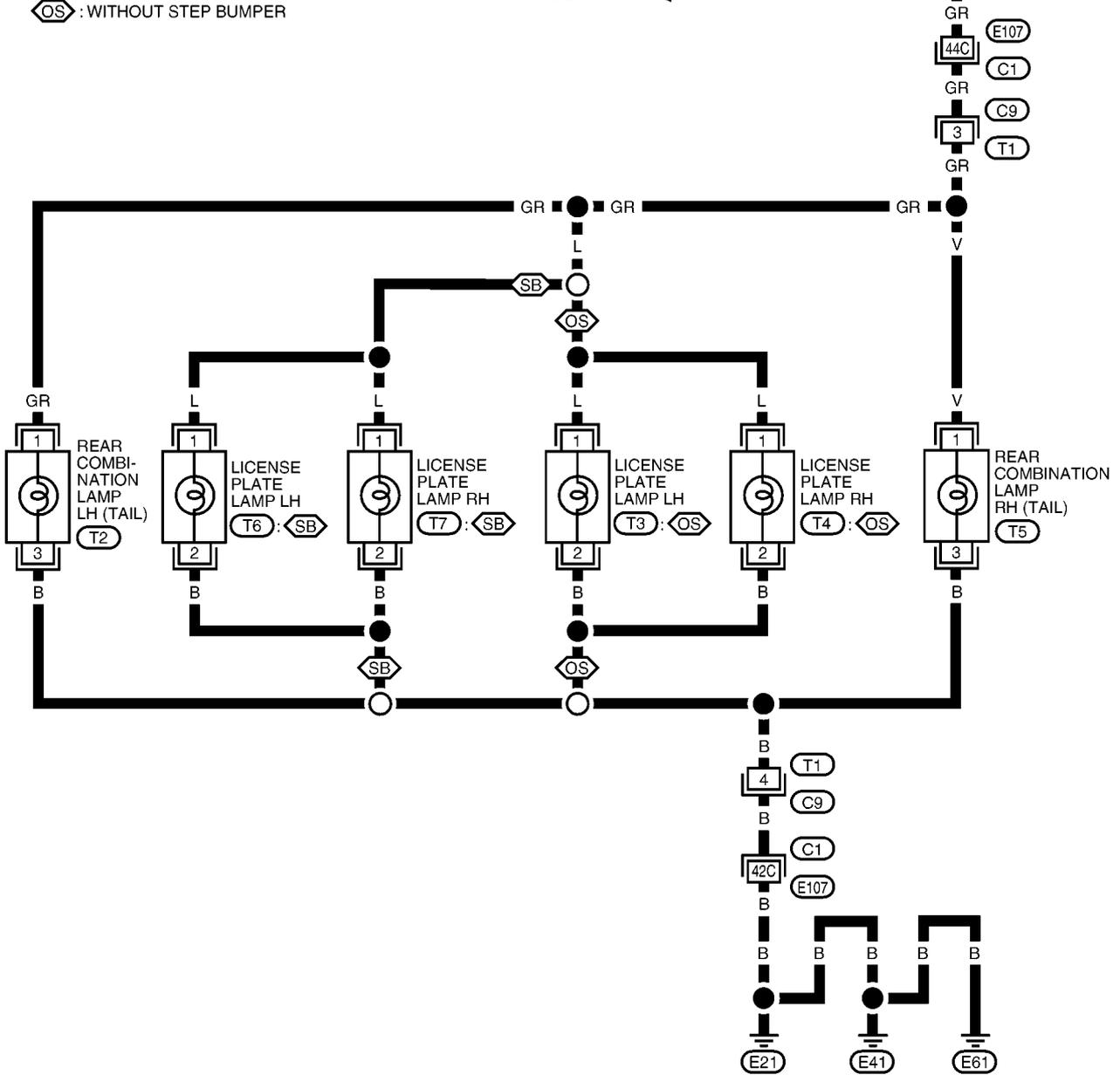
MKWA3580E

PARKING, LICENSE PLATE AND TAIL LAMPS

 : WITH STEP BUMPER
 : WITHOUT STEP BUMPER

PRECEDING PAGE  A GR →

LT-TAIL/L-03

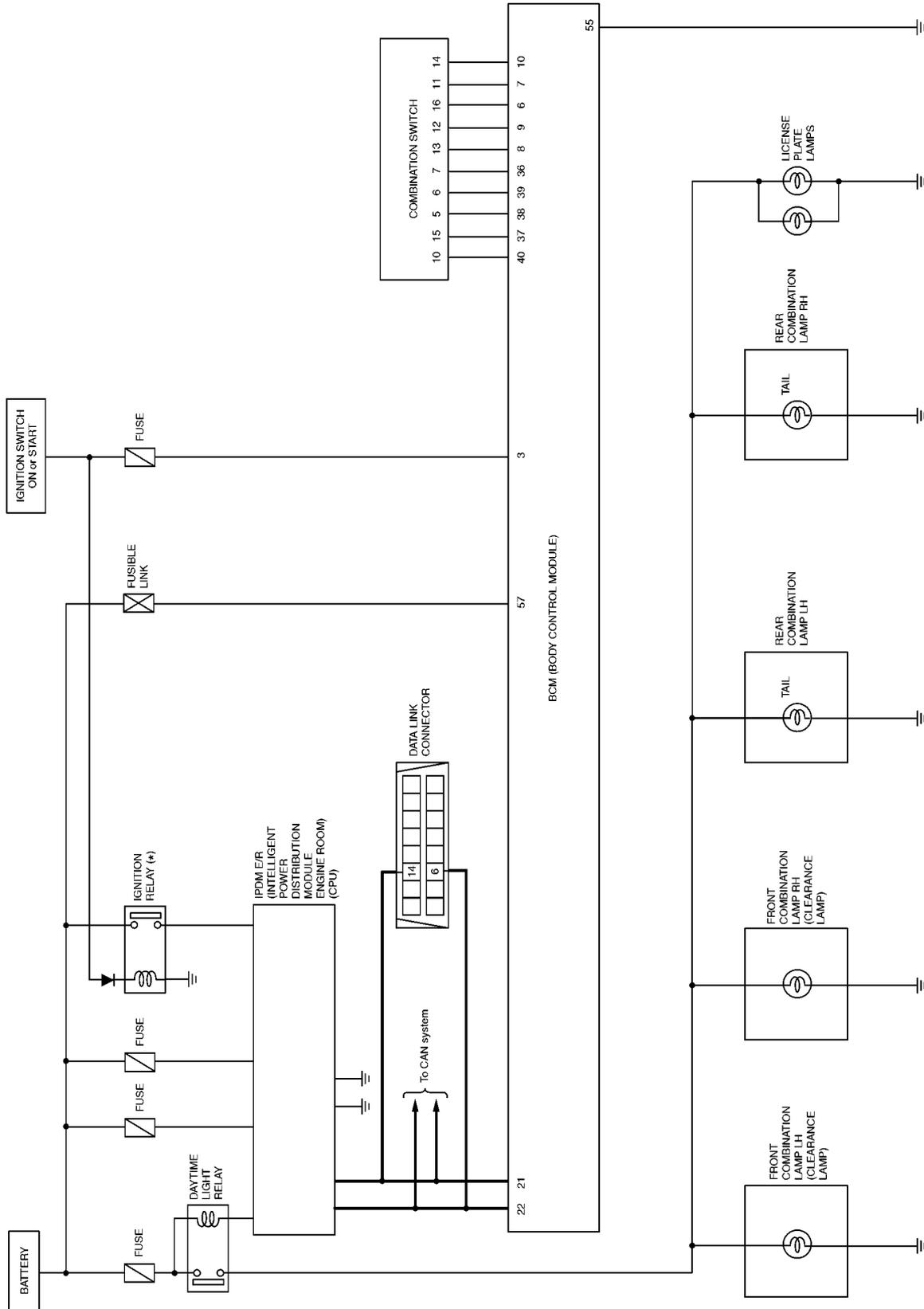


REFER TO THE FOLLOWING.
 -SUPER MULTIPLE JUNCTION (SMJ)

PARKING, LICENSE PLATE AND TAIL LAMPS

Schematic WITH DAYTIME LIGHT SYSTEM

EKS00Q8C



*: This relay is built into the IPDM/ER (Intelligent power distribution module engine room).

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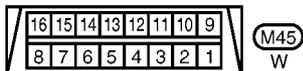
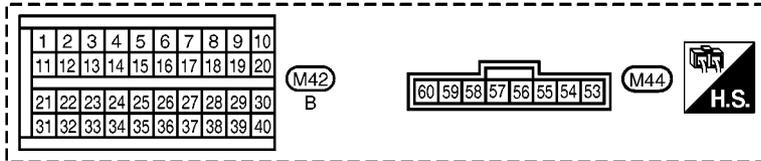
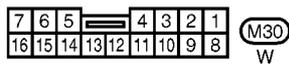
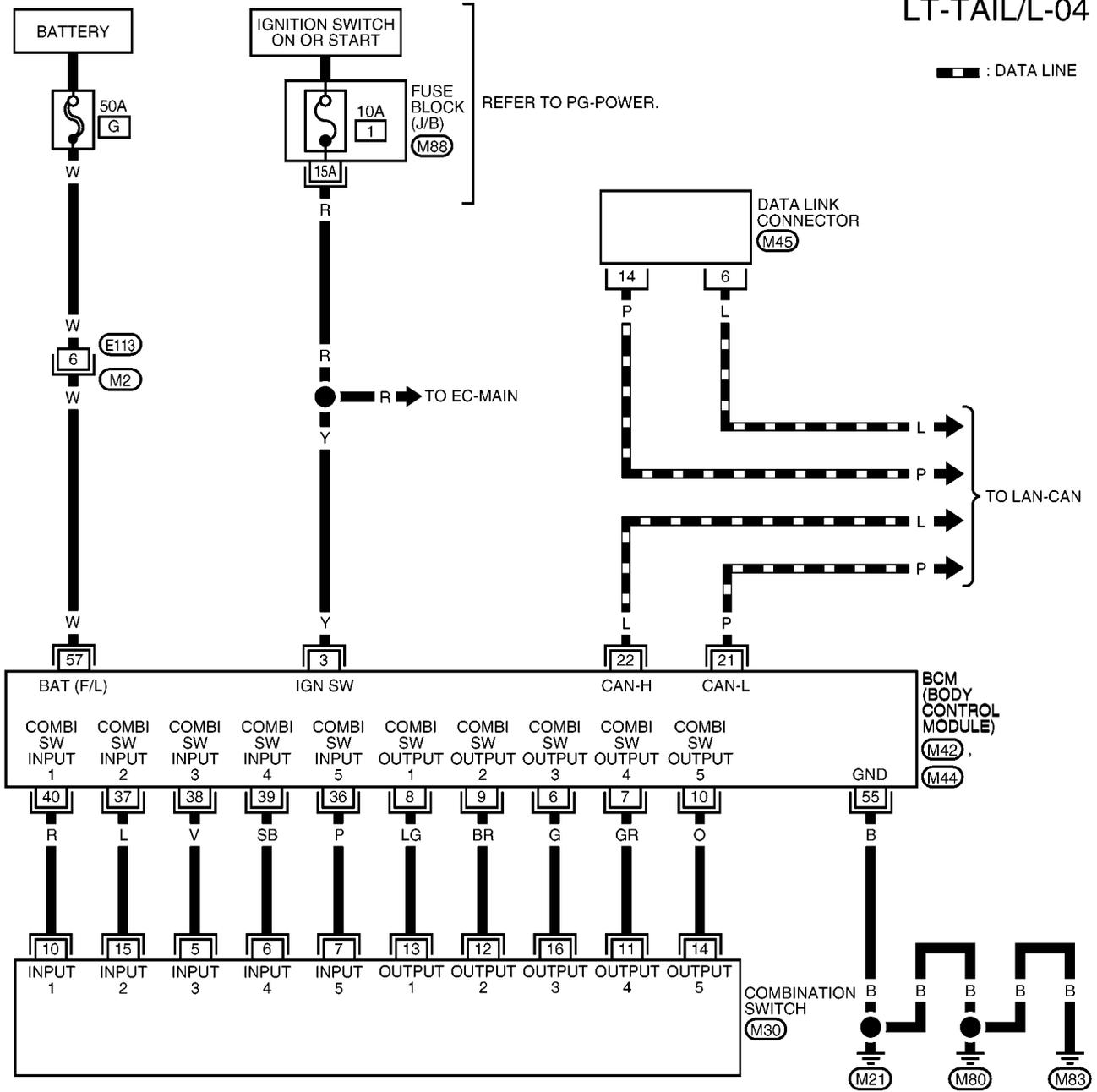
PARKING, LICENSE PLATE AND TAIL LAMPS

EKS00QB7

Wiring Diagram — TAIL/L — WITH DAYTIME LIGHT SYSTEM

LT-TAIL/L-04

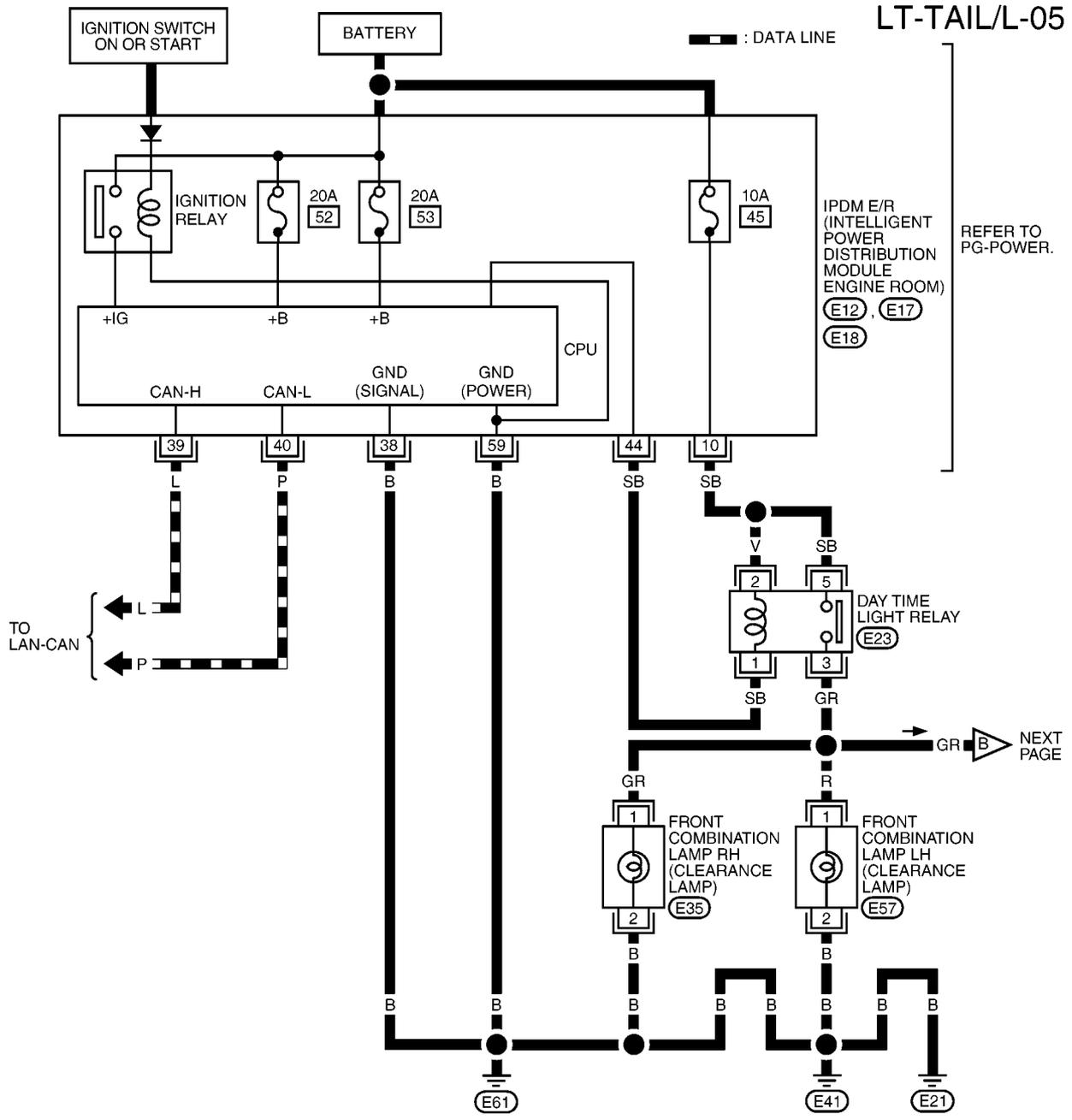
▬ : DATA LINE



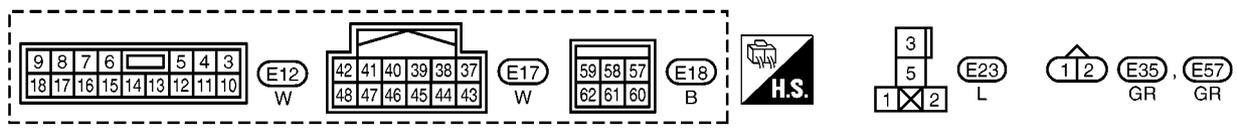
REFER TO THE FOLLOWING.

