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PRECAUTIONS

PRECAUTIONS PFP:00011

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

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

WARNING:

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

Precautions for Battery Service

AKS003RF

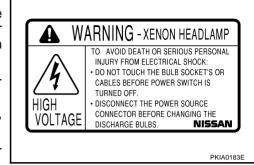
Before disconnecting the battery, lower both the driver and passenger windows. This will prevent any interference between the window edge and the vehicle when the door is opened/closed. During normal operation, the window slightly raises and lowers automatically to prevent any window to vehicle interference. The automatic window function will not work with the battery disconnected.

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PRECAUTIONS

General Precautions for Service Operations

- Never work with wet hands.
- Xenon headlamp includes high voltage generating part. Be sure to disconnect battery negative cable (negative terminal) or power fuse before removing, installing, or touching the xenon headlamp (including lamp bulb).
- Turn the lighting switch OFF before disconnecting and connecting the connector.
- When turning the xenon headlamp on and while it is illuminated, never touch the harness, bulb, and socket of the headlamp.
- 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.
- Install the xenon headlamp bulb socket correctly. If it is installed improperly, high-voltage leak or corona discharge may occur that can melt the bulb, connector, and housing. Do not illuminate the xenon headlamp bulb out of the headlamp housing. Doing so can cause fire and harm your eyes.
- 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.
- When adjusting the headlamp aiming, turn the aiming adjustment screw only in the tightening direction. (If it is necessary to loosen the screw, first fully loosen the screw, and then turn it in the tightening direction.)
- Do not use organic solvent (paint thinner or gasoline) to clean lamps and to remove old sealant.

Wiring Diagrams and Trouble Diagnosis

AKS000SF

AKS000SE

When you read wiring diagrams, refer to the following:

- Refer to GI-15, "How to Read Wiring Diagrams" in GI section.
- Refer to PG-4, "POWER SUPPLY ROUTING CIRCUIT" for power distribution in PG section.

When you perform trouble diagnosis, refer to the following:

- Refer to GI-11, "HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSES" in GI section.
- Refer to GI-27, "How to Perform Efficient Diagnosis for an Electrical Incident" in GI section.

▲ WARNING 傷害となる感電の恐れがあるので、下記を守って下さい。 ・電源スイッチをOFFにしてから電源コネクタを脱棄して下さい ・分解したり、回路やハーネスを改造しないで下さい。 ・分解したり、回路やハーネスを成直しないできるい。 ・電気テスターを用いて回路診断とないでするい。 「O AVOID DEATH OR SERIOUS PERSONAL NUINY FROM ELECTRICAL SHOCK: ・DO NOT TOUCH THE POWER SOURCE CONNECTORS BEFORE THE POWER SWITCH IS TURNED OFF DO NOT DISASSEMBLE THIS DEVICE - DO NOT OHECK THE CIRCUIT USING AN ELECTRICAL TESTER. 高電圧 HIGH VOLTAGE STANLEY ELECTRIC CO.,LTD

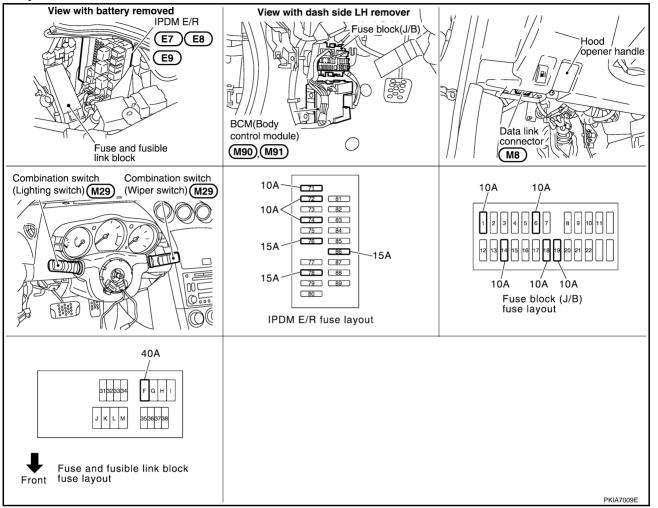
EL-3422D

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Component Parts and Harness Connector Location

AKS009NG

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System Description

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

OUTLINE

Power is supplied at all times

- to headlamp high relay [located in IPDM E/R (intelligent power distribution module engine room)] and
- to headlamp low relay [located in IPDM E/R (intelligent power distribution module engine room)]
- through 40A fusible link (letter F, located in fuse and fusible link block)
- to BCM (body control module) terminal 55
- through 10A fuse [No.18, located in fuse block (J/B)]
- to BCM (body control module) terminal 42
- through 15A fuse [No.78 located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)]
- through 10A fuse [No.71,located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)].

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

- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)]
- through 10A fuse [No. 1, located in fuse block (J/B)]
- to BCM (body control module) terminal 38.

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

- through 10A fuse [No. 6, located in fuse block (J/B)]
- to BCM (body control module) terminal 11.

Ground is supplied

- to BCM (body control module) terminal 52
- through grounds M30 and M66
- to IPDM E/R (Intelligent power distribution module engine room) terminals 38 and 60
- through grounds E17, E43 and F152.

Low Beam Operation

With lighting switch in 2ND position, BCM receives input signal from combination switch reading function. (Refer to <u>BCS-3, "COMBINATION SWITCH READING FUNCTION"</u>) BCM communicates Low beam request signal to IPDM E/R across CAN communication lines. CPU in IPDM E/R controls headlamp low relay coil, which when energized, power is supplied

- through 15A fuse [No. 76, located in IPDM E/R]
- through IPDM E/R terminal 20
- to front combination lamp RH terminal 7, and
- through 15A fuse [No. 86, located in IPDM E/R]
- through IPDM E/R terminal 30
- to front combination lamp LH terminal 7.

Ground is supplied

- to front combination lamp RH terminal 8
- through grounds E17, E43 and F152
- to front combination lamp LH terminal 8
- through grounds E17, E43 and F152.

With power and ground supplied, low beam headlamps illuminate.

High Beam Operation/Flash-to-Pass Operation

With lighting switch in 2ND position and placed in HIGH or PASS position, BCM receives input signal requesting headlamp high beams to illuminate. High beam request signal is communicated to IPDM E/R across CAN communication lines. CPU in IPDM E/R controls headlamp high relay coil, which when energized directs power

- through 15A fuse [No. 76, located in IPDM E/R]
- through IPDM E/R terminal 20
- to front combination lamp RH terminal 7, and
- through 15A fuse [No. 86, located in IPDM E/R]
- through IPDM E/R terminal 30
- to front combination lamp LH terminal 7
- to 10A fuse [No. 72, located in IPDM E/R]
- through IPDM E/R terminal 27
- to front combination lamp RH terminal 3
- to 10A fuse [No. 74, located in IPDM E/R]
- through IPDM E/R terminal 28
- to front combination lamp LH terminal 3.

Ground is supplied

- to front combination lamp RH terminal 4
- through grounds E17,E43 and F152, and

- to front combination lamp LH terminal 4
- through grounds E17,E43 and F152.

With power and ground supplied, high beam headlamps illuminate.

Unified meter and A/C amp. receives signal from BCM across CAN communication lines, and then combination meter indicator illuminates high beam.

COMBINATION SWITCH READING FUNCTION

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

EXTERIOR LAMP BATTERY SAVER CONTROL

When combination switch (lighting switch) is in the 2ND position (ON), and ignition switch is turned from ON or ACC to OFF, battery saver control function is activated.

Under this condition, headlamps remain illuminated for 5 minutes, then headlamps are turned off. Exterior lamp battery saver control mode can be changed by function setting of CONSULT-II.

VEHICLE SECURITY SYSTEM

The vehicle security system will flash high beams if the system is triggered. Refer to <u>BL-129</u>, "VEHICLE SECURITY (THEFT WARNING) SYSTEM".

XENON HEADLAMP

Xenon type headlamp is adopted to low beam headlamps. Xenon bulbs do not use a filament. Instead, they produce light when a high voltage current is passed between two tungsten electrodes through a mixture of xenon (an inert gas) and certain other metal halides. In addition to added lighting power, electronic control of the power supply gives headlamps stable quality and tone color.

Following are some of the many advantages of xenon type headlamp.

- The light produced by headlamps is a white color comparable to sunlight that is easy on the eyes.
- Light output is nearly double that of halogen headlamps, affording increased area of illumination.
- The light features a high relative spectral distribution at wavelengths to which the human eye is most sensitive. This means that even in the rain, more light is reflected back from the road surface toward the vehicle, for added visibility.
- Power consumption is approximately 25 percent less than halogen headlamps, reducing battery load.

CAN Communication System Description

AKS009NS

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Unit

AKS009NT

Refer to LAN-5, "CAN Communication Unit".

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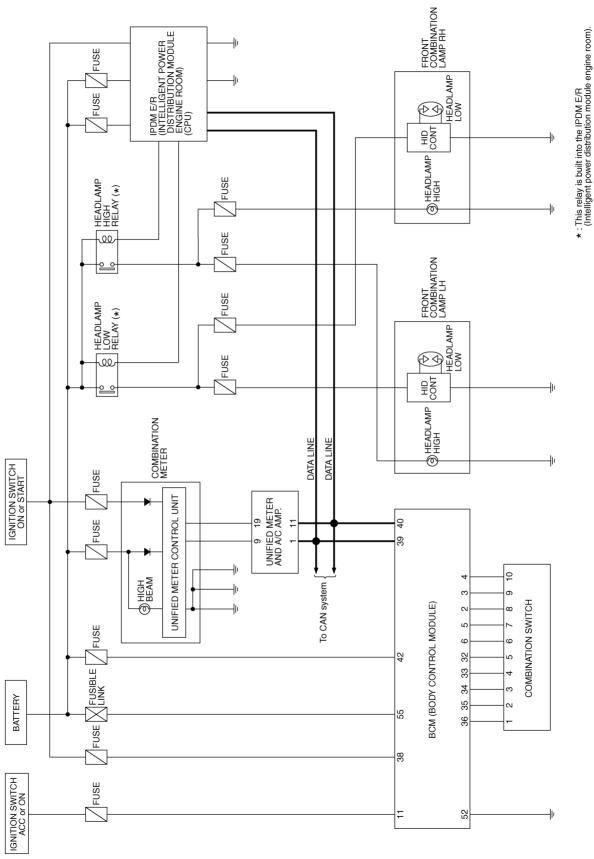
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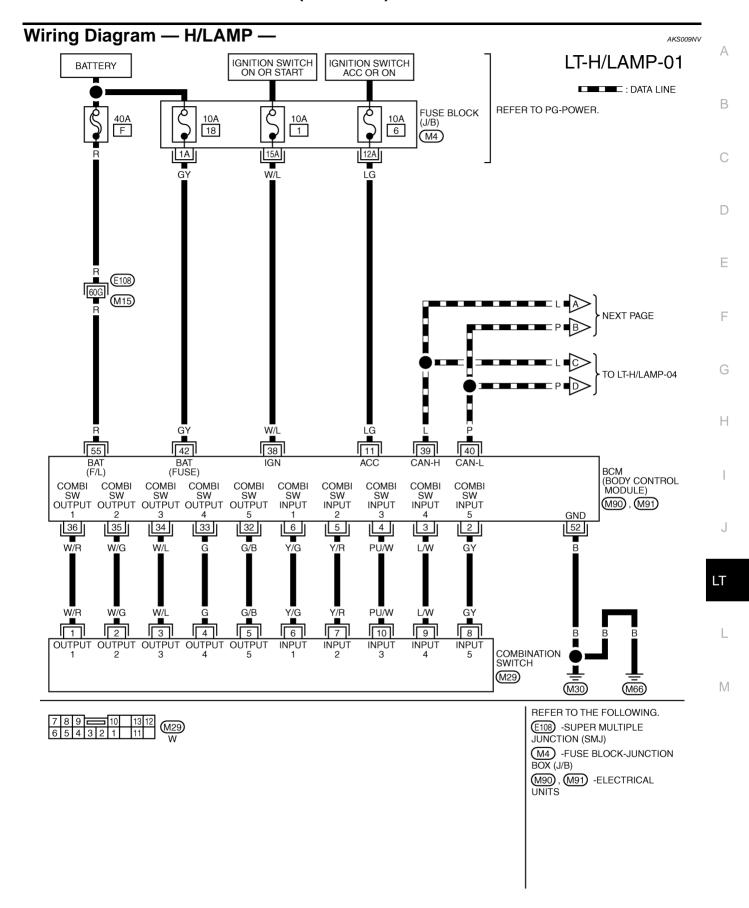
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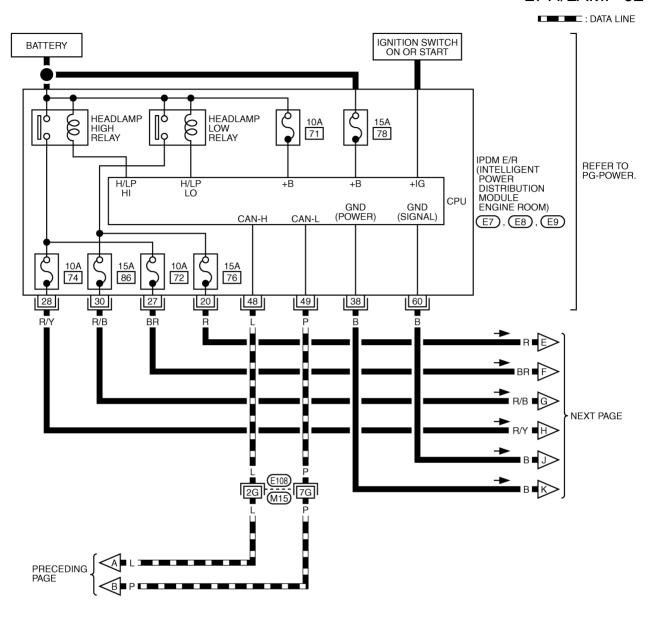
Schematic

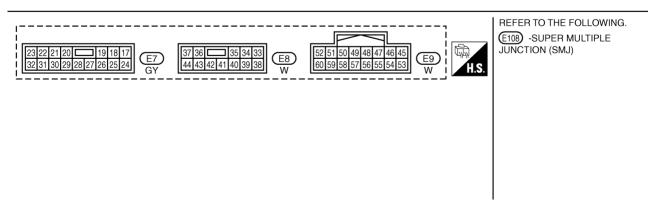




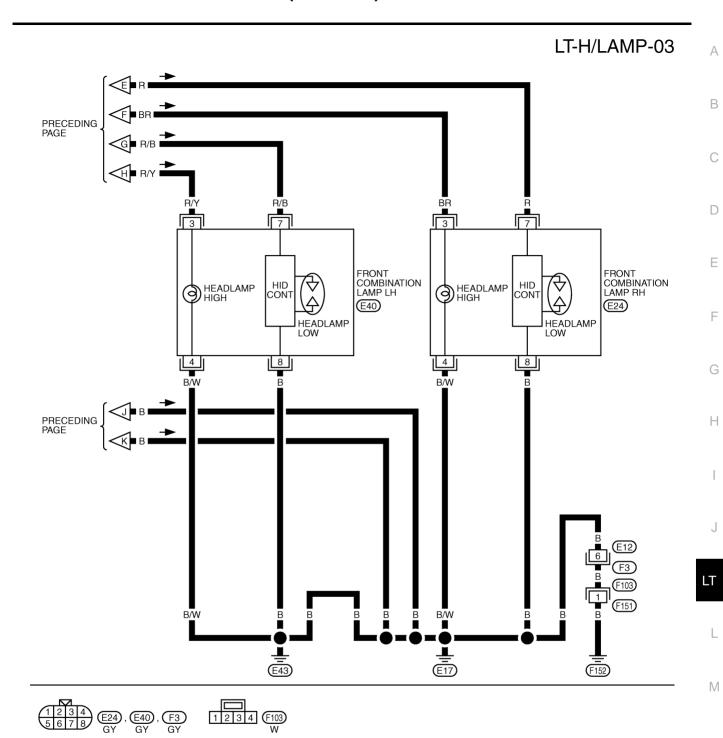
TKWT1767E

LT-H/LAMP-02





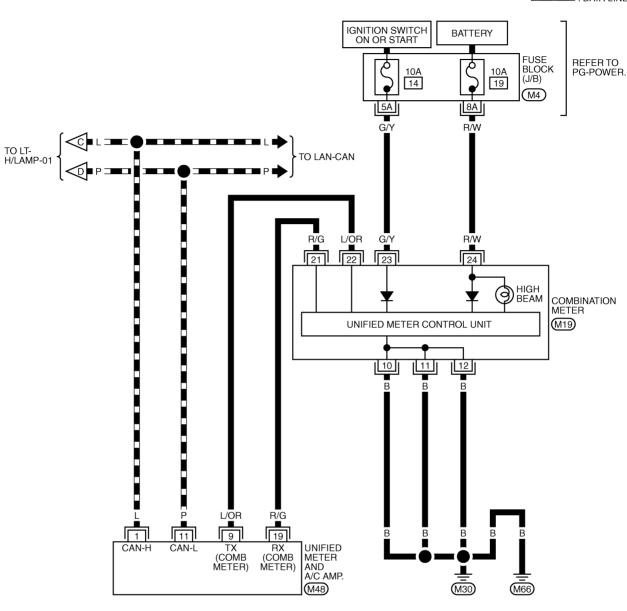
TKWT1768E

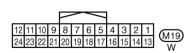


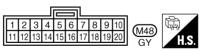
TKWT1769E

LT-H/LAMP-04

: DATA LINE







REFER TO THE FOLLOWING.

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

TKWT1728E

Terminal No.	Wire color	Signal name	Ignition switch	Measuring condition Operation or condition	Reference value	
2	GY	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 ***5ms	
3	L/W	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 → • 5ms SKIA5292E	
4	PU/W	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 64 2 0 	
5	Y/R	Combination switch input 2			(V)	
6	Y/G	Combination switch input 1	ON	Lighting, turn, wiper OFF Wiper dial position 4	6 4 2 0 ++5ms SKIA5292E	
11	LG	Ignition switch (ACC)	ACC	_	Battery voltage	
32	G/B	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 	
33	G	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 ***5ms SKIA5292E	
34	W/L	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 64 2 0 	

Torminal	Miro			Measuring condition		
Terminal Wire No. color		Signal name	Ignition switch	Operation or condition	Reference value	
35	W/G	Combination switch output 2			0.0	
36	W/R	Combination switch output 1	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 *** 5ms SKIA5292E	
38	W/L	Ignition switch (ON)	ON	_	Battery voltage	
39	L	CAN- H	_	_	_	
40	Р	CAN-L	_	_	_	
42	GY	Battery power supply	OFF	_	Battery voltage	
52	В	Ground	ON	_	Approx. 0V	
55	R	Battery power supply	OFF	_	Battery voltage	

Terminals and Reference Values for IPDM E/R

AKS009QM

Terminal	Wire			Measuring condition Ignition Switch Operation or condition						
No.	color	Signal name	Ignition switch			Reference value				
20	R	Headlamp low (RH)	ON	Lighting switch 2ND	OFF	Approx. 0V				
20	IX.	Headiamp low (IXII)	ON	position	ON	Battery voltage				
27	BR	Hoodlown high (DU)	ON	Lighting switch HIGH	OFF	Approx. 0V				
21	DK	Headlamp high (RH)	ON	or PASS position	ON	Battery voltage				
28	R/Y	Hoodlown high (LU)	ON	ON	ON	ON	ON	Lighting switch HIGH	OFF	Approx. 0V
20	K/ I	Headlamp high (LH)	ON	or PASS position	ON	Battery voltage				
30	R/B	Hoodlown low (LH)	ON	Lighting switch 2ND	OFF	Approx. 0V				
30	K/D	Headlamp low (LH)	ON	position	ON	Battery voltage				
38	В	Ground	ON	_		Approx. 0V				
48	L	CAN- H	_	_		_				
49	Р	CAN- L	_	_		_				
60	В	Ground	ON	_		Approx. 0V				

How to Proceed With Trouble Diagnosis

AKS009QN

- 1. Confirm the symptom or customer complaint.
- 2. Understand operation description and function description. Refer to LT-7, "System Description".
- 3. Perform the preliminary check. Refer to LT-17, "Preliminary Check".
- 4. Check symptom and repair or replace the cause of malfunction.
- 5. Does headlamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
- 6. INSPECTION END

Preliminary Check CHECK POWER SUPPLY AND GROUND CIRCUIT

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1. CHECK FUSES

Check fuses for blown-out.