M88 - FUSE BLOCK-
JUNCTION BOX (J/B)

PARKING, LICENSE PLATE AND TAIL LAMPS



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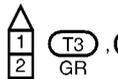
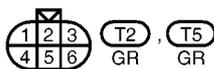
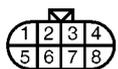
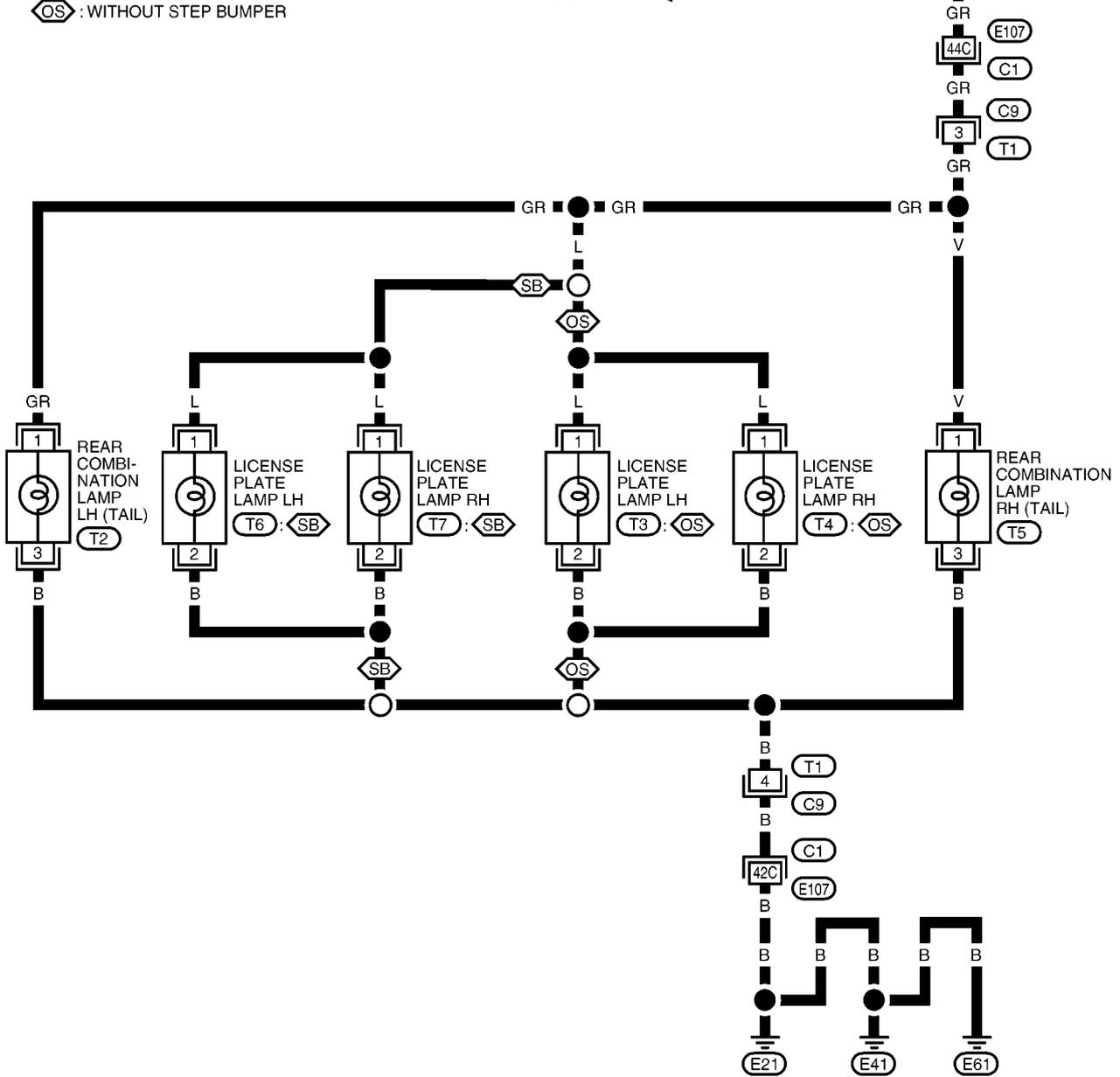


PARKING, LICENSE PLATE AND TAIL LAMPS

SB : WITH STEP BUMPER
OS : WITHOUT STEP BUMPER

PRECEDING PAGE B GR →

LT-TAIL/L-06



REFER TO THE FOLLOWING.
C1 -SUPER MULTIPLE JUNCTION (SMJ)

PARKING, LICENSE PLATE AND TAIL LAMPS

Terminals and Reference Values for BCM

EKS00P9K

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
3	Y	Ignition switch (ON)	ON	—	Battery voltage
6	G	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	
7	GR	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	
8	LG	Combination switch output 1	ON	Lighting, turn, wiper OFF Wiper dial position 4	
9	BR	Combination switch output 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	
10	O	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	
21	P	CAN-L	—	—	
22	L	CAN-H	—	—	—
36	P	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	Approx. 0V
37	L	Combination switch input 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	
38	V	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	
39	SB	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	
40	R	Combination switch input 1	ON	Lighting, turn, wiper OFF Wiper dial position 4	
55	B	Ground	ON	—	Approx. 0V
57	W	Battery power supply (fusible link)	OFF	—	Battery voltage

Terminals and Reference Values for IPDM E/R

EKS00P9L

Terminal No.	Wire color	Signal name	Measuring condition		Reference value	
			Ignition switch	Operation or condition		
28	R	Front combination lamp LH (clarence lamp)	ON	Lighting switch 1ST position	OFF	Approx. 0V
					ON	Battery voltage
38	B	Ground	ON	—	Approx. 0V	
39	L	CAN-H	—	—	—	
40	P	CAN-L	—	—	—	
49	GR	Front combination lamp RH (clarence lamp)	ON	Lighting switch 1ST position	OFF	Approx. 0V
					ON	Battery voltage
57	GR	Rear combination lamp (RH and LH) (tail) and license plate lamp (RH and LH)	ON	Lighting switch 1ST position	OFF	Approx. 0V
					ON	Battery voltage
59	B	Ground	ON	—	Approx. 0V	

PARKING, LICENSE PLATE AND TAIL LAMPS

EKS00P9M

How to Proceed With Trouble Diagnosis

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-125, "System Description"](#) .
3. Carry out the Preliminary Check. Refer to [LT-136, "Preliminary Check"](#) .
4. Check symptom and repair or replace the cause of malfunction.
5. Do the clearance, license plate and tail lamps operate normally? If YES, GO TO 6. If NO, GO TO 4.
6. INSPECTION END

Preliminary Check

EKS00P9N

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES OR FUSIBLE LINK

Check for blown fuses or fusible link.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	G
	Ignition switch ON or START position	1
IPDM E/R	Battery	52
		53
		36
		37

Refer to [LT-128, "Wiring Diagram — TAIL/L —"](#) .

OK or NG

OK >> GO TO 2.

NG >> If fuse or fusible link is blown, be sure to eliminate cause of malfunction before installing new fuse or fusible link. Refer to [PG-4, "POWER SUPPLY ROUTING CIRCUIT"](#) .

2. CHECK POWER SUPPLY CIRCUIT

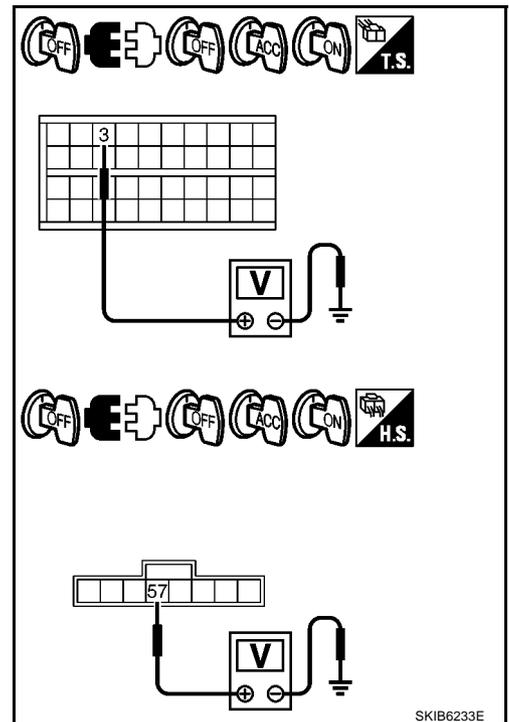
1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check voltage between BCM harness connector and ground.

Terminal		(-)	Ignition switch position		
(+)	Terminal		OFF	ACC	ON
BCM connector		Ground			
M42	3		0V	0V	Battery voltage
M44	57		Battery voltage	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.



SK1B6233E

PARKING, LICENSE PLATE AND TAIL LAMPS

3. CHECK GROUND CIRCUIT

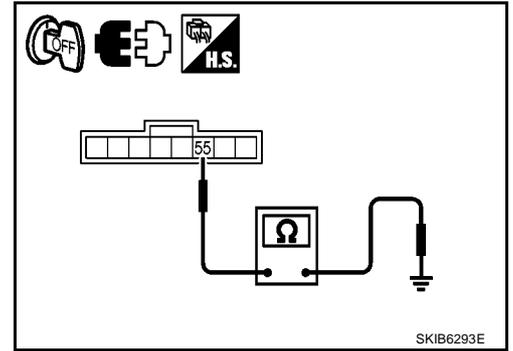
Check continuity between BCM harness connector and ground.

BCM connector	Terminal	Ground	Continuity
M44	55		Yes

OK or NG

OK >> INSPECTION END

NG >> Repair harness or connector.



EKS00P90

CONSULT-II Functions (BCM)

Refer to [LT-15, "CONSULT-II Functions \(BCM\)"](#) .

CONSULT-II Functions (IPDM E/R)

Refer to [LT-18, "CONSULT-II Functions \(IPDM E/R\)"](#) .

EKS00P9P

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PARKING, LICENSE PLATE AND TAIL LAMPS

4. CHECK INPUT SIGNAL

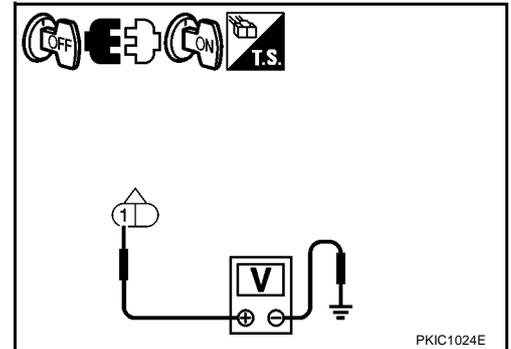
 With CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect connectors of front combination lamps, license plate lamps and rear combination lamps.
3. Select "IPDM E/R" on CONSULT-II. Select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
4. Select "EXTERNAL LAMPS" on "SELECT TEST ITEM" screen.
5. Touch "TAIL" on "ACTIVE TEST" screen.
6. When tail lamp is operating, check voltage between ground and each lamp harness connector (front combination lamp, license plate lamp and rear combination lamp).

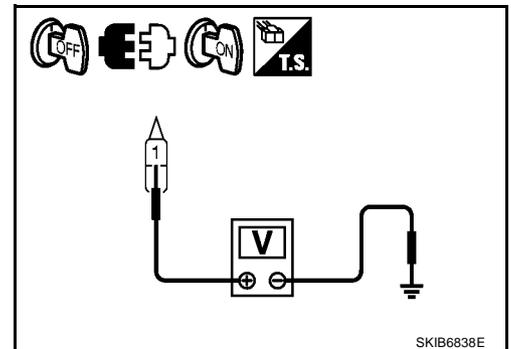
 Without CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect connectors of front combination lamps, license plate lamps and rear combination lamps.
3. Start auto active test. Refer to [PG-19, "Auto Active Test"](#).
4. When tail lamp is operating, check voltage between ground and each lamp harness connector (front combination lamp, license plate lamp and rear combination lamp).

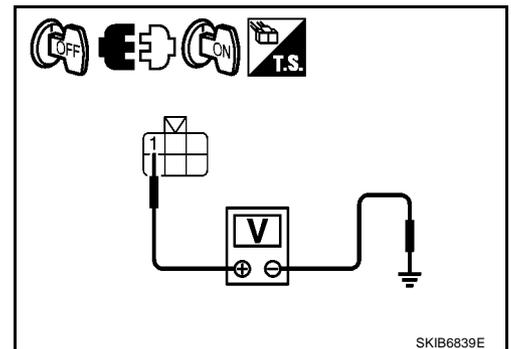
Terminal		Terminal	(-)	Voltage
(+)				
Front combination lamp (clearance) connector		1	Ground	Battery voltage
RH	E35			
LH	E57			



Terminal		Terminal	(-)	Voltage
(+)				
License plate lamp connector		1	Ground	Battery voltage
RH	T4			
LH	T3			



Terminal		Terminal	(-)	Voltage
(+)				
Rear combination lamp (tail) connector		1	Ground	Battery voltage
RH	T5			
LH	T2			



OK or NG

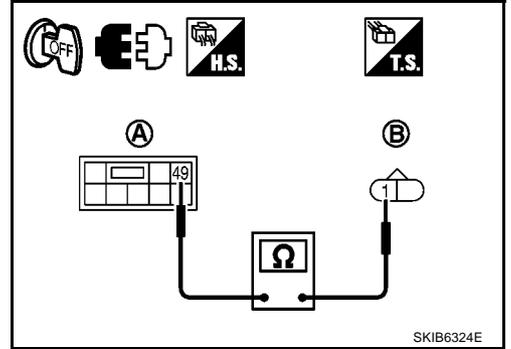
- OK >> GO TO 5.
 NG >> GO TO 6.

PARKING, LICENSE PLATE AND TAIL LAMPS

5. CHECK CLEARANCE, LICENSE PLATE AND TAIL LAMP CIRCUIT

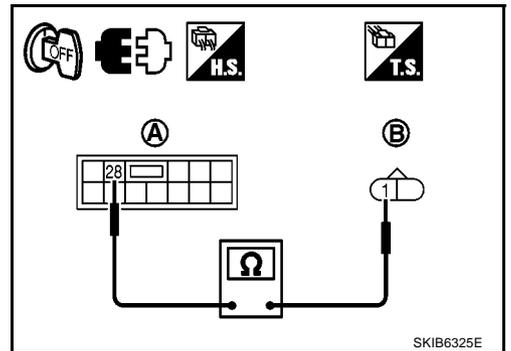
1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector (A) and front combination lamp RH (clearance) harness connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
E16	49	E35	1	Yes



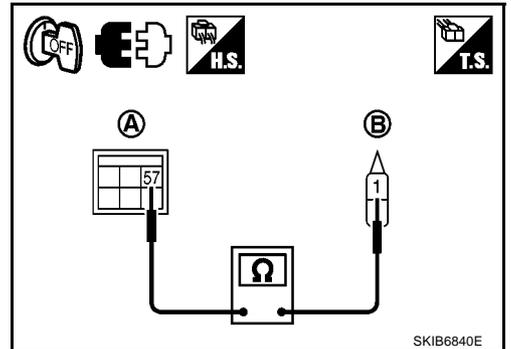
4. Check continuity between IPDM E/R harness connector (A) and front combination lamp LH (clearance) harness connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
E13	28	E57	1	Yes



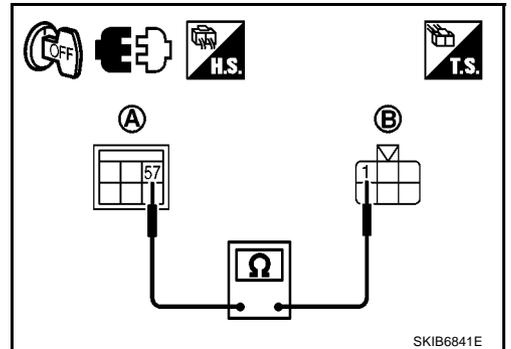
5. Check continuity between IPDM E/R harness connector (A) and license plate lamp harness connector (B).

Circuit	A		B		Continuity
	Connector	Terminal	Connector	Terminal	
RH	E18	57	T4	1	Yes
LH			T3		



6. Check continuity between IPDM E/R harness connector (A) and rear combination lamp (tail) harness connector (B).

Circuit	A		B		Continuity
	Connector	Terminal	Connector	Terminal	
RH	E18	57	T5	1	Yes
LH			T2		



OK or NG

OK >> Replace IPDM E/R. Refer to [PG-26, "Removal and Installation of IPDM E/R"](#).

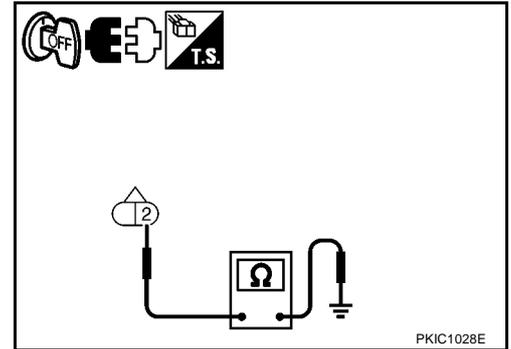
NG >> Repair harness or connector.

PARKING, LICENSE PLATE AND TAIL LAMPS

6. CHECK GROUND CIRCUIT

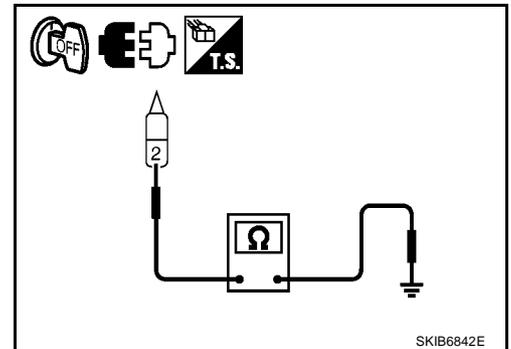
1. Check continuity between front combination lamp (clearance) and ground.

Front combination lamp (clearance) connector		Terminal	Ground	Continuity
RH	E35	2		Yes
LH	E57			



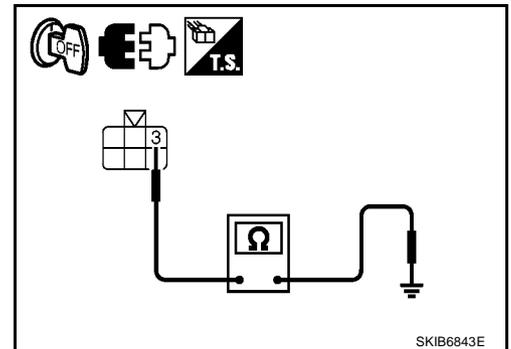
2. Check continuity between license plate lamp harness connector and ground.

License plate lamp connector		Terminal	Ground	Continuity
RH	T4	2		Yes
LH	T3			



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

Rear combination lamp (tail) connector		Terminal	Ground	Continuity
RH	T5	3		Yes
LH	T2			



OK or NG

- OK >> Check connector for connection, bend and loose fit. If it is normal, check bulbs.
 NG >> Repair harness or connector.

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

EKS00P9S

- This symptom indicates the malfunction of ignition relay in IPDM E/R. Refer to [PG-15, "Function of Detecting Ignition Relay Malfunction"](#).
- Select "BCM" on CONSULT-II. Select "HEADLAMP" on "SELECT TEST ITEM" screen. Select "DATA MONITOR" on "SELECT DIAG MODE" screen. If "LIGHT SW 1ST" is OFF when lighting switch is OFF, replace IPDM E/R. Refer to [PG-26, "Removal and Installation of IPDM E/R"](#).

PARKING, LICENSE PLATE AND TAIL LAMPS

Front Clearance Lamp BULB REPLACEMENT

EKS00P9T

Refer to [LT-29, "Bulb Replacement"](#) .

Tail Lamp BULB REPLACEMENT

EKS00P9U

Refer to [LT-143, "Bulb Replacement"](#) .

REAR COMBINATION LAMP

REAR COMBINATION LAMP

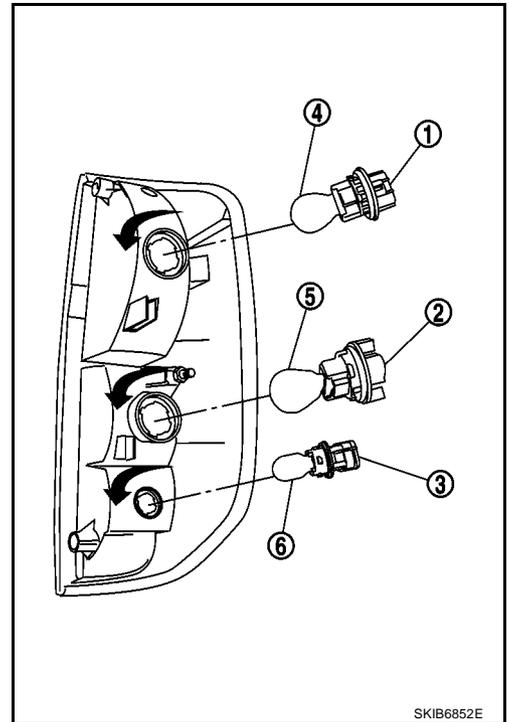
PFP:26554

Bulb Replacement REMOVAL

EKS00P90

1. Remove rear combination lamp. Refer to [LT-144, "Removal and Installation"](#) .
2. Turn bulb socket (1), (2) and (3) counterclockwise and unlock it.
3. Remove bulb (4), (5) and (6).

Stop/ tail lamp	: 12V - 21/ 5W
Rear turn signal lamp	: 12V - 21W
Buck up lamp (or rear fog lamp)	: 12V - 16W (21W)



INSTALLATION

Installation is the reverse order of removal.

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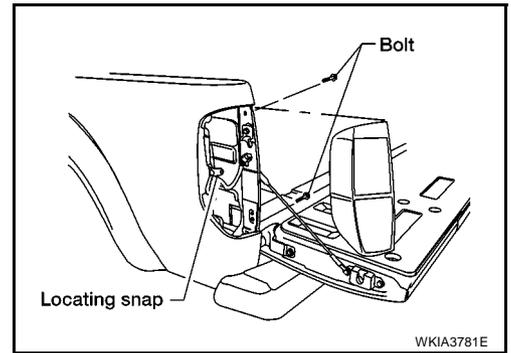
REAR COMBINATION LAMP

EKS00P91

Removal and Installation

REMOVAL

1. Remove rear combination lamp mounting bolts.
2. Pull rear combination lamp to remove from the vehicle.
3. Disconnect rear combination lamp connector.



INSTALLATION

Installation is the reverse order of removal.

Rear combination lamp mounting bolts



: 2.4 N·m (0.24 kg - m, 21 in -lb)

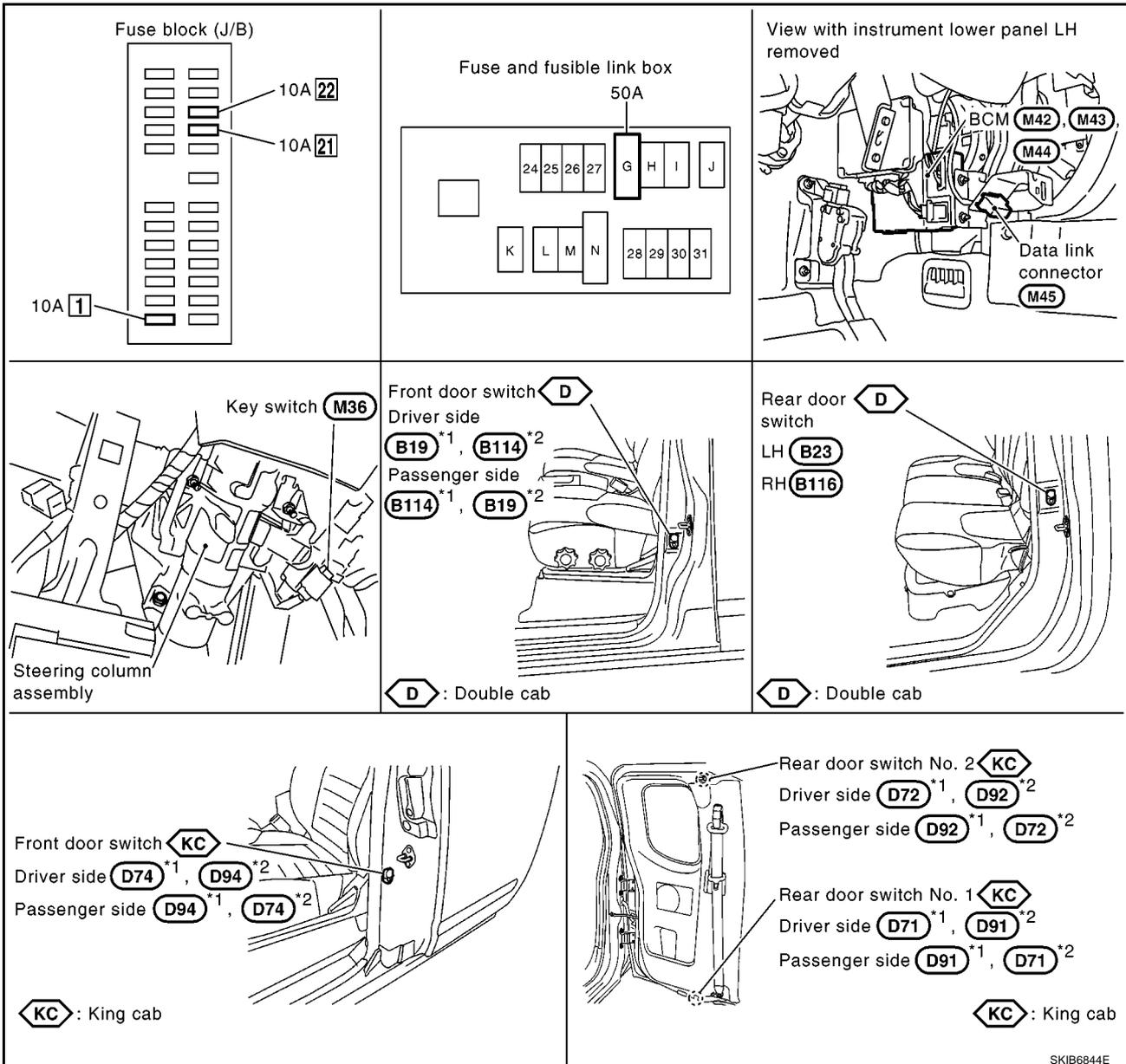
INTERIOR ROOM LAMP

INTERIOR ROOM LAMP

PF2:26410

Component Parts and Harness Connector Location

EKS00P92



*1: LHD models, *2: RHD models

System Description

EKS00P93

When front map lamp and room lamp switch is in DOOR position, front map lamp and room lamp ON/OFF is controlled by timer according to signals from switches including key switch, front door switch (driver side), rear door switch (driver side)No.1*, rear door switch (driver side)No.2*, unlock signal from keyfob, ignition switch. When front map lamp and room lamp turns ON, there is a gradual brightening over 1 second. When front map lamp and room lamp turns OFF, there is a gradual dimming over 1 second.

Front map lamp and room lamp timer is controlled by the BCM (body control module).

Front map lamp and room lamp timer control settings can be changed with CONSULT-II.

*: Only king cab

POWER SUPPLY AND GROUND

Power is supplied at all times

- through 50A fusible link (letter G, located in fuse and fusible link box)
- to BCM terminal 57,
- through 10A fuse [No. 22, located in fuse block (J/B)]

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INTERIOR ROOM LAMP

- to key switch terminal 2,
- through 10A fuse [No. 21, located in fuse block (J/B)]
- to BCM terminal 41.

When key is inserted in key switch, power is supplied

- through the key switch terminal 1
- to BCM terminal 5.

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

- through 10A fuse [No. 1, located in fuse and block (J/B)]
- to BCM terminal 3.

Ground is supplied

- to BCM terminal 55
- through grounds M21, M80 and M83.

When front driver side door is opened, ground is supplied (double cab)

- to BCM terminal 15
- through front door switch driver side terminal 2
- through case ground of front door switch driver side.