Unit	Power source	Fuse and fusible link No.
	Battery	F
BCM	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
IPDM E/R		72
	Pottoni	74
	Battery	76
		86
Combination meter	Battery	19
Combination meter	Ignition switch ON or START position	14

Refer to LT-11, "Wiring Diagram — H/LAMP —".

OK or NG

OK >> GO TO 2.

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

2. CHECK POWER SUPPLY CIRCUIT

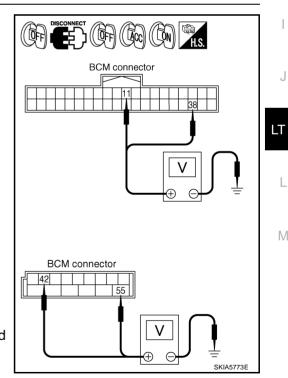
- 1. Turn ignition switch OFF.
- 2. Disconnect BCM connector.
- Check voltage between BCM harness connector and ground.

Terminals			Ignition switch position		
(+)					
Connector	Terminal (Wire color)	(-)	OFF	ACC	ON
M90	11 (LG)	Ground -	0V	Battery voltage	Battery voltage
Well	38 (W/L)		0V	0V	Battery voltage
M91	42 (GY)		Battery voltage	Battery voltage	Battery voltage
IVI9 I	55 (R)		Battery voltage	Battery voltage	Battery voltage

OK or NG

OK

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



$\overline{3}$. CHECK GROUND CIRCUIT

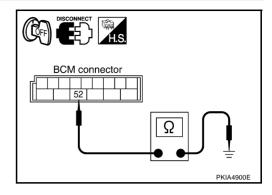
Check continuity between BCM harness connector and ground.

	Continuity		
Connector	Connector Terminal (Wire color)		
M91	52 (B)	Ground	Yes

OK or NG

OK >> INSPECTION END

NG >> Check ground circuit harness.



CONSULT-II Functions (BCM)

AKS009NZ

CONSULT-II performs the following functions communicating with BCM.

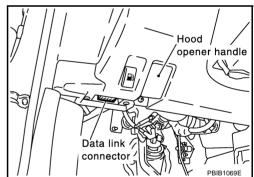
BCM diagnosis part	Check item, diagnosis mode	Description	
		Changes the setting for each function.	
		Displays BCM input data in real time.	
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.	
ВСМ	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.	

CONSULT-II BASIC OPERATION

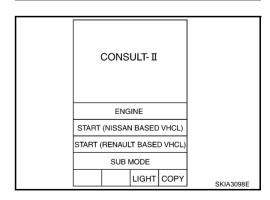
CAUTION:

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.

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

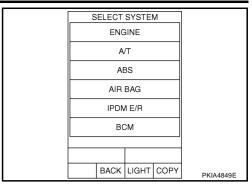


2. Touch "START (NISSAN BASED VHCL)".

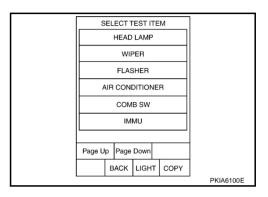


3. Touch "BCM" on "SELECT SYSTEM" screen.

If "BCM" is not indicated, refer to GI-39, "CONSULT-II Data Link
Connector (DLC) Circuit".



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



WORK SUPPORT

Operation Procedure

- I. Touch "HEAD LAMP" on "SELECT TEST ITEM" screen.
- 2. Touch "WORK SUPPORT" on "SELECT DIAG MODE" screen.
- 3. Touch "BATTERY SAVER SET" on "SELECT WORK ITEM" screen.
- 4. Touch "START".
- 5. Touch "CHANGE SET".
- The setting will be changed and "CUSTOMIZING COMPLETED" will be displayed.
- 7. Touch "END".

Display Item List

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

DATA MONITOR

Operation Procedure

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

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

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

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Display Item List		
Monitor item		Contents
IGN ON SW	"ON/OFF"	Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from the ignition switch signal.
ACC ON SW	"ON/OFF"	Displays "ACC (ON)/OFF, Ignition OFF (OFF)" status judged from ignition switch signal.
HI BEAM SW	"ON/OFF"	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
HEAD LAMP SW 1	"ON/OFF"	Displays status (headlamp switch 1: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
HEAD LAMP SW 2	"ON/OFF"	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
LIGH SW 1 ST	"ON/OFF"	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
AUTO LIGHT SW	"ON/OFF"	_
PASSING SW	"ON/OFF"	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW ^{NOTE}	"ON/OFF"	-
DOOR SW - DR	"ON/OFF"	Displays status of driver door as judged from driver door switch signal. (Door is open: ON/ Door is closed: OFF)
DOOR SW - AS	"ON/OFF"	Displays status of passenger door as judged from passenger door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RR ^{NOTE}	"OFF"	-
DOOR SW - RLNOTE	"OFF"	_
		Displays status of back door as judged from back door switch signal. (Coupe models)
BACK DOOR SW	"ON/OFF"	Displays status of rear trunk hood as judged from trunk lamp switch signal. (Roadster models)
TURN SIGNAL R	"ON/OFF"	Displays status (Turn right: ON/Others: OFF) as judged from lighting switch signal.
TURN SIGNAL L	"ON/OFF"	Displays status (Turn left: ON/Others: OFF) as judged from lighting switch signal.
CARGO LAMP SW ^{NOTE}	"OFF"	_

NOTE:

This item is displayed, but cannot monitor it.

ACTIVE TEST

Operation Procedure

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

Display Item List

Test item	Description
TAIL LAMP	Allows tail lamp relay to operate by switching ON–OFF.
HEAD LAMP	Allows headlamp relay to operate by switching ON–OFF.
FR FOG LAMP ^{NOTE}	_
CORNERING LAMP ^{NOTE}	-

NOTE:

This item is displayed, but cannot test it.

CONSULT-II Functions (IPDM E/R)

AKS009QF

CONSULT-II performs the following functions communicating with IPDM E/R.

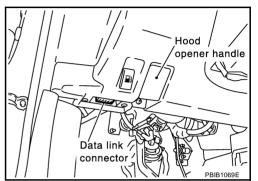
Check Item, Diagnosis Mode	Description
SELF-DIAGNOSTIC RESULTS	IPDM E/R performs self-diagnosis of CAN communication.
DATA MONITOR	The input/output data of IPDM E/R is displayed in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST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

CONSULT-II BASIC OPERATION

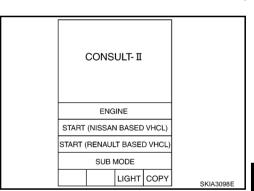
CAUTION:

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

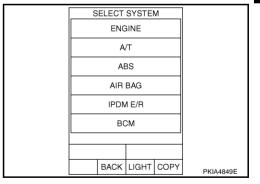
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



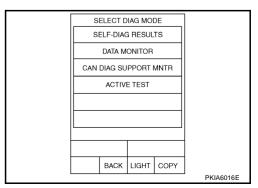
Touch "START (NISSAN BASED VHCL)".



Touch "IPDM E/R" on "SELECT SYSTEM" screen. If "IPDM E/R" is not displayed, print "SELECT SYSTEM" screen, then refer to GI-39, "CONSULT-II Data Link Connector (DLC) Circuit".



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



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DATA MONITOR

Operation Procedure

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

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

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

All Signals, Main Signals, Selection From Menu

	CONSULT-II	Display	М	onitor item s	election	Description
Item name	screen display	-17	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

NOTE:

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

ACTIVE TEST

Operation Procedure

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

Test item	CONSULT-II screen display	Description
Tail lamp relay output	TAIL LAMP	Allows tail lamp relay to operate by switching operation ON-OFF at your option.
Headlamp relay (HI, LO) output	LAMPS	Allows headlamp relay (HI, LO) to operate by switching operation (OFF, HI ON, LO ON) at your option (Headlamp high beam repeats ON– OFF every 1 second).

SELF-DIAGNOSTIC RESULTS

Refer to PG-21, "SELF-DIAG RESULTS".

Headlamp High Beam Does Not Illuminate (Both Sides)

1. CHECK COMBINATION SWITCH INPUT SIGNAL

(P)With CONSULT-II

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

> When lighting switch is : HI BEAM SW ON **HIGH BEAM position**

Without CONSULT-II

Refer to LT-170, "Combination Switch Inspection".

OK or NG

OK >> GO TO 2.

NG >> Check lighting switch. Refer to LT-170, "Combination Switch Inspection".

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	DATA M			
MONITO	MONITOR		IO DTC	
HI BEAM SW OI		N		
MODE	BACK	LIGHT	COPY	PKIA6324E

ACTIVE TEST

MODE BACK LIGHT COPY

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LAMPS

LO

2. HEADLAMP ACTIVE TEST

(P)With CONSULT-II

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

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

Without CONSULT-II

- Start auto active test. Refer to PG-24, "Auto Active Test".
- Make sure headlamp high beam operation.

Headlamp high beam should operate.

OK or NG

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

3. CHECK IPDM E/R

- Select "IPDM E/R" on CONSULT-II, and select "DATA MONI-TOR" on "SELECT DIAG MODE" screen.
- Make sure "HL LO REQ" and "HL HI REQ" turns ON when lighting switch is in HI position.

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

OK or NG

NG

OK >> Replace IPDM E/R.

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

MONITO HL LO HL HI F	REQ	R DN DN	
		 Down	
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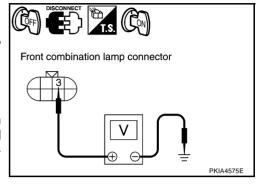
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LT-23

4. CHECK HEADLAMP INPUT SIGNAL

(E)With CONSULT-II

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



	Voltage			
Conr	nector	Terminal (Wire color)	Terminal (Wire color)	
RH	E24	3 (BR)	Ground	Battery voltage
LH	E40	3 (R/Y)	Giodila	Battery voltage

Without CONSULT-II

- 1. Turn ignition switch OFF.
- 2. Disconnect front combination lamp RH and LH connector.
- 3. Start auto active test. Refer to PG-24, "Auto Active Test".
- When headlamp high beam is operating, check voltage between front combination lamp RH and LH harness connector and ground.

	Voltage			
Conr	nector	Terminal (Wire color)	(-)	
RH	E24	3 (BR)	Ground	Battery voltage
LH	E40	3 (R/Y)	Giodila	Battery voltage

OK or NG

OK >> GO TO 6.