When front passenger side door is opened, ground is supplied (double cab)

- to BCM terminal 14
- through front door switch passenger side terminal 2
- through case ground of front door switch passenger side.

When rear door LH is opened, ground is supplied (double cab)

- to BCM terminal 16
- through rear door switch LH terminal 2
- through case ground of rear door switch LH.

When rear door RH is opened, ground is supplied (double cab)

- to BCM terminal 12
- through rear door switch RH terminal 2
- through case ground of rear door switch RH.

When front driver side door is opened, ground is supplied (king cab)

- to BCM terminal 15
- through front door switch (driver side) terminal 2
- through front door switch (driver side) terminal 3
- through grounds B9 and B25 (LHD models)
- through grounds B106 and B121 (RHD models).

When front passenger side door is opened, ground is supplied (king cab)

- to BCM terminal 14
- through front door switch (passenger side) terminal 2
- through front door switch (passenger side) terminal 3
- through grounds B9 and B25 (LHD models)
- through grounds B106 and B121 (RHD models).

When rear door (driver side) is opened, ground is supplied (king cab)

- to BCM terminal 15
- through rear door switch (driver side) No.1 and No.2 terminals 1
- through rear door switch (driver side) No.1 and No.2 terminals 2
- through grounds B9 and B25 (LHD models)
- through grounds B106 and B121 (RHD models).

When rear door (passenger side) is opened, ground is supplied (king cab)

- to BCM terminal 14
- through rear door switch (passenger side) No.1 and No.2 terminals 1

INTERIOR ROOM LAMP

- through rear door switch (passenger side) No.1 and No.2 terminals 2
- through grounds B9 and B25 (LHD models)
- through grounds B106 and B121 (RHD models).

When a signal is received by BCM, power is supplied

- through BCM terminal 42
- to key ring lamp terminal 1
- to front map lamp terminal 1 and
- to room lamp terminal 2.

SWITCH OPERATION

When front map lamp switch is ON, ground is supplied

- to front map lamp terminal 2
- through grounds M21, M80 and M83.

When room lamp switch is ON, ground is supplied through room lamp case ground.

ROOM LAMP TIMER OPERATION

When lamp 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 10A fuse [No. 22, located in fuse block (J/B)]
- to key switch terminal 2.

Key is removed from ignition key cylinder (key switch OFF), power will not be supplied to BCM terminal 5.

At the time that driver's door is opened, BCM detects that driver's door is unlocked. It determines that room lamp timer operation conditions are met, and turns the interior room lamps ON for 30 seconds.

Key is in ignition key cylinder (key switch ON), power is supplied

- through key switch terminal 1
- to BCM terminal 5.

When key is removed from key switch (key switch OFF), power supply to BCM terminal 5 is terminated. BCM detects that key has been removed, determines that room lamp timer conditions are met, and turns the interior room lamps ON for 30 seconds.

When driver's door opens → closes, and the key is not inserted in the key switch (key switch OFF), BCM terminal 15 changes between 0V (door open) → 12V (door closed). The BCM determines that conditions for room lamp operation are met and turns the room lamp ON for 30 seconds.

Timer control is canceled under the following conditions.

- Driver's door is opened [front door switch (driver side)].
- Ignition switch ON.
- Keyfob

INTERIOR LAMP BATTERY SAVER CONTROL

If interior lamp is left ON, it will not be turned off 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:

- Front map lamp
- Room lamp
- Key ring lamp

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

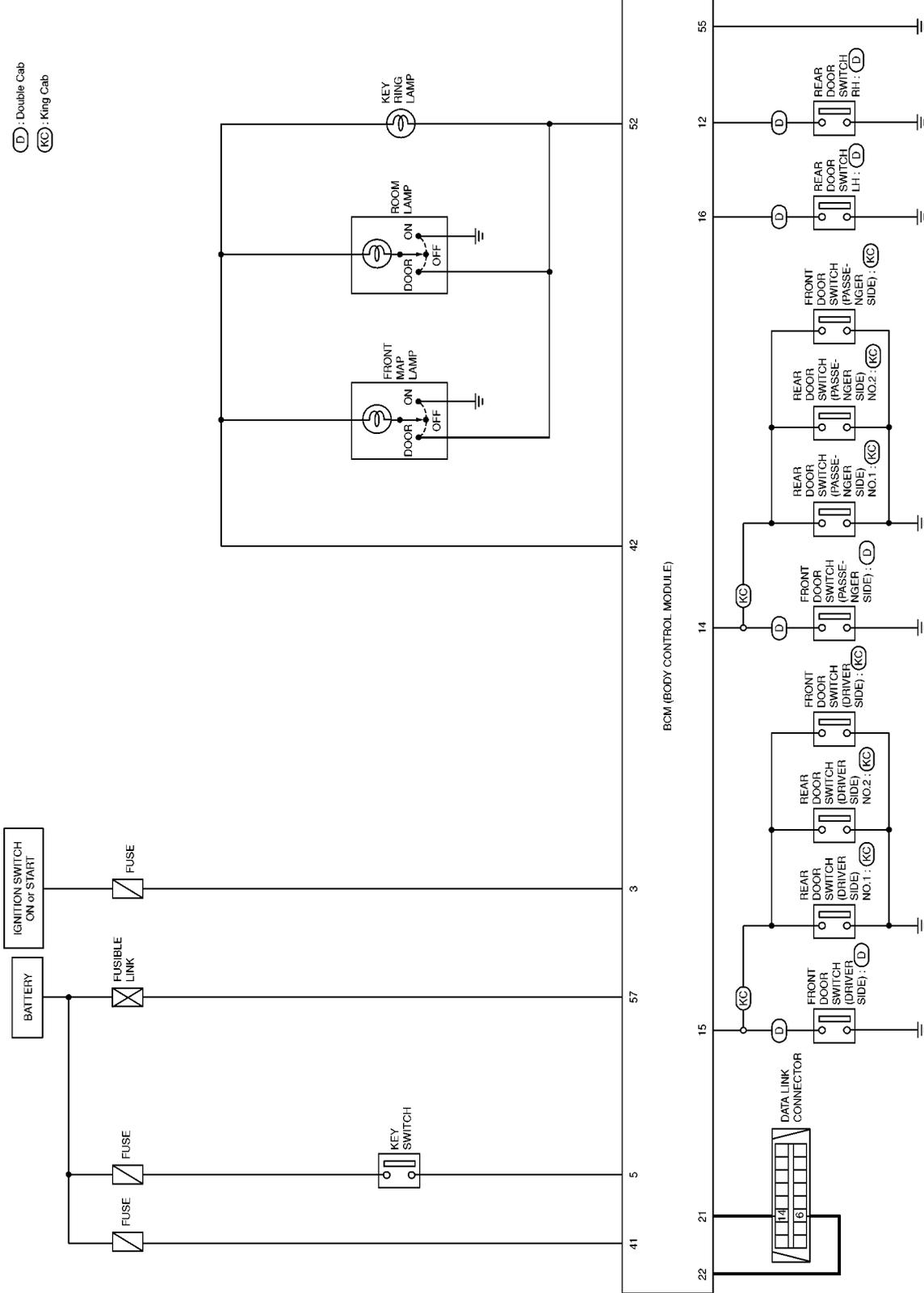
- signal received from keyfob or key cylinder is locked or unlocked,
- door is opened or closed,
- key is removed from ignition key cylinder or inserted in ignition key cylinder.

Interior lamp battery saver control period can be changed by the function setting of CONSULT-II. Refer to [LT-158. "WORK SUPPORT"](#) .

INTERIOR ROOM LAMP

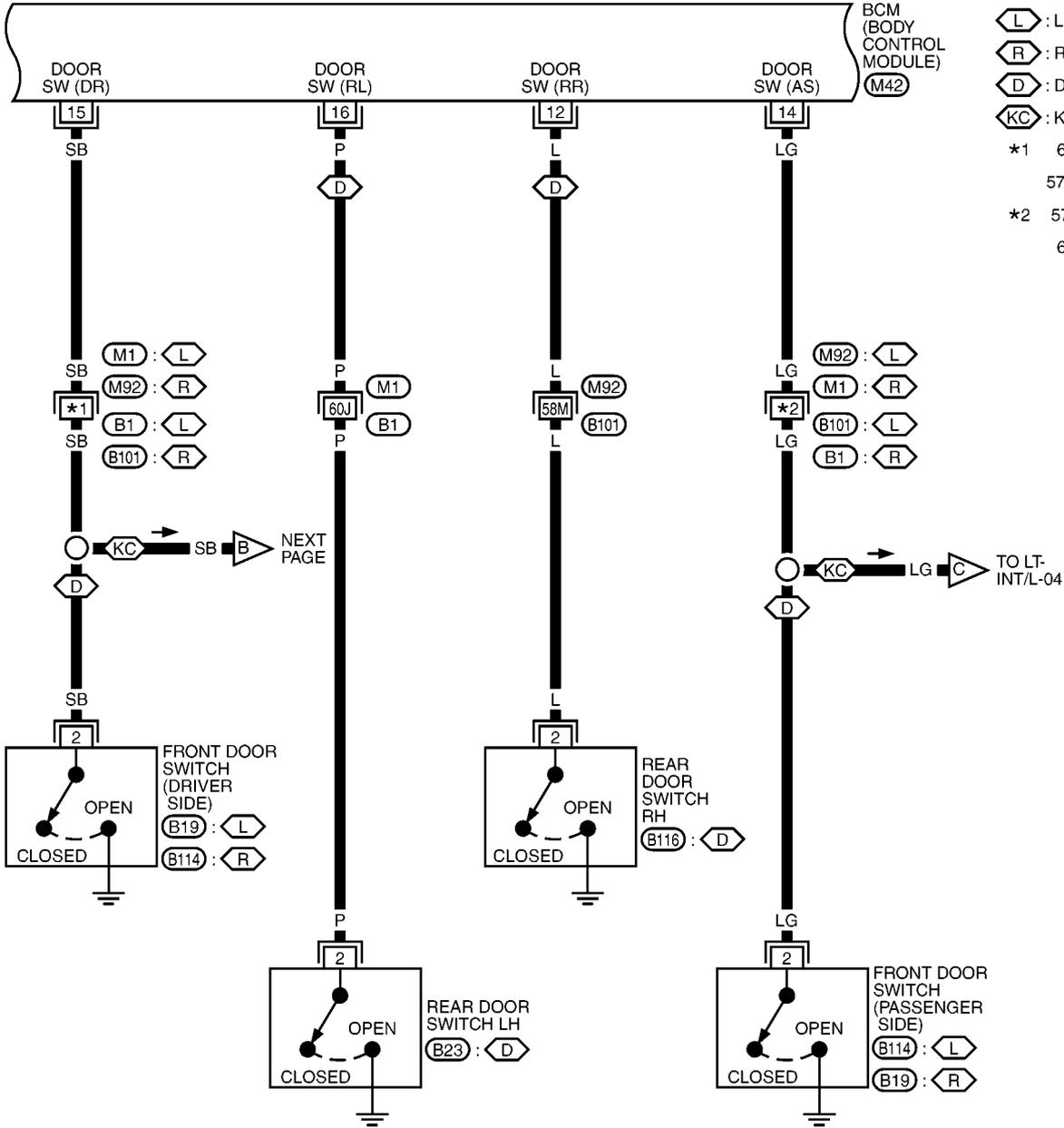
Schematic

EKS00P94



INTERIOR ROOM LAMP

LT-INT/L-02



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

(M42)
B

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2
3

(B19), (B23), (B114), (B116)
W W W W

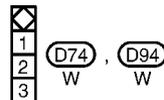
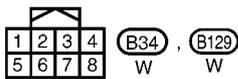
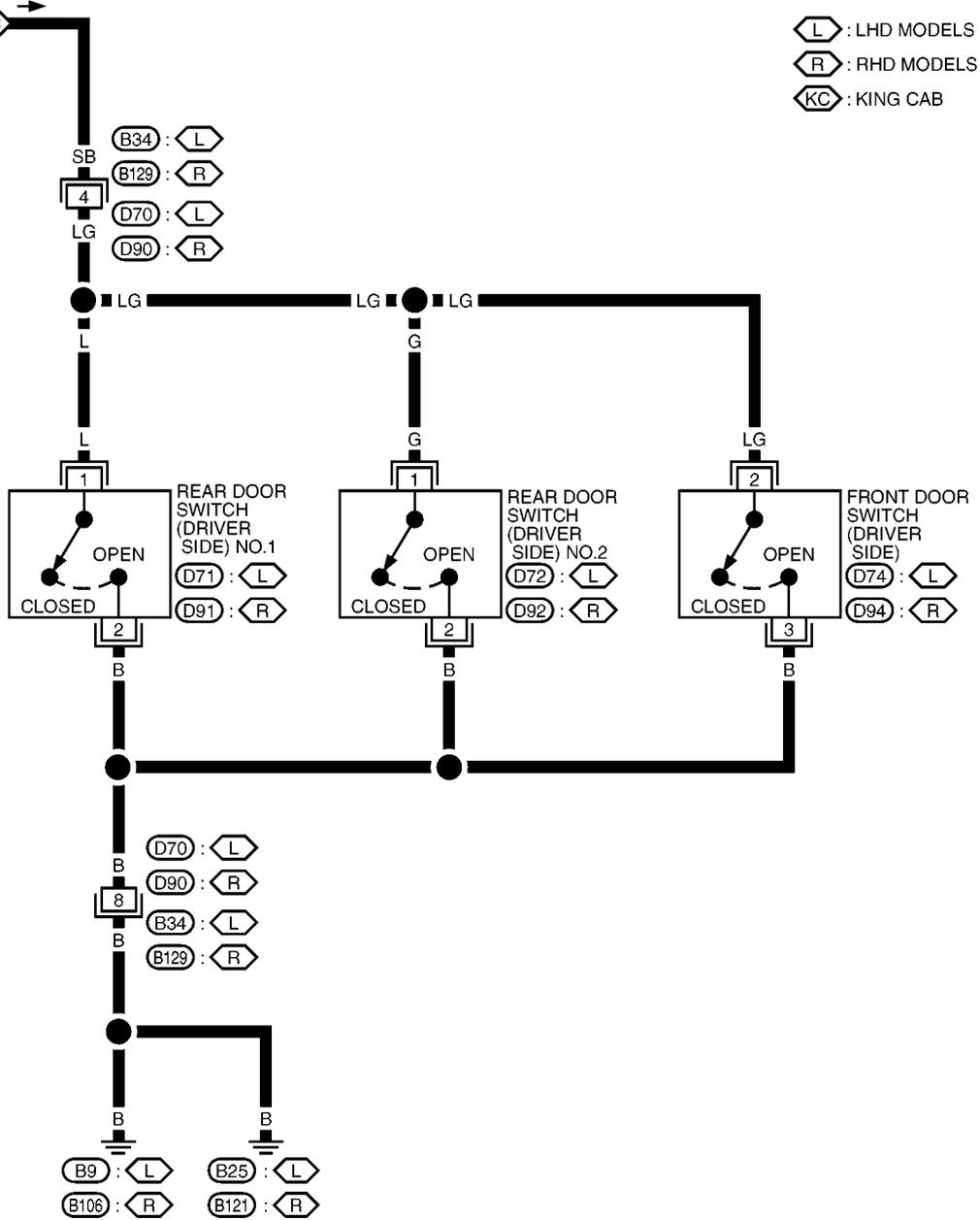
REFER TO THE FOLLOWING.
(M1), (M92) - SUPER MULTIPLE JUNCTION (SMJ)