NG >> GO TO 5.

5. CHECK HEADLAMP CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect IPDM E/R connector.
- Check continuity between IPDM E/R harness connector E7 terminal 27 (BR) and front combination lamp RH harness connector E24 terminal 3 (BR).

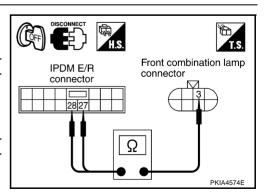
4. Check continuity between IPDM E/R harness connector E7 terminal 28 (R/Y) and front combination lamp LH harness connector E40 terminal 3 (R/Y).



OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness or connector.



6. CHECK HEADLAMP GROUND

Check continuity between front combination lamp RH harness connector E24 terminal 4 (B/W) and ground.

4 (B/W) - Ground

: Continuity should exist.

Check continuity between front combination lamp LH harness connector E40 terminal 4 (B/W) and ground.

4 (B/W) - Ground

: Continuity should exist.

OK or NG

OK >> Check headlamp bulb.

NG >> Repair harness or connector.

Headlamp High Beam Does Not Illuminate (One Side)

1. CHECK BULB

Check halogen bulb of lamp which does not illuminate.

OK or NG

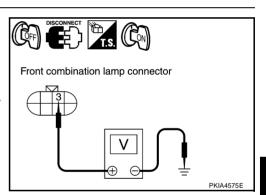
OK >> GO TO 2.

NG >> Replace headlamp bulb.

2. CHECK HEADLAMP INPUT SIGNAL

- 1. Turn ignition switch OFF.
- 2. Disconnect front combination lamp RH or LH connector.
- 3. Turn ignition switch ON.
- Lighting switch is turned HIGH BEAM position.
- Check voltage between front combination lamp RH or LH harness connector and ground.

	Voltage			
Conr	nector	Terminal (Wire color)	(-)	
RH	E24	3 (BR)	Ground	Battery voltage
LH	E40	3 (R/Y)	Giouna	Ballery Vollage



Front combination lamp connector

OK or NG

OK >> GO TO 4.

NG >> GO TO 3. Α

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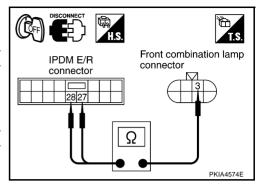
3. CHECK HEADLAMP CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect IPDM E/R connector.
- Check continuity between IPDM E/R harness connector E7 terminal 27 (BR) and front combination lamp RH harness connector E24 terminal 3 (BR).

27 (BR) – 3 (BR) : Continuity should exist.

Check continuity between IPDM E/R harness connector E7 terminal 28 (R/Y) and front combination lamp LH harness connector E40 terminal 3 (R/Y).

28 (R/Y) – 3 (R/Y) : Continuity should exist.



Front combination lamp connector

OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness or connector.

4. CHECK HEADLAMP GROUND

1. Check continuity between front combination lamp RH harness connector E24 terminal 4 (B/W) and ground.

4 (B/W) – Ground : Continuity should exist.

Check continuity between front combination lamp LH harness connector E40 terminal 4 (B/W) and ground.

4 (B/W) – Ground : Continuity should exist.

OK or NG

OK >> Check headlamp harness and connector.

NG >> Repair harness or connector.

High Beam Indicator Lamp Does Not Illuminate

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1. CHECK BULB

Check bulb of high beam indicator lamp.

OK or NG

OK >> Replace combination meter.

NG >> Replace indicator bulb.

Headlamp Low Beam Does Not Illuminate (Both Sides)

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1. CHECK COMBINATION SWITCH INPUT SIGNAL

(P)With CONSULT-II

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

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

Refer to LT-170, "Combination Switch Inspection".

OK or NG

OK >> GO TO 2.

NG >> Check lighting switch. Refer to <u>LT-170, "Combination</u> Switch Inspection".

DATA MONITOR					
MONITOR		ı	VO	DTC	
HEAD LAMP SW1		1 (ON		
HEAD LAMP SW2		2 (ON		
			_		
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$\overline{2}$. HEADLAMP ACTIVE TEST

(II) With CONSULT-II

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

Headlamp low beam should operate.

Without CONSULT-II

- 1. Start auto active test. Refer to PG-24, "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

(II) With CONSULT-II

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

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

Without CONSULT-II

- Start auto active test. Refer to <u>PG-24, "Auto Active Test"</u>.
- 2. Make sure headlamp low beam operation.

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

OK or NG

OK >> Replace IPDM E/R.

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

DATA MONITOR

MONITOR

HL LO REQ ON

Page Down

RECORD

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ACTIVE TEST
LAMPS OFF

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LO FOG

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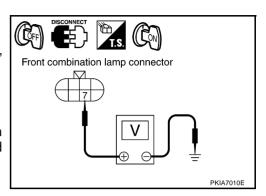
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4. CHECK HEADLAMP INPUT SIGNAL

(E)With CONSULT-II

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

		(+)	(-)	Voltage
Conr	nector	Terminal (Wire color)		
RH	E24	7 (R)	Ground	Battery voltage
LH	E40	7 (R/B)	Giouna	



Without CONSULT-II

- 1. Turn ignition switch OFF.
- 2. Disconnect front combination lamp RH and LH connector.
- 3. Start auto active test. Refer to PG-24, "Auto Active Test".
- When headlamp low beam is operating, check voltage between front combination lamp RH and LH harness connector and ground.

	()	Voltage		
Conr	nector	Terminal (Wire color)	(-)	
RH	E24	7 (R)	Ground	Battery voltage
LH	E40	7 (R/B)	Giouna	

OK or NG

OK >> GO TO 6.

NG >> GO TO 5.

5. CHECK HEADLAMP CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect IPDM E/R connector.
- 3. Check continuity between IPDM E/R harness connector E7 terminal 20 (R) and front combination lamp RH harness connector E24 terminal 7 (R).

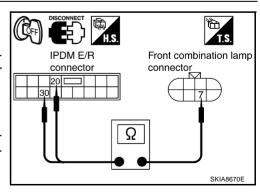
4. Check continuity between IPDM E/R harness connector E7 terminal 30 (R/B) and front combination lamp LH harness connector E40 terminal 7 (R/B).



OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness or connector.



6. CHECK HEADLAMP GROUND

- 1. Turn ignition switch OFF.
- 2. Check continuity between front combination lamp RH harness connector E24 terminal 8 (B) and ground.

8 (B) - Ground

: Continuity should exist.

3. Check continuity between front combination lamp LH harness connector E40 terminal 8 (B) and ground.

8 (B) - Ground

: Continuity should exist.

OK or NG

OK

>> Check headlamp harness and connectors, ballasts (HID control unit), and xenon bulbs. Refer to LT-32, "Xenon Headlamp Trouble Diagnosis".

NG >> Repair harness or connector.

Headlamp Low Beam Does Not Illuminate (One Side)

1. CHECK BULB

Check ballasts (HID control unit) and xenon bulb of lamp which does not illuminate. Refer to <u>LT-32, "Xenon Headlamp Trouble Diagnosis"</u> .

OK or NG

OK >> GO TO 2.

NG >> Repair malfunctioning part.

Front combination lamp connector

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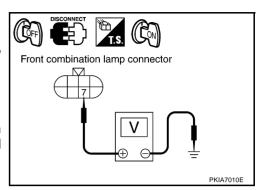
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2. CHECK HEADLAMP INPUT SIGNAL

(E)With CONSULT-II

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

(+)				(-) Voltage
Conr	Connector Terminal (Wire		(-)	
RH	E24	7 (R)	Ground	Battery voltage
LH	E40	7 (R/B)	Giouna	



Without CONSULT-II

- 1. Turn ignition switch OFF.
- 2. Disconnect front combination lamp RH and LH connector.
- 3. Start auto active test. Refer to PG-24, "Auto Active Test".
- 4. When headlamp low beam is operating, check voltage between front combination lamp RH and LH harness connector and ground.

	Terminals				
	Voltage				
Conr	nector	Terminal (Wire color)	(-)		
RH	E24	7 (R)	Ground	Battery voltage	
LH	E40	7 (R/B)	Giouna		

OK or NG

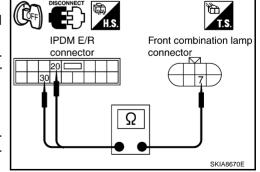
OK >> GO TO 4.

NG >> GO TO 3.

3. CHECK HEADLAMP CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect IPDM E/R connector and front combination lamp RH or LH connector.
- 3. Check continuity between IPDM E/R harness connector E7 terminal 20 (R) and front combination lamp RH harness connector E24 terminal 7 (R).

4. Check continuity between IPDM E/R harness connector E7 terminal 30 (R/B) and front combination lamp LH harness connector E40 terminal 7 (R/B).



30 (R/B) - 7 (R/B)

: Continuity should exist.

OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness or connector.

4. CHECK HEADLAMP GROUND

1. Check continuity between front combination lamp RH harness connector E24 terminal 8 (B) and ground.

8 (B) - Ground

: Continuity should exist.

2. Check continuity between front combination lamp LH harness connector E40 terminal 8 (B) and ground.

8 (B) - Ground

: Continuity should exist.

OK or NG

OK >> Check headlamp harness and connector.

NG >> Repair harness or connector.

Headlamps Does Not Turn OFF

1. CHECK HEADLAMP TURN OFF

Make sure that lighting switch is OFF. And make sure is 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

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

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

OK or NG

OK >> Replace IPDM E/R.

NG >> Check lighting switch. Refer to <u>LT-170, "Combination</u>

Switch Inspection".

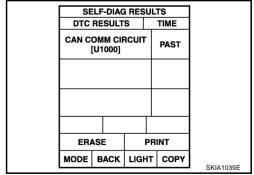
DATA MONITOR MONITOR NO DTC HEAD LAMP SW 1 OFF HEAD LAMP SW 2 OFF Page Down RECORD MODE BACK LIGHT COPY

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

Select "BCM" by CONSULT-II, and perform self-diagnosis for "BCM". Display of self-diagnosis results

NO DTC>> Replace IPDM E/R.

CAN COMM CIRCUIT>> Refer to <u>BCS-16</u>, "CAN Communication <u>Inspection Using CONSULT-II (Self-Diagnosis)"</u>.



Front combination lamp connector

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CAUTION:

- Installation or removal of connector must be done with lighting switch OFF.
- When lamp is illuminated (when lighting switch is ON), do not touch harness, HID control unit, inside of lamp, or lamp metal parts.
- To check illumination, temporarily install lamp in the vehicle. Be sure to connect power at the vehicle-side connector.
- If the error can be traced directly to the electrical system, first check for items such as burned-out fuses and fusible links, broken wires or loose connectors, pulled-out terminals, and improper connections.
- Do not work with wet hands.
- Using a tester for HID control unit circuit trouble diagnosis is prohibited.
- Disassembling the HID control unit or harnesses (bulb socket harness, ECM harness) is prohibited.
- Immediately after illumination, the light intensity and color will fluctuate, but there is nothing wrong.
- When the bulb has reached the end of its lifetime, the brightness may drop significantly, it may flash repeatedly, or the light may turn a reddish color.

Xenon Headlamp Trouble Diagnosis

AKS009RL

1. CHECK 1: XENON HEADLAMP LIGHTING

Install normal xenon bulb to corresponding xenon bulb headlamp, and check if lamp lights up. OK or NG

OK >> Replace xenon bulb.

NG >> GO TO 2.

2. CHECK 2: XENON HEADLAMP LIGHTING

Install normal HID control unit to corresponding xenon headlamp, and check if lamp lights up.

OK or NG

OK >> Replace HID control unit.

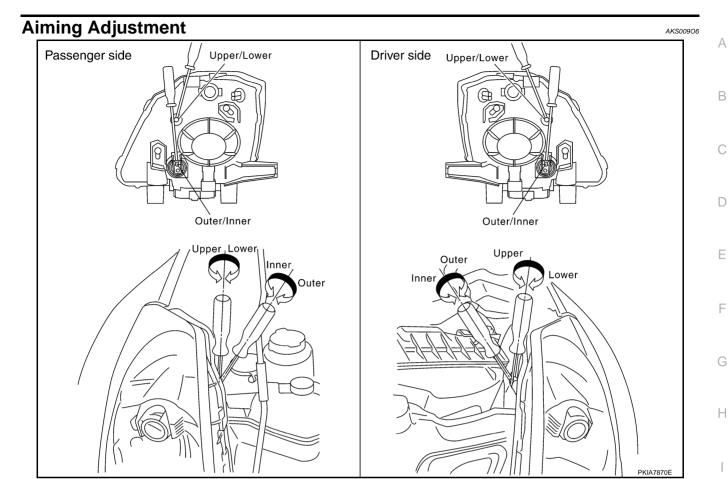
NG >> GO TO 3.

3. CHECK 3: XENON HEADLAMP LIGHTING

Install normal xenon lamp housing assembly to corresponding xenon headlamp, and check if lamp lights up. OK or NG

OK >> Malfunction in starter (boosting circuit) in xenon headlamp housing. (Replace xenon headlamp housing assembly)

NG >> INSPECTION END



PREPARATION BEFORE ADJUSTING

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

- 1. Keep all tires inflated to correct pressures.
- Place vehicle on flat surface.
- 3. Set that there is no-load in vehicle other than the driver (or equivalent weight placed in driver's position). Coolant, engine oil filled up to correct level and full fuel tank.

LOW BEAM AND HIGH BEAM

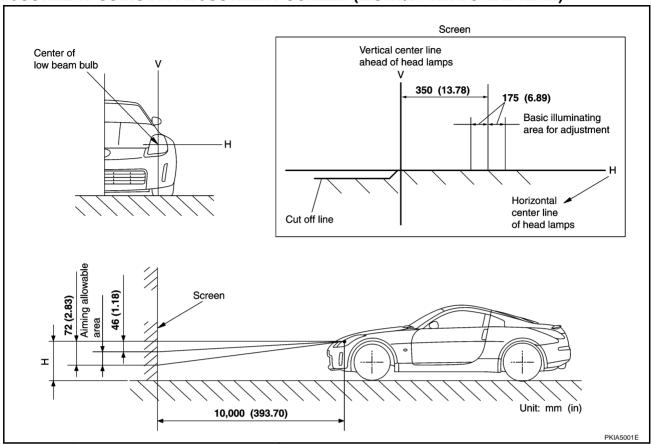
- 1. Turn headlamp low beam on.
- 2. Use adjusting screws to perform aiming adjustment.

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ADJUSTMENT USING AN ADJUSTMENT SCREEN (LIGHT/DARK BORDERLINE)



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

Basic illumination area for adjustment should be within the range shown on the aiming chart.
 Adjust headlamp accordingly.

Bulb Replacement HEADLAMP (UPPER) LOW BEAM

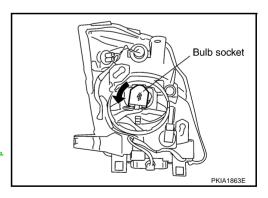
1. Turn lighting switch OFF.

- 2. Remove headlamp. Refer to LT-36, "Removal and Installation".
- 3. Turn plastic cap counterclockwise and unlock it.
- Turn bulb socket counterclockwise and unlock it.
- 5. Unlock retaining spring and remove bulb from headlamp.
- 6. Install in reverse order of removal.

NOTE:

After installation, perform aiming adjustment. Refer to <u>LT-33</u>, <u>"Aiming Adjustment"</u>.

Headlamp (upper) low beam : 12V - 35W (D2R) (Xenon)



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HEADLAMP (LOWER) HIGH BEAM

- 1. Turn lighting switch OFF.
- 2. Open the driver and front passenger window, and then disconnect the battery negative cable.

CAUTION:

After the battery cables are disconnected, do not open/close the driver and/or front passenger door with the window in the full up position. The automatic window adjusting function will not work and the side roof panel may be damaged.

- 3. Remove fender protector (front), Refer to EI-21, "FENDER PROTECTOR" in "EI" section.
- 4. Turn plastic cap counterclockwise and unlock it.
- 5. Disconnect bulb socket.
- 6. Unlock retaining spring and remove bulb from headlamp.
- 7. Install in reverse order of removal.

Headlamp (lower) high beam : 12V - 55W (H7)

PARKING LAMP (CLEARANCE LAMP)

- 1. Turn lighting switch OFF.
- 2. Remove fender protector (front). Refer to EI-21, "FENDER PROTECTOR" in "EI" section.
- 3. Turn bulb socket counterclockwise and unlock it.
- 4. Remove bulb from its socket.
- 5. Install in reverse order of removal.

Parking lamp (Clearance lamp) : 12V - 5W

FRONT TURN SIGNAL LAMP

- 1. Turn lighting switch OFF.
- 2. Remove fender protector (front). Refer to EI-21, "FENDER PROTECTOR" in "EI" section.
- 3. Turn bulb socket counterclockwise and unlock it.
- 4. Remove bulb from its socket.
- 5. Install in reverse order of removal.

Front turn signal lamp : 12V - 21W

FRONT SIDE MARKER LAMP

- 1. Turn lighting switch OFF.
- 2. Remove fender protector (front). Refer to EI-21, "FENDER PROTECTOR" in "EI" section.
- 3. Turn bulb socket counterclockwise and unlock it.
- 4. Remove bulb from its socket.
- 5. Install in reverse order of removal.

Front side marker lamp : 12V - 5W

CAUTION:

After installing bulb, be sure to install plastic cap and bulb socket securely to insure watertightness.

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Removal and Installation REMOVAL

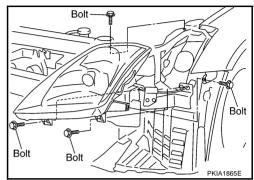
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1. Open driver and front passenger window, and then disconnect battery negative cable.

CAUTION:

After battery cables are disconnected, do not open/close the driver and/or front passenger door with the window in the full up position. The automatic window adjusting function will not work and the side roof panel may be damaged.

- 2. Remove front bumper. Refer to $\underline{\text{EI-14, "FRONT BUMPER"}}$ in "EI" section.
- 3. Remove headlamp mounting bolts.
- 4. Pull head lamp toward vehicle front, disconnect connector, and remove headlamp.



INSTALLATION

Installation in the reverse order if removal. Be careful of the following.

Headlamp mounting bolt



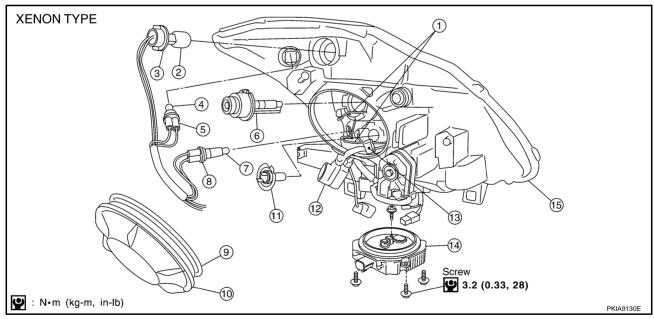
: 6.1 N·m (0.62 kg-m, 54 in-lb)

NOTE:

After installation, aiming adjustment. Refer to LT-33, "Aiming Adjustment".

Disassembly and Assembly

AKS00909



- Retaining spring
- Side marker lamp bulb
- 7. Parking lamp (Clearance lamp) bulb
- 10. Plastic cap
- 13. Halogen bulb socket
- 2. Front turn signal lamp bulb
- 5. Side marker lamp bulb socket
- 8. Parking lamp (Clearance lamp) bulb socket
- 11. Halogen bulb (high)
- 14. HID C/U

- 3. Front turn signal lamp bulb socket
- 6. Xenon bulb
- 9. Seal rubber
- 12. Xenon bulb socket
- 15. Headlamp housing assembly

HEADLAMP (FOR USA) - XENON TYPE -

DISASSEMBLY

- Turn plastic cap counterclockwise and unlock it.
- 2. Turn xenon bulb socket counterclockwise, and unlock it.
- 3. Unlock retaining spring, and remove xenon bulb (low).
- 4. Disconnect HID control unit connector, and remove HID control unit screws.
- Disconnect the socket connected to halogen bulb (high).
- 6. Unlock retaining spring, and remove halogen bulb (high).
- 7. Turn parking lamp bulb socket counterclockwise and unlock it.
- 8. Remove parking lamp bulb from its socket.
- 9. Turn front turn signal lamp bulb socket counterclockwise and unlock it.
- 10. Remove front turn signal lamp bulb from its socket.
- 11. Turn front side marker lamp bulb socket counterclockwise and unlock it.
- 12. Remove front side marker lamp bulb from its socket.