INTERIOR ROOM LAMP

LT-INT/L-03

- : LHD MODELS
- : RHD MODELS
- : KING CAB

PRECEDING PAGE



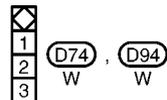
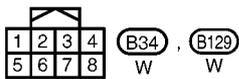
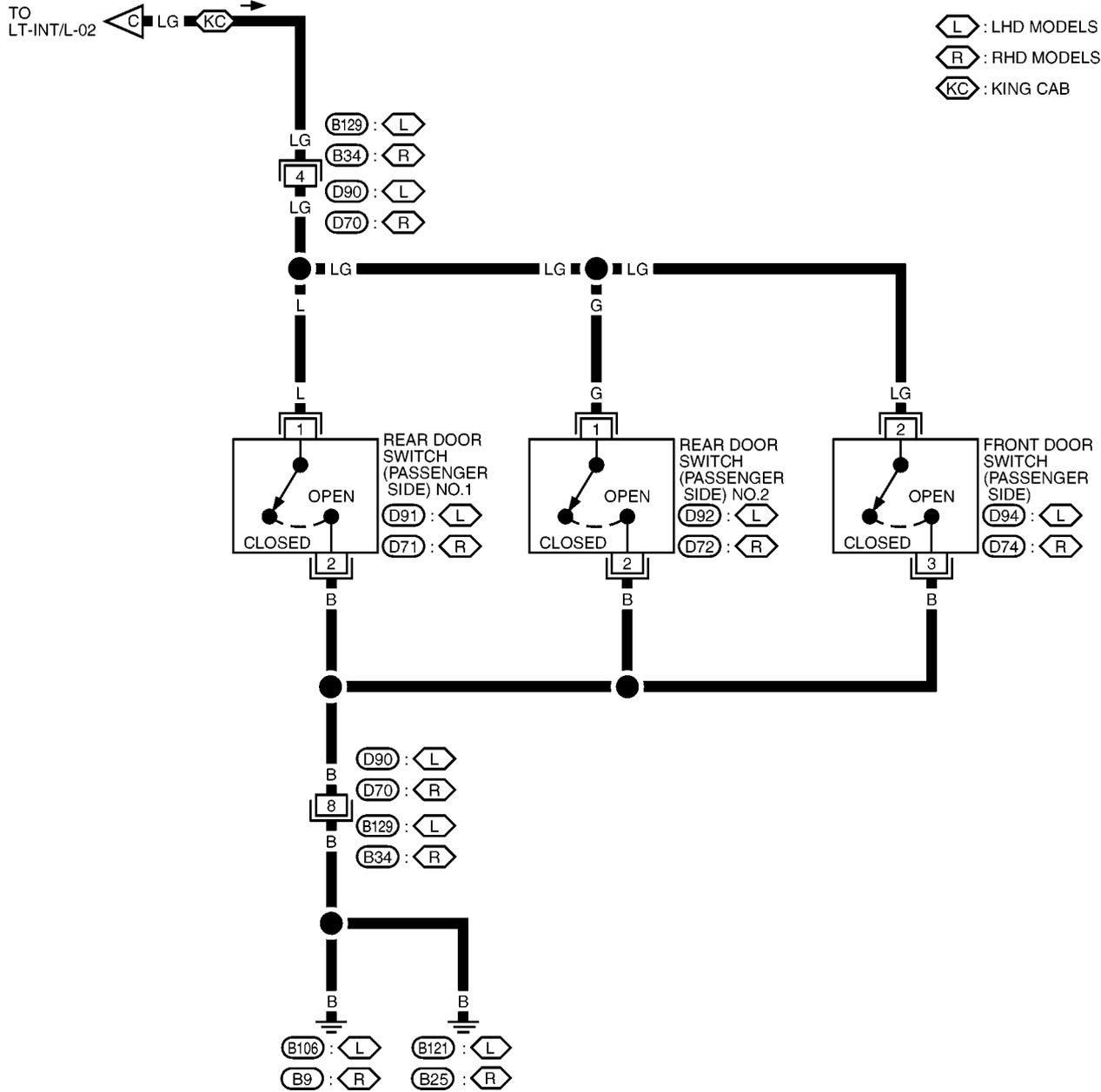
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INTERIOR ROOM LAMP

LT-INT/L-04

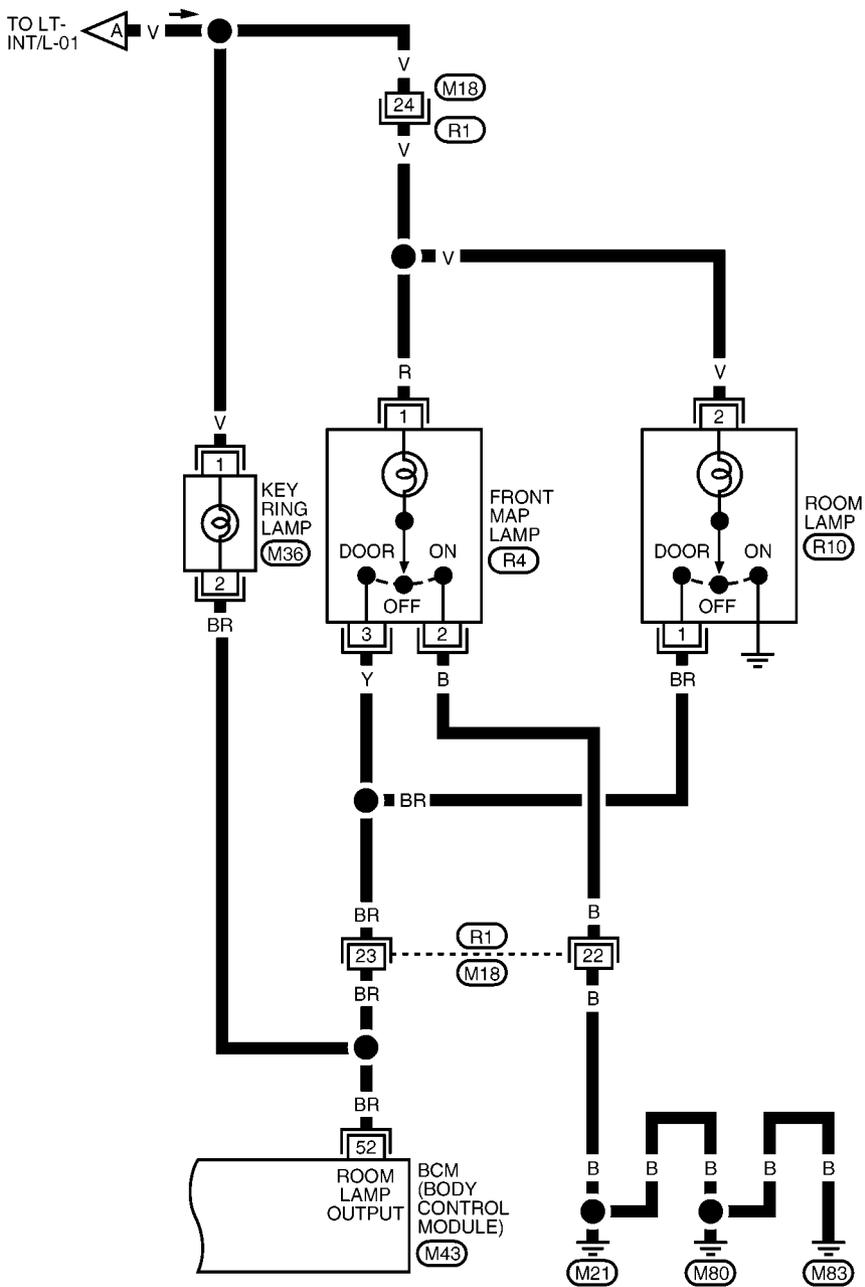
- : LHD MODELS
- : RHD MODELS
- : KING CAB



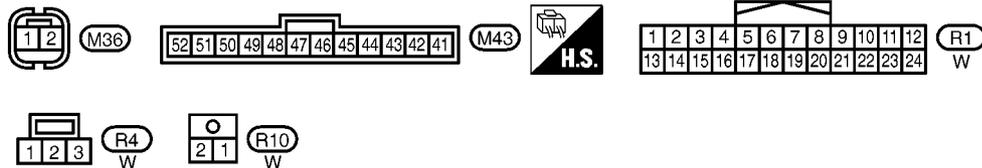
MKWA3891E

INTERIOR ROOM LAMP

LT-INT/L-05



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MKWA3588E

INTERIOR ROOM LAMP

Terminals and Reference Values for BCM

EKS00P96

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
3	Y	Ignition switch (ON)	ON	—		Battery voltage
5	R	Key switch signal	OFF	Vehicle key is removed		Approx. 0V
				Vehicle key is inserted		Battery voltage
12	L	Door switch (RR) signal*1	OFF	Rear door switch RH	ON (open)	Approx. 0V
					OFF (closed)	
14	LG	Door switch (AS) signal	OFF	Front door switch (passenger side), rear door switch (passenger side) No.1*2, rear door switch (passenger side) No.2*2	ON (open)	Approx. 0V
					OFF (closed)	
15	SB	Door switch (DR) signal	OFF	Front door switch (driver side), rear door switch (driver side) No.1*2, rear door switch (driver side) No.2*2	ON (open)	Approx. 0V
					OFF (closed)	
16	P	Door switch (RL) signal*1	OFF	Rear door switch LH	ON (open)	Approx. 0V
					OFF (closed)	
21	P	CAN – L	—	—		—
22	L	CAN – H	—	—		—
41	Y	Battery power supply	OFF	—		Battery voltage
42	V	Map lamp power supply	OFF	Each map lamp switch in door position	Any door switch ON (open)	Approx. 0V
					Any door switch OFF (closed)	Battery voltage
52	BR	Map lamp signal	OFF	Each map lamp switch in door position	Any door switch ON (open)	Approx. 0V
					Any door switch OFF (closed)	Battery voltage
55	B	Ground	ON	—		Approx. 0V
57	W	Battery power supply	OFF	—		Battery voltage

INTERIOR ROOM LAMP

*1: Double cab, *2: King cab

How to Proceed With Trouble Diagnosis

EKS00P97

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-145, "System Description"](#) .
3. Carry out the Preliminary Check. Refer to [LT-155, "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

EKS00P98

INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES OR FUSIBLE LINK

Check for blown fuses or fusible link.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	G
		21
		22
	Ignition switch ON or START position	1

Refer to [LT-149, "Wiring Diagram — INT/L —"](#) .

OK or NG

OK >> GO TO 2.

NG >> If fuse or fusible link is blown, be sure to eliminate cause of malfunction before installing new fuse or fusible link. Refer to [PG-4, "POWER SUPPLY ROUTING CIRCUIT"](#) .

2. CHECK POWER SUPPLY CIRCUIT

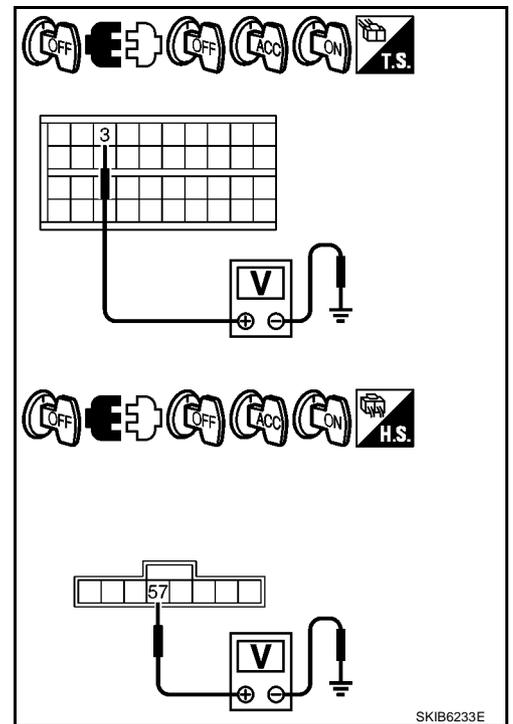
1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check voltage between BCM harness connector and ground.

Terminal (+)		Terminal (-)	Ignition switch position		
BCM connector	Terminal		OFF	ACC	ON
M42	3	Ground	0V	0V	Battery voltage
M44	57		Battery voltage	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.



SKIB6233E

INTERIOR ROOM LAMP

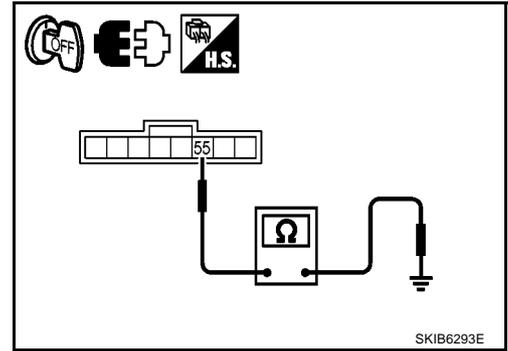
3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

BCM connector	Terminal	Ground	Continuity
M44	55		Yes

OK or NG

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



INTERIOR ROOM LAMP

CONSULT-II Function

EKS00P99

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

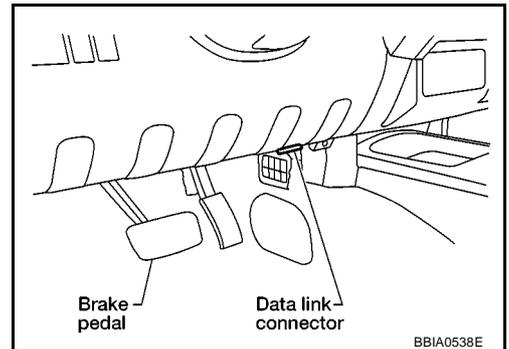
BCM diagnosis part	Diagnosis mode	Description
INT LAMP	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.

CONSULT-II OPERATION

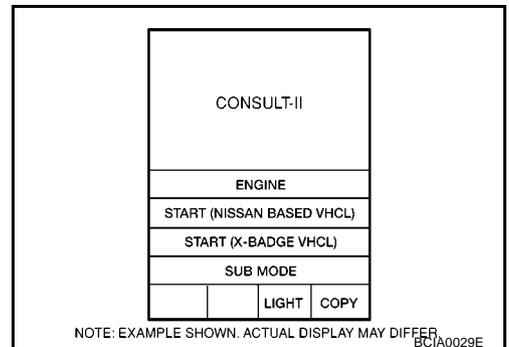
CAUTION:

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.

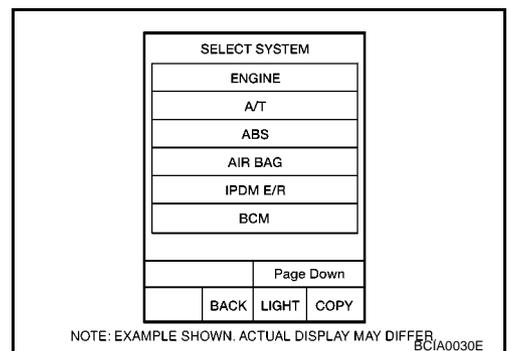
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, and then turn ignition switch ON.