ASSEMBLY

Assemble in reverse order of disassembly. Be careful of the following:

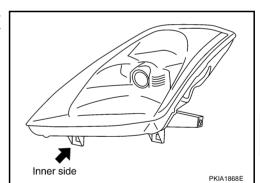
HID control unit mounting screw : 3.1 N·m (0.32 kg-m, 27 in-lb)

CAUTION:

- When HID control unit is removed, reinstall it securely and avoid any looseness.
- After installing bulb, be sure to install plastic cap and bulb socket securely to insure watertightness

Servicing to Replace Headlamps When Damaged

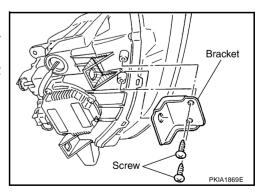
If only installation part as shown in the figure is damaged, and headlamp housing itself is not damaged, repair can be completed easily by installing correction brackets.



INSTALLATION OF HEADLAMP BRACKET

- Remove headlamps. Refer to LT-36, "Removal and Installation".
- Cut damaged section of installation part, then shape with sandpaper.
- Attach each correction bracket to headlamp housing boss with 2 screws.

RH headlamp Inner side 26040 CD000 LH headlamp Inner side 26090 CD000



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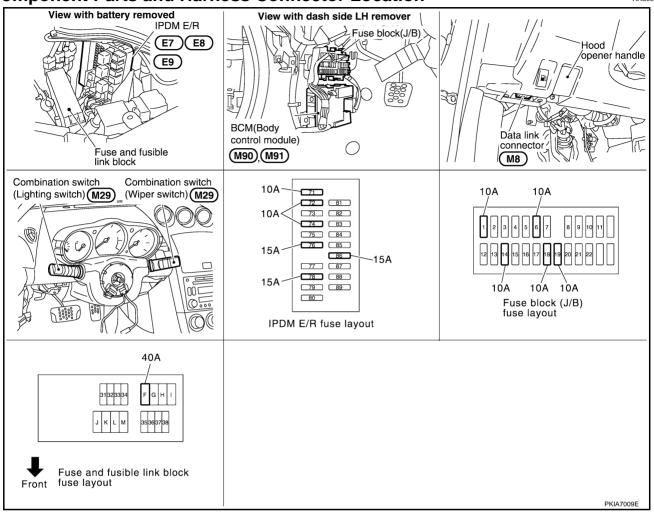
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Component Parts and Harness Connector Location

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System Description

AKS009P2

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

OUTLINE

Power is supplied at all times

- to headlamp high relay [located in IPDM E/R (intelligent power distribution module engine room)]
- to headlamp low relay [located in IPDM E/R (intelligent power distribution module engine room)]
- through 40A fusible link (letter F, located in fuse and fusible link block.)
- to BCM (body control module) terminal 55
- through 10A fuse [No.18, located in fuse block (J/B)]
- to BCM (body control module) terminal 42
- through 10A fuse [No.71, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)]
- through 15A fuse [No.78, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)].

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

- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)]
- to BCM (body control module) terminal 38
- through 10A fuse [No.1, located in fuse block (J/B)].

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

- to BCM (body control module) terminal 11
- through 10A fuse [No.6, located in fuse block (J/B)].

Ground is supplied

- to BCM (body control module) terminal 52
- through grounds M30 and M66
- to IPDM E/R (intelligent power distribution module engine room) terminal 38 and 60
- through grounds E17, E43 and F152.

Low Beam Operation

With lighting switch in 2ND position, BCM receives input signal requesting by combination switch reading function (Refer to BCS-3, "COMBINATION SWITCH READING FUNCTION") headlamps to illuminate. This input signal is communicated to IPDM E/R across CAN communication lines. CPU in IPDM E/R controls headlamp low relay coil, which when energized, power is supplied.

- through 15A fuse [No.76, located in IPDM E/R]
- through IPDM E/R terminal 20
- to front combination lamp RH terminal 6
- through 15A fuse [No.86, located in IPDM E/R]
- through IPDM E/R terminal 30
- to front combination lamp LT terminal 6.

Ground is supplied

- to front combination lamp RH terminal 3
- through grounds E17, E43 and F152
- to front combination lamp LH terminal 3
- through grounds E17, E43 and F152.

High Beam Operation/Flash-to-Pass Operation

With lighting switch in 2ND position and placed in HIGH or PASS position, BCM receives input signal requesting headlamp high beams to illuminate. This input signal is communicated to IPDM E/R across CAN communication lines. CPU in IPDM E/R controls headlamp high relay coil, which when energized, directs power

- to 10A fuse [No.72, located in IPDM E/R]
- through IPDM E/R terminal 27
- to front combination lamp RH terminal 2
- to 10A fuse [No.74, located in IPDM E/R]
- through IPDM E/R terminal 28
- to front combination lamp LH terminal 2.

Ground is supplied

- to front combination lamp RH terminal 3
- through grounds E17, E43 and F152
- to front combination lamp LH terminal 3
- through grounds E17, E43 and F152.

With power and ground supplied, high beam headlamps illuminate.

Unified meter and A/C amp. receives signal from BCM across CAN communication lines, and then combination meter indicator illuminates high beam.

COMBINATION SWITCH READING FUNCTION

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

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EXTERIOR LAMP BATTERY SAVER CONTROL

When combination switch (lighting switch) is in the 2ND position (ON), and ignition switch is turned from ON or ACC to OFF, battery saver control function is activated.

Under this condition, headlamps remain illuminated for 5 minutes, then headlamps are turned off.

Exterior lamp battery saver control mode can be changed by function setting of CONSULT-II.

VEHICLE SECURITY SYSTEM

The vehicle security system will flash high beams if the system is triggered. Refer to <u>BL-129</u>, "VEHICLE <u>SECURITY (THEFT WARNING) SYSTEM"</u>.