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

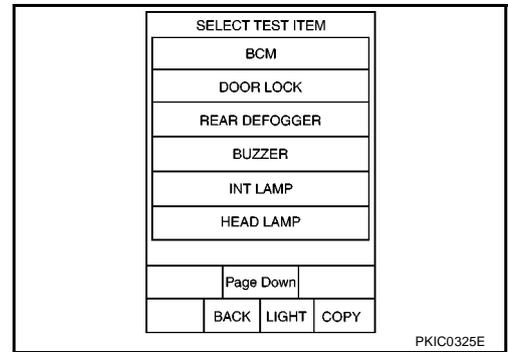


3. Touch "BCM" on "SELECT SYSTEM" screen.
If "BCM" is not indicated, refer to [GI-50, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



INTERIOR ROOM LAMP

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's door is released (unlocked).	ON/OFF
ROOM LAMP ON TIME SET	The time in order to escalate illumination can be selected 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 selected 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. When "ALL SIGNALS" is selected, all the items will be monitored. When "SELECTION FROM MENU" is selected, touch items to be monitored.
5. Touch "START".
6. Touch "RECORD" while monitoring, then the status of the monitored item can be recorded. To stop recording, touch "STOP".

INTERIOR ROOM LAMP

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's 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's door switch signal.
DOOR SW-RR "ON/OFF"	Displays "Door open (ON)/Door closed (OFF)" status, determined from rear door switch RH signal.
DOOR SW-RL "ON/OFF"	Displays "Door open (ON)/Door closed (OFF)" status, determined from rear 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.

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 "OFF" deactivates the operation.

Display Item List

Test item	Description
INT LAMP	Interior room lamp can be operated by any ON-OFF operations.

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C
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INTERIOR ROOM LAMP

EKS00P9A

Map Lamp Control Does Not Operate

1. CHECK EACH SWITCH

1. Select "BCM" on CONSULT-II. Select "INT LAMP" on "SELECT TEST ITEM" screen.
2. Select "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Make sure switches turn ON-OFF linked with switch operation. Refer to [LT-158, "DATA MONITOR"](#) for switches and their functions.

DATA MONITOR	
MONITOR	
IGN ON SW	ON
KEY ON SW	ON
DOOR SW-DR	ON
DOOR SW-AS	ON
DOOR SW-RR	OFF
DOOR SW-RL	OFF
BACK DOOR SW	OFF
KEY CYL LK-SW	OFF
KEY CYL UN-SW	OFF
Page Down	
RECORD	
MODE	BACK
LIGHT	COPY

PKIB3532E

OK or NG

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

2. ACTIVE TEST

1. Set switches of front map lamp, rear map lamp and cargo lamp to DOOR position.
2. Select "BCM" on CONSULT-II. Select "INT LAMP" on "SELECT TEST ITEM" screen.
3. Select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
4. Touch "ON" screen.
5. Check operations of front map lamp, rear map lamp and cargo lamps.

Front map lamp, rear map lamp and cargo lamps operate normally.

ACTIVE TEST	
INT LAMP	ON
OFF	
MODE	BACK
LIGHT	COPY

PKIA6366E

OK or NG

- OK >> Replace BCM. Refer to [BCS-17, "Removal and Installation of BCM"](#) .
 NG >> GO TO 3.

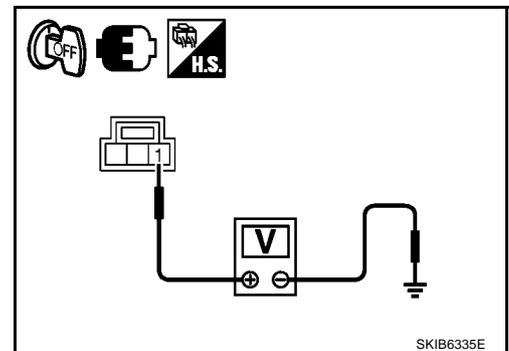
3. CHECK INTERIOR FRONT MAP LAMP INPUT

1. Turn ignition switch OFF.
2. Check voltage between front map lamp harness connector and ground.

Terminal		(-)	Voltage
(+)			
Front map lamp connector	Terminal		
R4	1	Ground	Battery voltage

OK or NG

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



INTERIOR ROOM LAMP

4. CHECK INTERIOR ROOM LAMP CIRCUIT

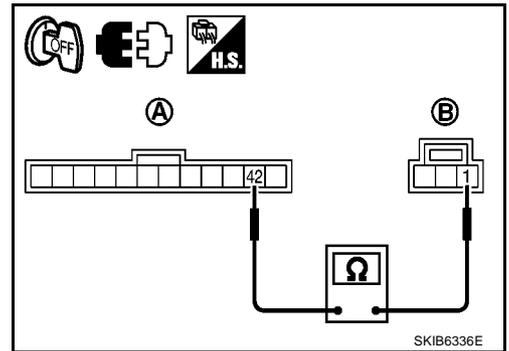
1. Disconnect BCM connector and front map lamp connector.
2. Check continuity between BCM harness connector (A) and front map lamp harness connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
M43	42	R4	1	Yes

OK or NG

OK >> Replace BCM if interior lamp does not work after setting the connector again. Refer to [BCS-17, "Removal and Installation of BCM"](#) .

NG >> Repair harness or connector.



5. CHECK INTERIOR ROOM LAMP CIRCUIT

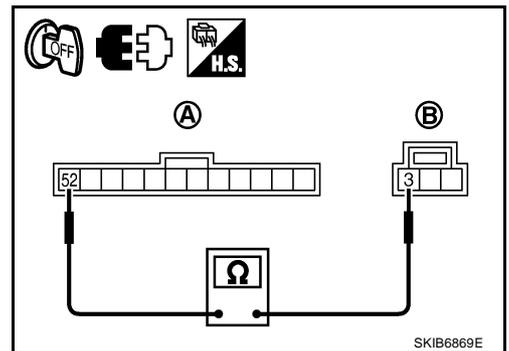
1. Disconnect BCM connector and front map lamp connector.
2. Check continuity between BCM harness connector (A) and front map lamp harness connector (B).

A		B		Continuity
Connector	Terminal	Connector	Terminal	
M43	52	R4	3	Yes

OK or NG

OK >> Replace BCM if interior lamp does not work after setting the connector again. Refer to [BCS-17, "Removal and Installation of BCM"](#) .

NG >> Repair harness or connector between BCM and map lamp.



All Interior Room Lamps Do Not Operate

1. CHECK POWER SUPPLY CIRCUIT

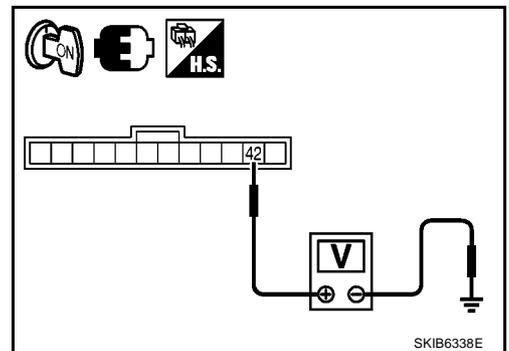
1. All interior room lamp switches are OFF.
2. Turn ignition switch ON.
3. Check voltage between BCM harness connector and ground.

Terminal (+)		Terminal (-)	Voltage
BCM connector	Terminal		
M43	42	Ground	Battery voltage

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-17, "Removal and Installation of BCM"](#) .



ILLUMINATION

System Description

EKS00P8V

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 position, 2ND position or AUTO position (headlamp is ON) 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) through the CAN communication. 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

- to ignition relay (located in IPDM E/R) and
- to tail lamp relay (located in IPDM E/R), from battery directly,
- through 50A fusible link (letter G, located in fuse and fusible link box)
- to BCM terminal 57,
- through 20A fuse (No. 52, located in IPDM E/R) and
- through 20A fuse (No. 53, located in IPDM E/R)
- to CPU (located in IPDM E/R),
- through 10A fuse [No.19, located in fuse block (J/B)]
- to combination meter terminal 3.

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

- to ignition relay (located in IPDM E/R),
- through 10A fuse [No. 1, located in fuse block (J/B)]
- to BCM terminal 3,
- through 10A fuse [No. 14, located in fuse block (J/B)]
- to combination meter 16.

Ground is supplied

- to BCM terminal 55 and
- to combination meter terminal 23
- through grounds M21, M80 and M83,
- to IPDM E/R terminals 38 and 59
- through grounds E21, E41 and E61.

ILLUMINATION OPERATION BY LIGHTING SWITCH

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

- through 10A fuse (No. 37, located in IPDM E/R)
- through IPDM E/R terminal 57
- to hazard switch (illumination) terminal 3
- to 4WD shift switch (illumination) terminal 7 (with 4-wheel drive)
- to front air control (illumination) terminal 8
- to audio unit (illumination) terminal 2 (1CD player)
- to audio unit (illumination) terminal 8 (6CD player)
- to AV switch (illumination) terminal 3 (with NAVI)
- to audio unit (illumination) terminal 29 (with NAVI)
- to glove box lamp terminal 1
- to A/T device (illumination) terminal 3 (with A/T)
- to heat up switch (illumination) terminal 5
- to DIFF LOCK switch (illumination) terminal 4 (with DIFF LOCK)
- to heated seat switch (driver side) (illumination) terminal 5 (with heated seats)
- to heated seat switch (passenger side) (illumination) terminal 5 (with heated seats)

ILLUMINATION

- to cigarette lighter (illumination) terminal 1
- to ashtray (illumination) terminal 1
- to headlamp washer switch (illumination) terminal 3
- to headlamp aiming switch (illumination) terminal 3 and
- to NAVI control unit (illumination) terminal 61 (with NAVI).

Ground is supplied

- to hazard switch (illumination) terminal 4
- to 4WD shift switch (illumination) terminal 8 (with 4-wheel drive)
- to front air control (illumination) terminal 9
- to AV switch (illumination) terminal 4 (with NAVI)
- to audio unit (illumination) terminal 28 (with NAVI)
- to DIFF LOCK switch (illumination) terminal 5 (with DIFF LOCK)
- to heated seat switch (driver side) (illumination) terminal 6 (with heated seats) and
- to heated seat switch (passenger side) (illumination) terminal 6 (with heated seats)
- through combination meter terminal 22
- through combination meter terminal 23
- through ground M21, M80 and M83,
- to glove box lamp terminal 2
- to A/T device (illumination) terminal 5 (with A/T)
- to heat up switch (illumination) terminal 6
- to ashtray (illumination) terminal 2
- to headlamp washer switch (illumination) terminal 4 and
- to headlamp aiming switch (illumination) terminal 4
- through ground M21, M80 and M83,
- to audio unit (illumination) (1CD and 6CD player)
- through case ground of audio unit,
- to cigarette lighter (illumination)
- through case ground of cigarette lighter,
- to NAVI control unit (illumination) terminal 1 (with NAVI)
- through ground B106 and B121.

With power and ground supplied, illumination lamps illuminate.

CAN Communication System Description

Refer to [LAN-23, "CAN COMMUNICATION"](#) .

CAN Communication Unit

Refer to [LAN-30, "CAN Communication Unit"](#) .

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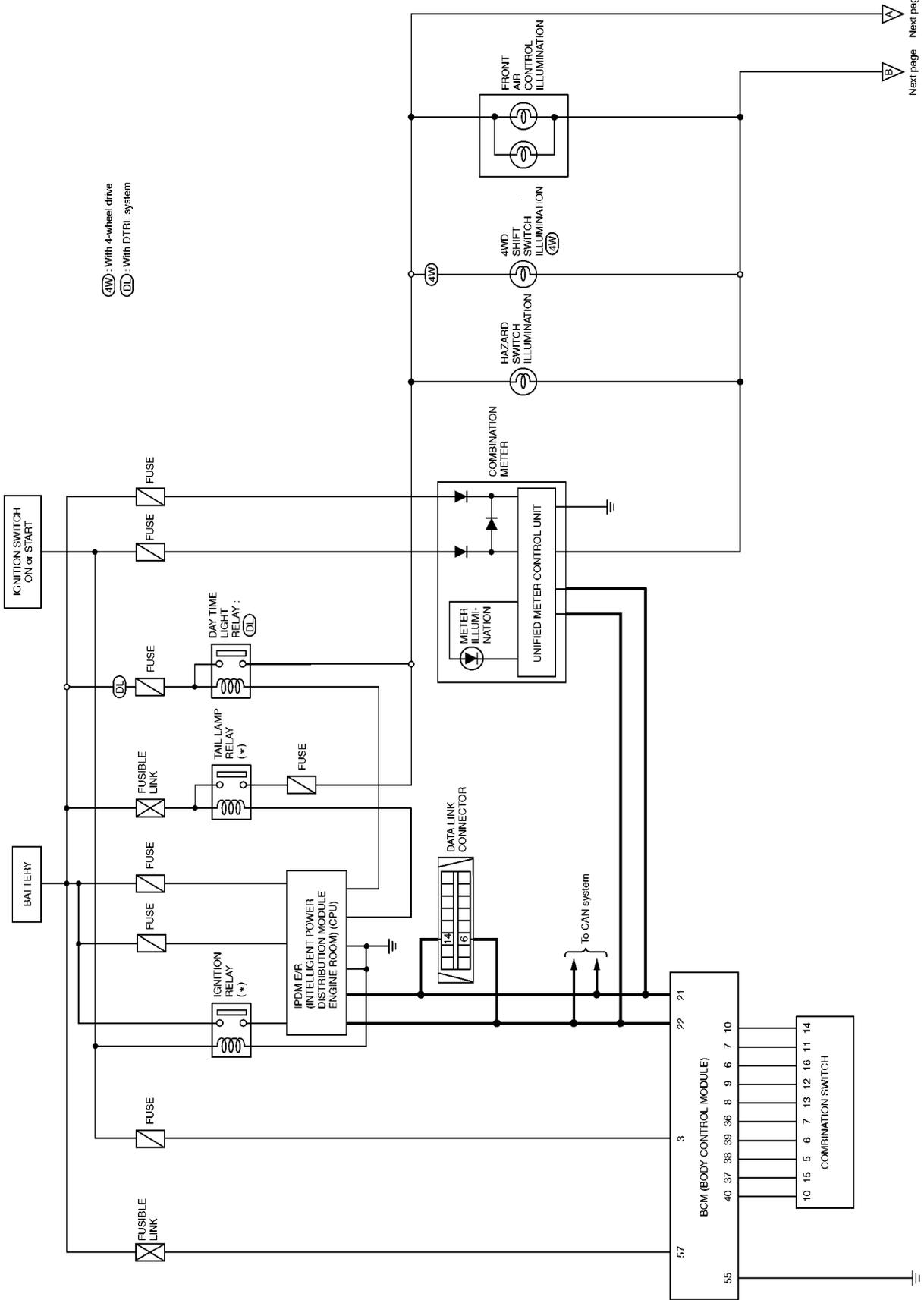
M

EKS00P8X

ILLUMINATION

Schematic

EKS00P8Y



*: This relay is build into the IPDM E/R (intelligent power distribution module engine room).

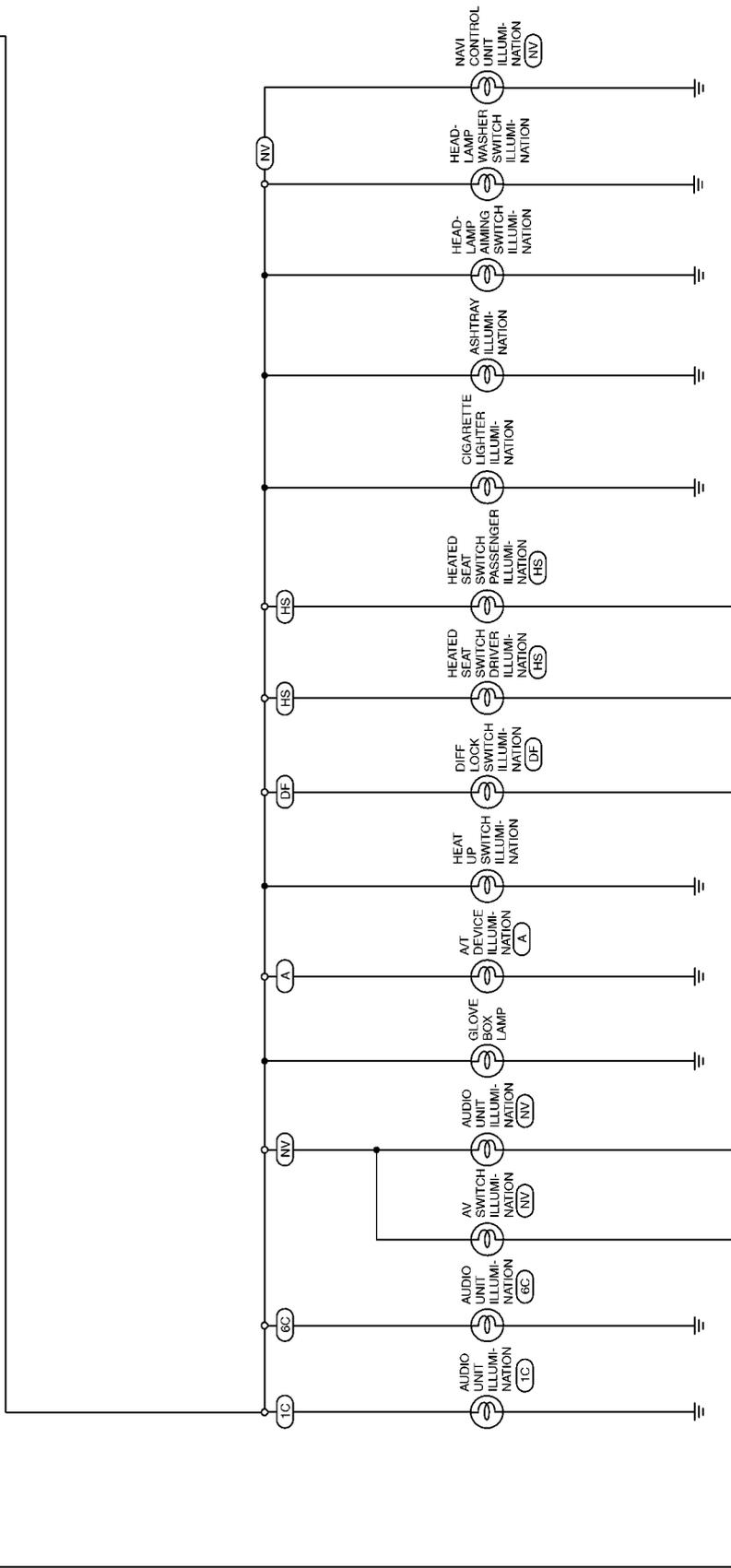
Next page

MKWA3626E

ILLUMINATION

Preceding page
A

Preceding page
B



- (A) : With A/T
- (DF) : With Diff Lock
- (NV) : With NAVI
- (HS) : With heated seat
- (TC) : With TCD player
- (6C) : With 6CD player

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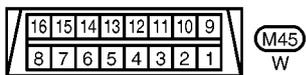
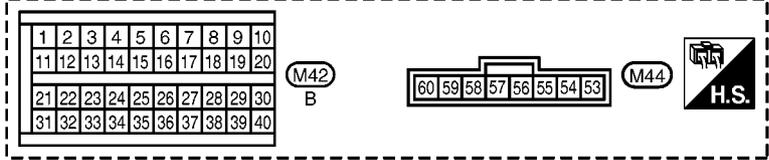
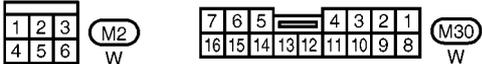
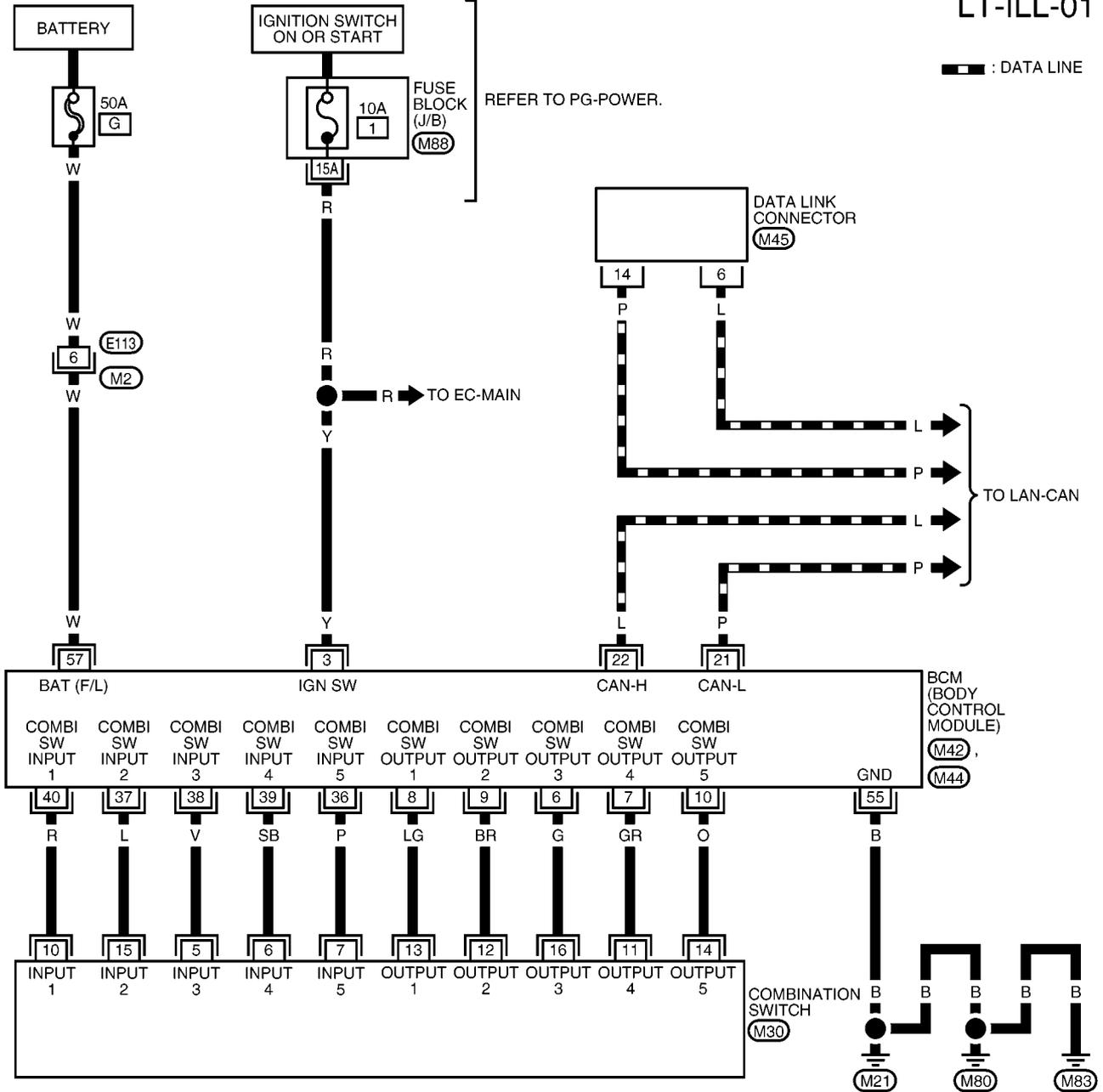
ILLUMINATION

EKS00P8Z

Wiring Diagram — ILL —

LT-ILL-01

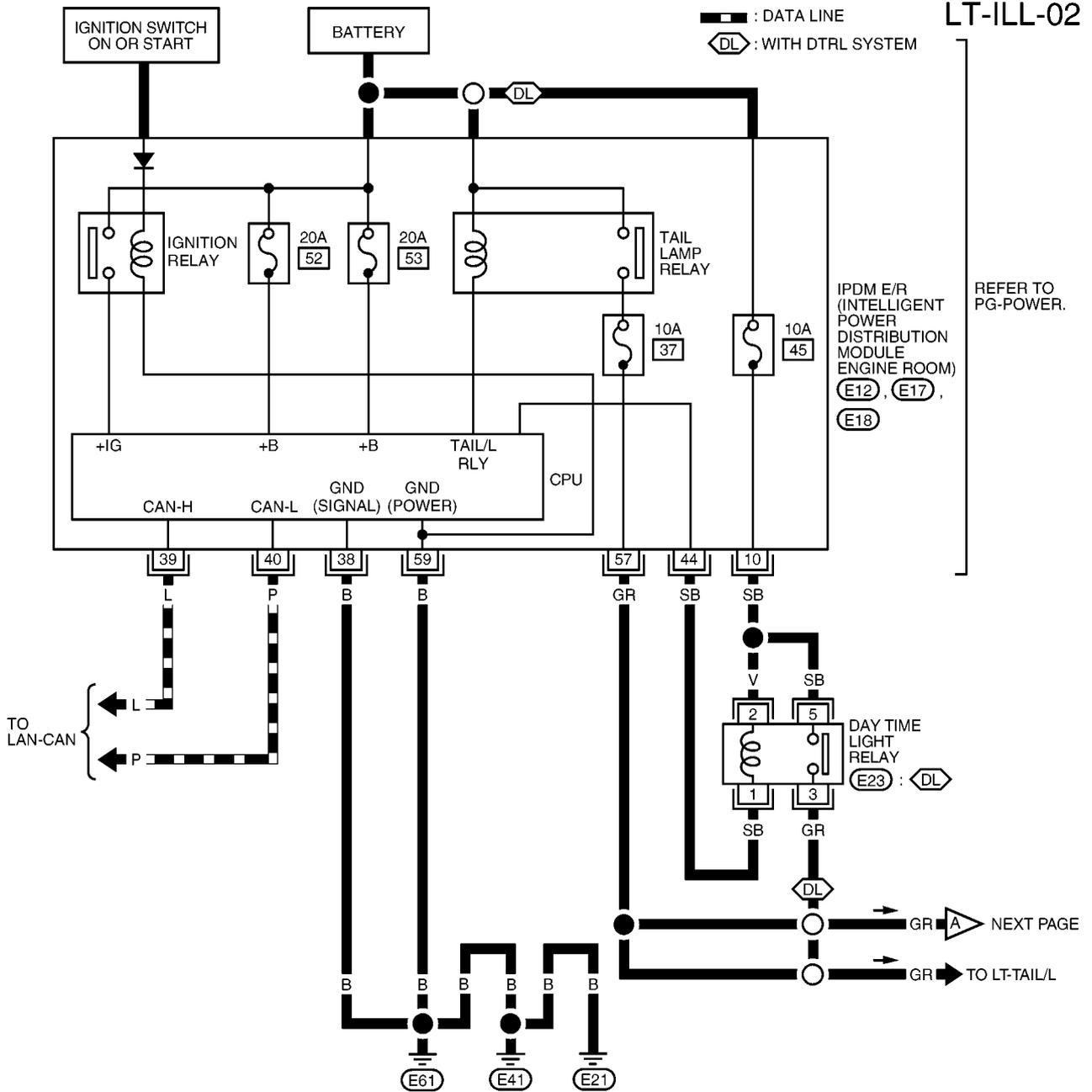
▬ : DATA LINE



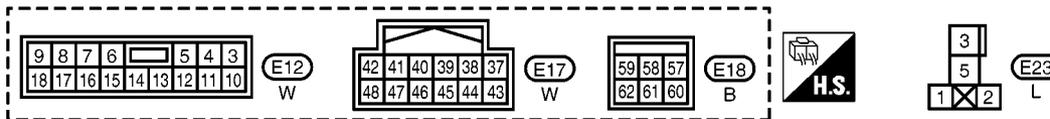
REFER TO THE FOLLOWING.
 (M88) - FUSE BLOCK-
 JUNCTION BOX (J/B)

ILLUMINATION

LT-ILL-02



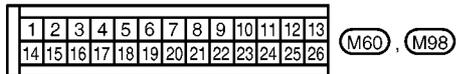
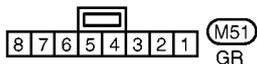
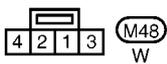
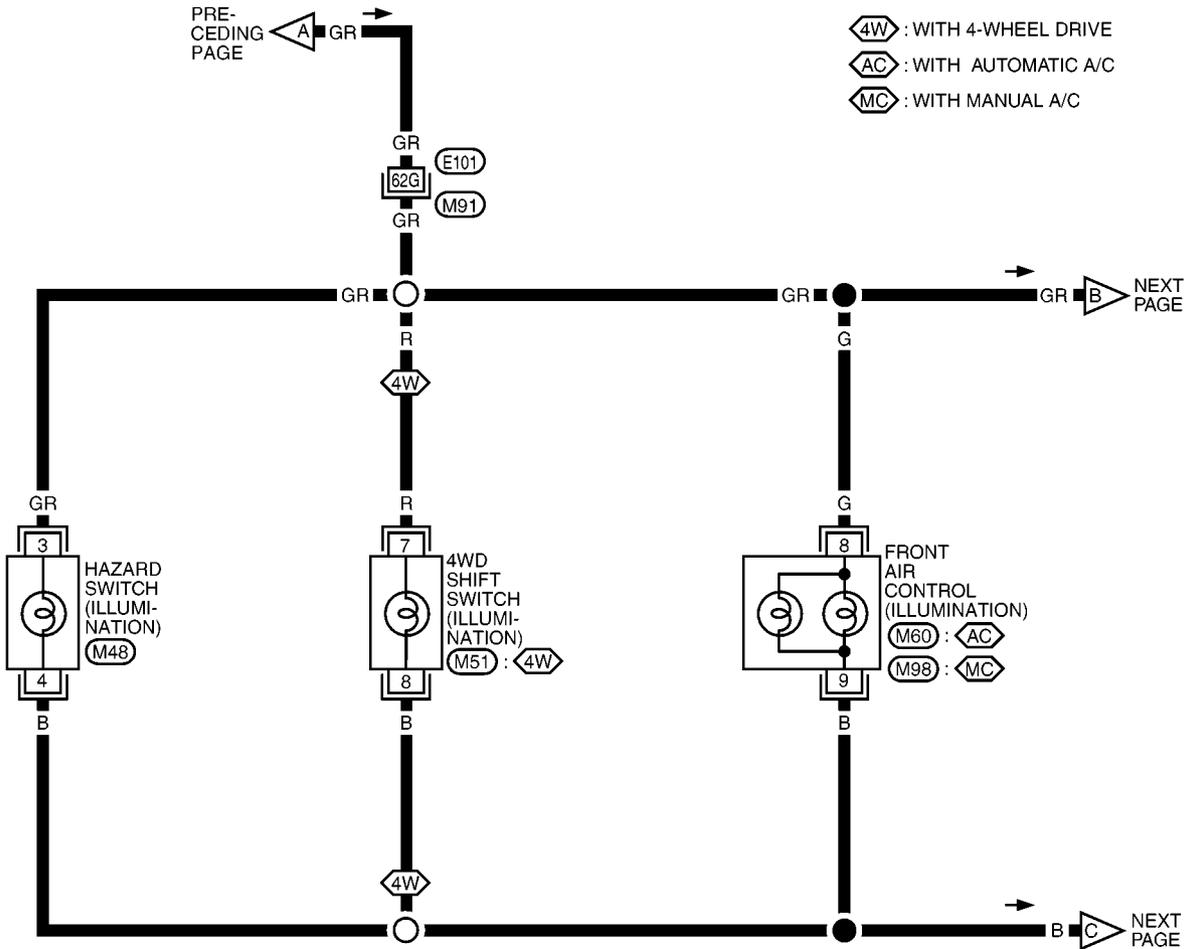
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MKWA3629E