CAN Communication System Description

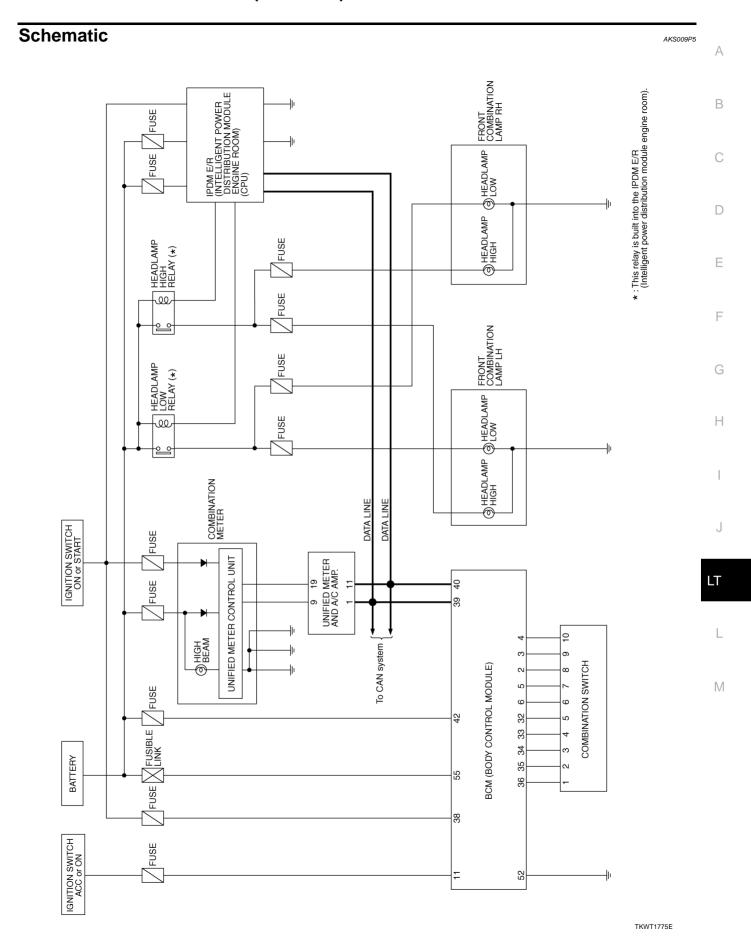
AKS009P3

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

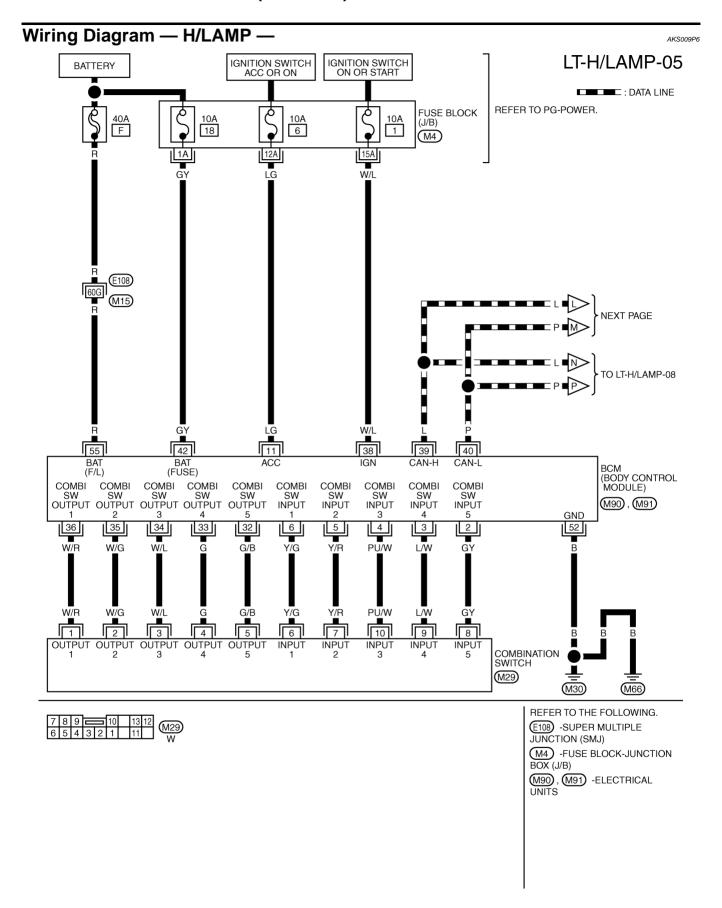
CAN Communication Unit

AKS009P4

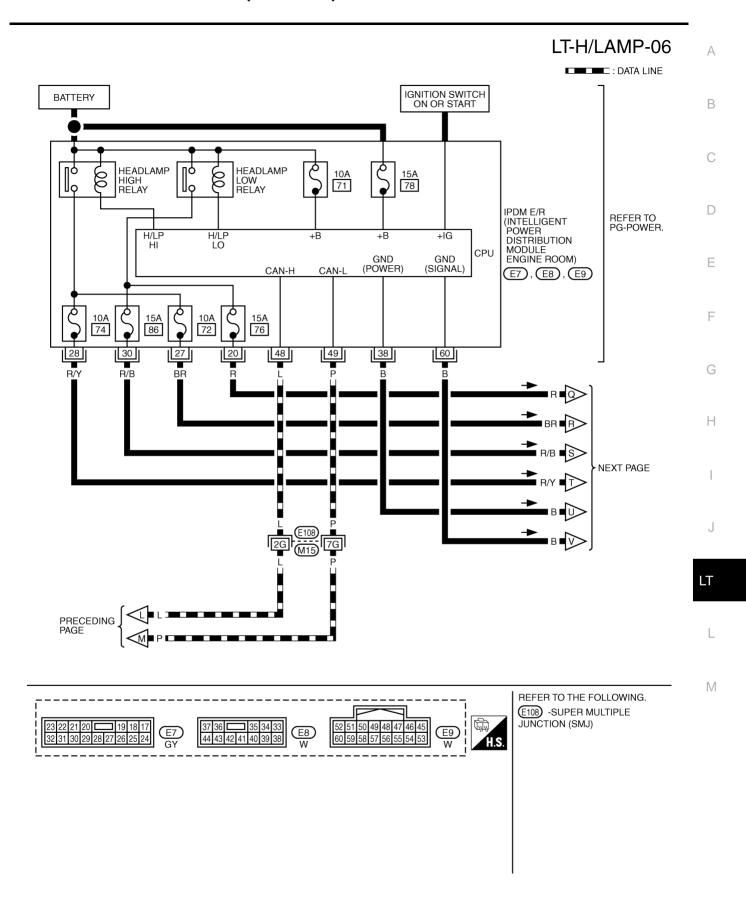
Refer to LAN-5, "CAN Communication Unit".



LT-41

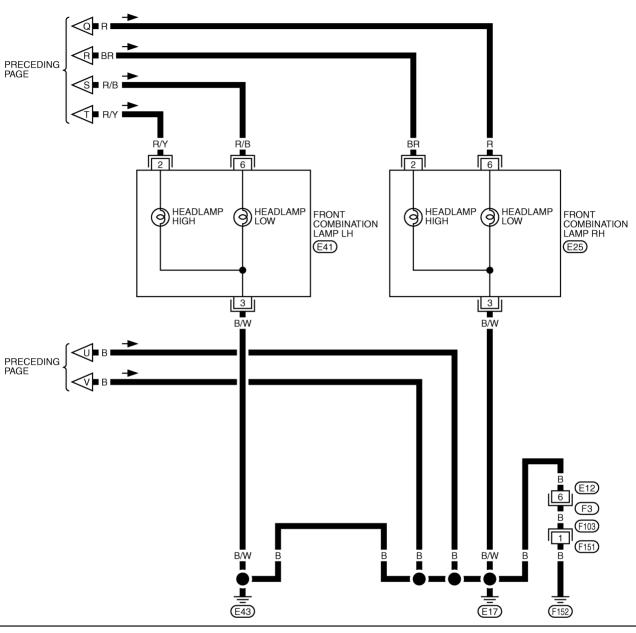


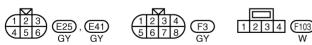
TKWT1776E

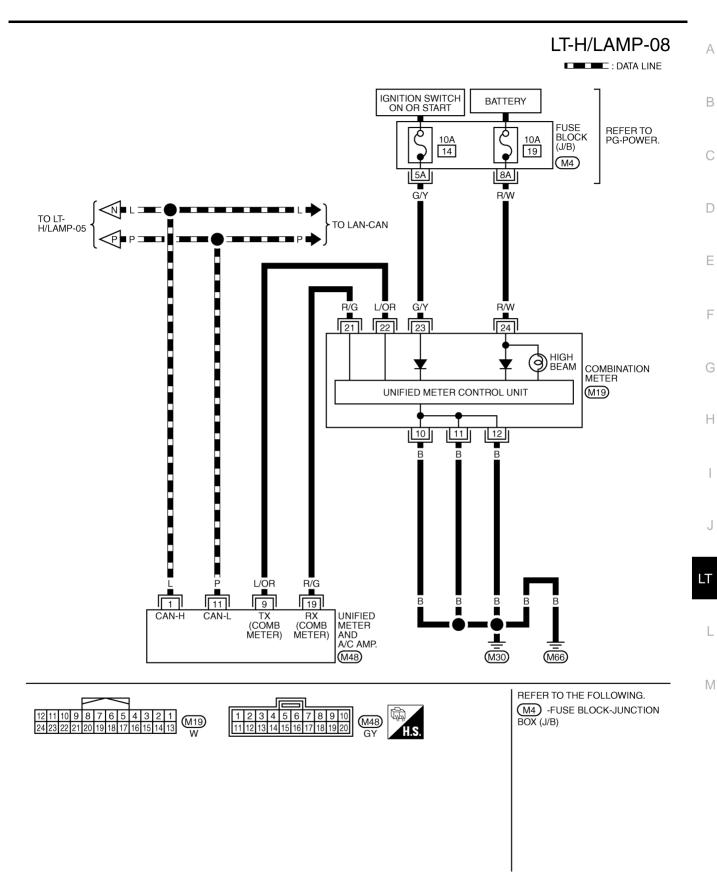


TKWT1777E

LT-H/LAMP-07







TKWT1779E

Terminals and Reference Values for BCM

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Tamainal) A /:		Measuring condition		
Terminal No.	Wire color	Signal name	Ignition switch	Operation or condition	Reference value
2	GY	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 ***5ms SKIA5291E
3	L/W	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 ****5ms
4	PU/W	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 64 2 0 ***5ms SKIA5291E
5	Y/R	Combination switch input 2			(V)
6	Y/G	Combination switch input 1	ON	Lighting, turn, wiper OFF Wiper dial position 4	6 4 2 0 → 5 ms SKIA5292E
11	LG	Ignition switch (ACC)	ACC	_	Battery voltage
32	G/B	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 **5ms SKIA5291E
33	G	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 ***5ms
34	W/L	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 **5ms SKIA5291E

Terminal	Wire			Measuring condition		
No.	color	Signal name	Ignition switch	Operation or condition	Reference value	
35	W/G	Combination switch output 2			0.0	
36	W/R	Combination switch output 1	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 → • 5ms SKIA5292E	
38	W/L	Ignition switch (ON)	ON	_	Battery voltage	
39	L	CAN- H	_	_	_	
40	Р	CAN- L	_	_	_	
42	GY	Battery power supply	OFF	_	— Battery voltage	
52	В	Ground	ON	_	Approx. 0V	
55	R	Battery power supply	OFF	_	Battery voltage	

Terminals and Reference Values for IPDM E/R

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Terminal	Wire			Measuring con	dition	
No.	color Signal name Ignition Switch Operation or condition		or condition	Reference value		
20	R	Headlamp low (RH)	ON	Lighting switch	OFF	Approx. 0V
20	K	Headiamp low (KH)	2ND position	ON	Battery voltage	
				Lighting switch	OFF	Approx. 0V
27	BR	R Headlamp high (RH)	ON	ON HIGH or PASS position	ON	Battery voltage
				Lighting switch	OFF	Approx. 0V
28	3 ()	HIGH or PASS position ON	Battery voltage			
30	R/B	Headlems low (LU)	ON	Lighting switch	OFF	Approx. 0V
30	K/D	Headlamp low (LH)	ON	2ND position	ON	Battery voltage
38	В	Ground	ON	_		Approx. 0V
48	L	CAN-H	_	_		_
49	Р	CAN-L	_	_		_
60	В	Ground	ON	_		Approx. 0V

IVI

How to Proceed With Trouble Diagnosis

AKS009RA

- 1. Confirm the symptom or customer complaint.
- 2. Understand operation description and function description. Refer to LT-38, "System Description".
- 3. Perform the preliminary check. Refer to LT-48, "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 CHECK POWER SUPPLY AND GROUND CIRCUIT

AKS009P9

1. CHECK FUSES

Check for blown fuses.

UNIT	POWER SOURCE	Fuse and fusible link No.	
	Battery	F	
BCM	Ignition switch ON or START position	1	
	Ignition switch ACC or ON position	6	
		72	
IDDM E/D	Dettern	74	
IPDM E/R	Battery	76	
		86	

Refer to LT-42, "Wiring Diagram — H/LAMP —" .

OK or NG

OK >> GO TO 2.

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

2. CHECK POWER SUPPLY CIRCUIT

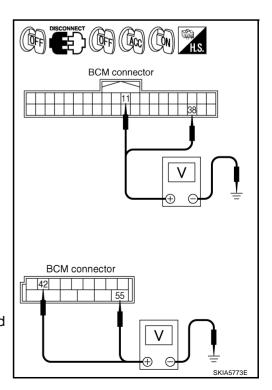
- Turn ignition switch OFF.
- 2. Disconnect BCM connector.
- 3. Check voltage between BCM harness connector and ground.

Terminals			Ignition switch position		
((+)				
Connector	Terminal (Wire color)	(–)	OFF	ACC	ON
M90	11 (LG)	Ground	0V	Battery voltage	Battery voltage
WISO	38 (W/L)		0V	0V	Battery voltage
M91	42 (GY)		Battery voltage	Battery voltage	Battery voltage
	55 (R)		Battery voltage	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3.

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



$\overline{3}$. CHECK GROUND CIRCUIT

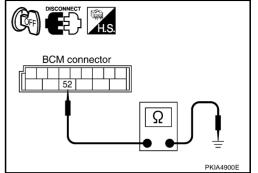
Check continuity between BCM harness connector and ground.

	Continuity		
Connector	Terminal (Wire color)	Ground	Continuity
M91	52 (B)	Giodila	Yes

OK or NG

OK >> INSPECTION END

NG >> Check ground circuit harness.



CONSULT-II Functions (BCM)

CONSULT-II performs the following functions communicating with BCM.