ILLUMINATION

LT-ILL-03



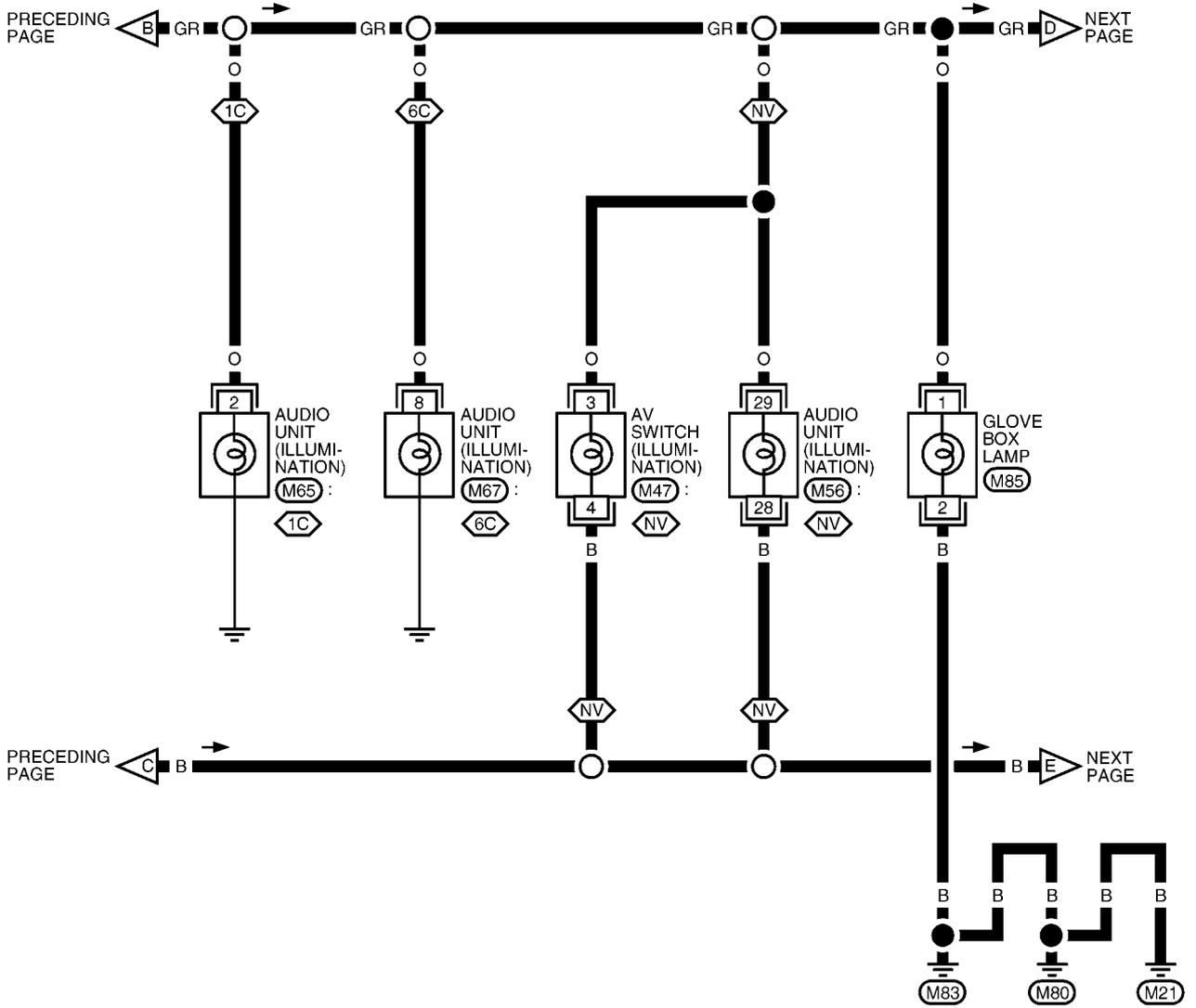
REFER TO THE FOLLOWING.
 (M91) -SUPER MULTIPLE JUNCTION (SMJ)

MKWA3630E

ILLUMINATION

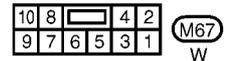
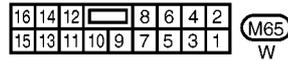
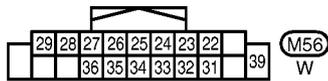
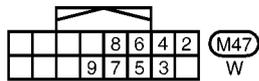
LT-ILL-04

- : WITH 1CD PLAYER
- : WITH 6CD PLAYER
- : WITH NAVI



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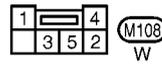
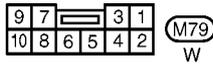
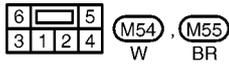
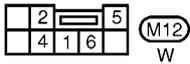
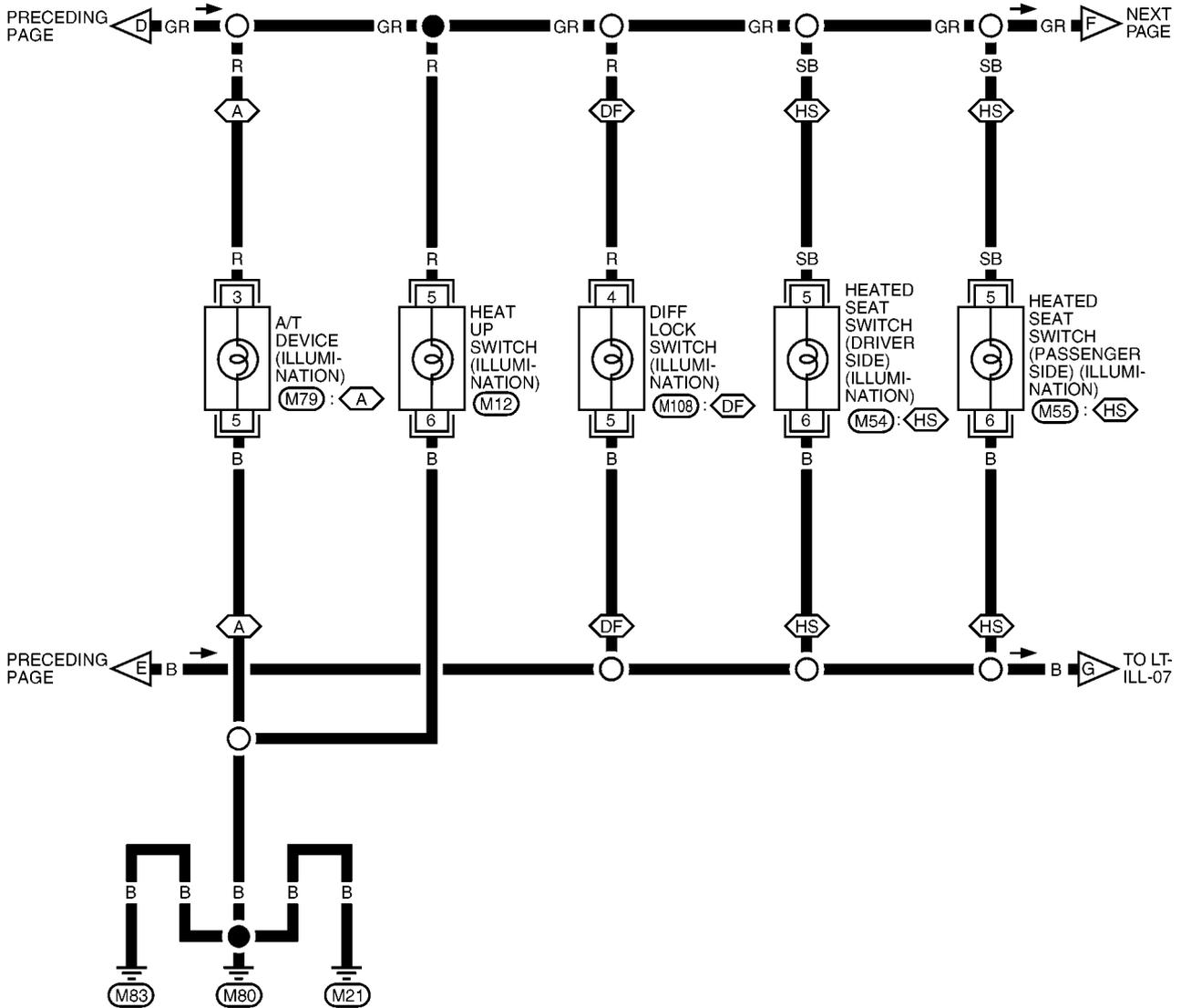


MKWA3631E

ILLUMINATION

LT-ILL-05

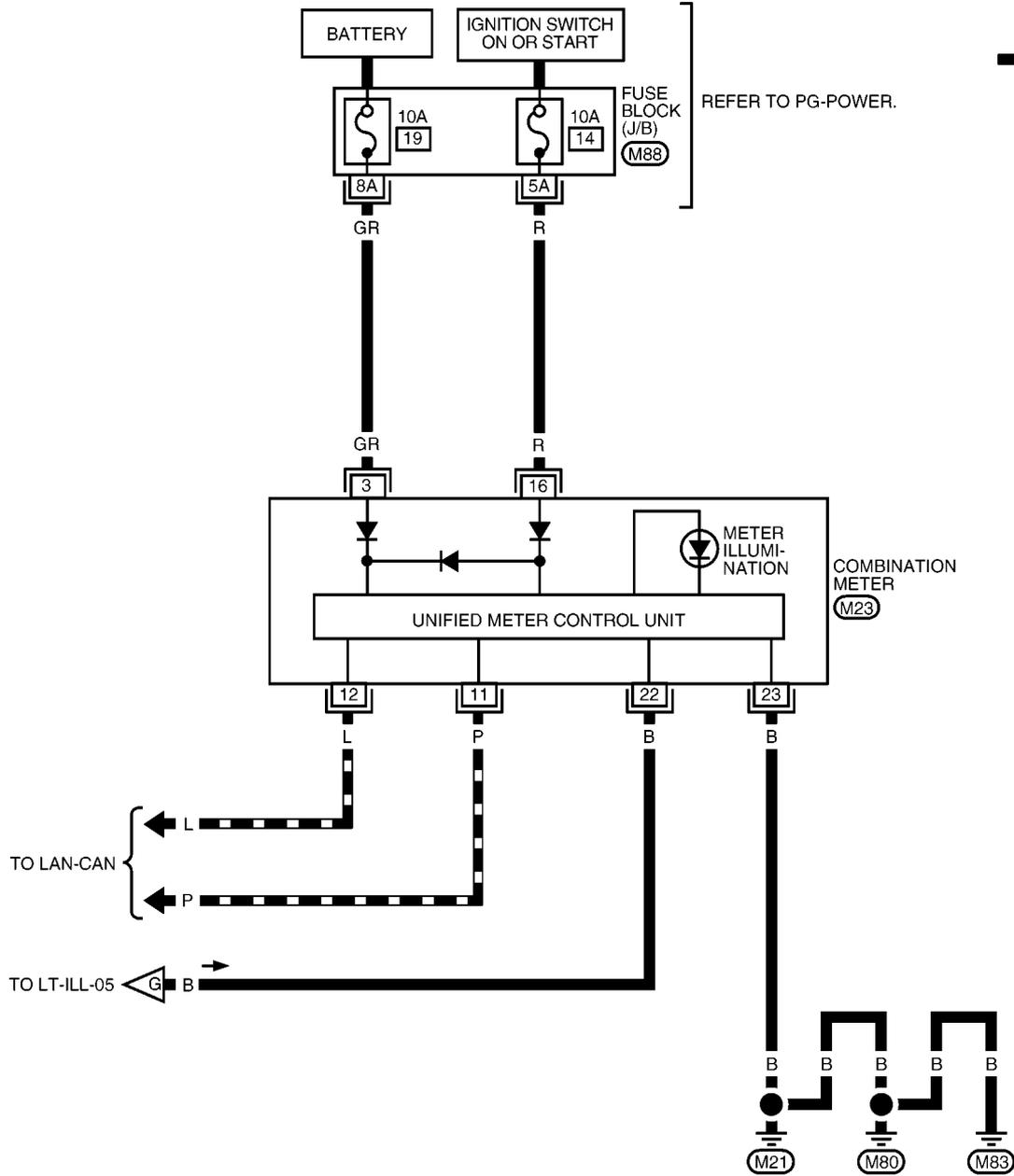
- (A) : WITH A/T
- (HS) : WITH HEATED SEATS
- (DF) : WITH DIFF LOCK



ILLUMINATION

LT-ILL-07

▬ : DATA LINE



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	(M23)
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	W

REFER TO THE FOLLOWING.

(M88) - FUSE BLOCK-JUNCTION BOX (J/B)

BULB SPECIFICATIONS

BULB SPECIFICATIONS

PFP:26297

Headlamp

EKS00P82

Item	Wattage (W)
High/Low	60/55 (H4LL)

Exterior Lamp

EKS00P83

Item	Wattage (W)	
Front combination lamp	Turn signal lamp	21
	Clearance lamp	5
Rear combination lamp	Stop/Tail lamp	21/5
	Turn signal lamp	21
	Back- up lamp	16
	Rear fog lamp	21
Side turn signal lamp	5	
Front fog lamp	55	
License plate lamp	5	

Interior Lamp/Illumination

EKS00P84

Item	Wattage (W)
Glove box lamp	3.4
Room/Map lamp	6
A/T device lamp	3

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BULB SPECIFICATIONS