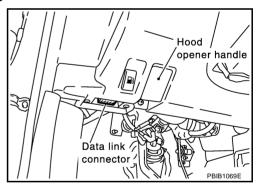
BCM diagnosis part	BCM diagnosis part Check item, diagnosis mode Description		
	WORK SUPPORT Changes the setting for each function.		
HEADLAMP	MP DATA MONITOR Displays BCM input data in real time.		
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.	
BCM CAN DIAG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

CONSULT-II BASIC OPERATION

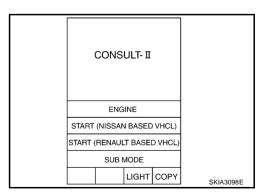
CAUTION:

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.

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



Touch "START (NISSAN BASED VHCL)".



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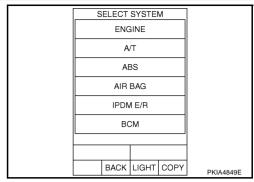
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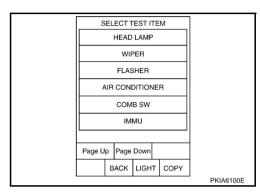
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 Touch "BCM" on "SELECT SYSTEM" screen.
 If "BCM" is not indicated, refer to GI-39, "CONSULT-II Data Link Connector (DLC) Circuit".



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 "BATTERY SAVER SET" on "SELECT WORK ITEM" screen.
- 4. Touch "START".
- 5. Touch "CHANGE SET".
- 6. The setting will be changed and "CUSTOMIZING COMPLETED" will be displayed.
- 7. Touch "END".

Display Item List

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

DATA MONITOR

Operation Procedure

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

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

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

Monitor item		Contents
IGN ON SW	"ON/OFF"	Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from the ignition switch signal.
ACC ON SW	"ON/OFF"	Displays "ACC (ON)/OFF, Ignition OFF (OFF)" status judged from ignition switch signal.
HI BEAM SW	"ON/OFF"	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
HEAD LAMP SW 1	"ON/OFF"	Displays status (headlamp switch 1: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
HEAD LAMP SW 2	"ON/OFF"	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
LIGHT SW 1 ST	"ON/OFF"	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
AUTO LIGHT SW ^{NOTE}	"ON/OFF"	-
PASSING SW	"ON/OFF"	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW ^{NOTE}	"ON/OFF"	-
DOOR SW - DR	"ON/OFF"	Displays status of driver door as judged from driver door switch signal. (Door is open: ON/ Door is closed: OFF)
DOOR SW - AS	"ON/OFF"	Displays status of passenger door as judged from passenger door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RR ^{NOTE}	"OFF"	-
DOOR SW - RL ^{NOTE}	"OFF"	-
		Displays status of back door as judged from back door switch signal. (Coupe models)
BACK DOOR SW	"ON/OFF"	 Displays status of rear trunk hood as judged from trunk lamp switch signal. (Roadster models)
TURN SIGNAL R	"ON/OFF"	Displays status (Turn right: ON/Others: OFF) as judged from lighting switch signal.
TURN SIGNAL L	"ON/OFF"	Displays status (Turn left: ON/Others: OFF) as judged from lighting switch signal.
CARGO LAMP SW ^{NOTE}	"OFF"	_

NOTE:

This item is displayed, but cannot monitor it.

ACTIVE TEST

Operation Procedure

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

Display Item List

Test item	Description
TAIL LAMP	Allows tail lamp relay to operate by switching ON–OFF.
HEAD LAMP	Allows headlamp relay to operate by switching ON–OFF.
FR FOG LAMP ^{NOTE}	_
CORNERING LAMP ^{NOTE}	-

NOTE:

This item is displayed, but cannot test it.

CONSULT-II Functions (IPDM E/R)

CONSULT-II performs the following functions communicating with IPDM E/R.

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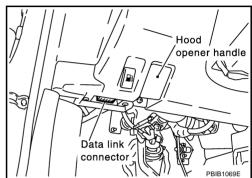
Inspection Item, Diagnosis Mode	Description
SELF-DIAGNOSTIC RESULTS	IPDM E/R performs self-diagnosis of CAN communication.
DATA MONITOR	The input/output data of IPDM E/R is displayed in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE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

CONSULT-II OPERATION

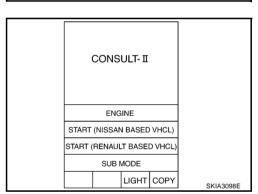
CAUTION:

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.

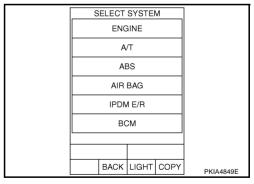
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



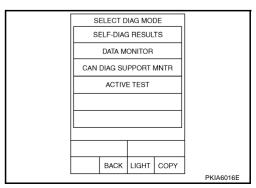
2. Touch "START (NISSAN BASED VHCL)".



3. Touch "IPDM E/R" on "SELECT SYSTEM" screen. If "IPDM E/R" is not displayed, print "SELECT SYSTEM" screen, then refer to GI-39, "CONSULT-II Data Link Connector (DLC) Circuit".



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



DATA MONITOR

Operation Procedure

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

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

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

All Signals, Main Signals, Selection From Menu

			Monitor item selection			
Item name	CONSULT-II screen display	Display or unit	ALL SIGNALS	MAIN SIGNALS	SELECT FROM MENU	Description
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

NOTE:

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

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ACTIVE TEST

Operation Procedure

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

Test item	CONSULT-II screen display	Description
Tail lamp relay output	TAIL LAMP	Allows tail lamp relay to operate by switching operation ON-OFF at your option.
Headlamp relay (HI, LO) output	LAMPS	Allows headlamp relay (HI, LO) to operate by switching operation (OFF, HI ON, LO ON) at your option (Headlamp high beam repeats ON– OFF every 1 second).

SELF-DIAGNOSTIC RESULTS

Refer to PG-21, "SELF-DIAG RESULTS".

Headlamp High Beam Does Not Illuminate (Both Sides)

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1. CHECK COMBINATION SWITCH INPUT SIGNAL

(P)With CONSULT-II

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

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

Without CONSULT-II

Refer to LT-170, "Combination Switch Inspection".

OK or NG

OK >> GO TO 2.

NG >> Check lighting switch. Refer to <u>LT-170</u>, "Combination Switch Inspection".

	DATA MO	ОТІИС	DATA MONITOR				
MONITOR			NC	DTC			
HI BEAN	BEAM SW		ΟN	1			
MODE	BACK	LIGH	т	COPY	PKIA6324E		

2. HEADLAMP ACTIVE TEST

(P)With CONSULT-II

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

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

Without CONSULT-II

- 1. Start auto active test. Refer to PG-24, "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.

ACTIVE TEST				
LAMPS			OFF	
		F		
		-	11	
L	0	FC)G	
MODE	BACK	LIGHT	COPY	SKIA5774E

3. CHECK IPDM E/R

- Select "IPDM E/R" on CONSULT-II, and select "DATA MONI-TOR" on "SELECT DIAG MODE" screen.
- Make sure "HL LO REQ" and "HL HI REQ" turns ON when lighting switch is in HI position.

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

OK or NG

NG

OK

>> Replace IPDM E/R.

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

DATA MONITOR				
MONIT	OR			
HL LO			NON	
			Down ORD	
		REC	OHD	
MODE	BACK	LIGHT	COPY	SKIA5775E

4. CHECK HEADLAMP INPUT SIGNAL

(P)With CONSULT-II

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

	Voltage			
Conr	nector	Terminal (Wire color)	(-)	
RH	RH E25 2 (BR)		Ground	Battery voltage
LH	E41	2 (R/Y)	Giodila	Battery voltage

Front combination lamp connector

Without CONSULT-II

- Turn ignition switch OFF.
- Disconnect front combination lamp RH and LH connector.
- Start auto active test. Refer to PG-24, "Auto Active Test".
- When headlamp high beam is operating, check voltage between front combination lamp RH and LH harness connector and ground.

	Terminals					
	(+)					
Conr	Connector Terminal (Wire color)					
RH	RH E25 2 (BR)		Ground	Battery voltage		
LH	E41	2 (R/Y)	Giodila	Battery voltage		

OK or NG

OK >> GO TO 6.

NG >> GO TO 5. PKIA7012F

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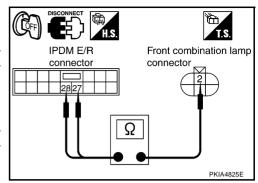
5. CHECK HEADLAMP CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect IPDM E/R connector.
- Check continuity between IPDM E/R harness connector E7 terminal 27 (BR) and front combination lamp RH harness connector E25 terminal 2 (BR).

27 (BR) – 2 (BR) : Continuity should exist.

Check continuity between IPDM E/R harness connector E7 terminal 28 (R/Y) and front combination lamp LH harness connector E41 terminal 2 (R/Y).

28 (R/Y) – 2 (R/Y) : Continuity should exist.



OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness or connector.

6. CHECK HEADLAMP GROUND

 Check continuity between front combination lamp RH harness connector E25 terminal 3 (B/W) and ground.

3 (B/W) – Ground : Continuity should exist.

2. Check continuity between front combination lamp LH harness connector E41 terminal 3 (B/W) and ground.

3 (B/W) – Ground : Continuity should exist.

OK or NG

OK >> Check headlamp bulb.

NG >> Repair harness or connector.

Front combination lamp connector Ω PKIA4823E

Headlamp High Beam Does Not Illuminate (One Side)

1. CHECK BULB

Check bulb of lamp which does not illuminate.

OK or NG

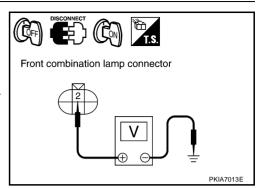
OK >> GO TO 2.

NG >> Replace headlamp bulb.

2. CHECK HEADLAMP INPUT SIGNAL

- Turn ignition switch OFF. 1.
- 2. Disconnect front combination lamp RH or LH connector.
- Turn ignition switch ON.
- Lighting switch is turned HIGH BEAM position. 4.
- Check voltage between front combination lamp RH or LH harness connector and ground.

	Terminals					
	(+)					
Conr	nector	Terminal (Wire color)	(-)			
RH	E25	2 (BR)	Ground	Battery voltage		
LH	E41	2 (R/Y)	Giodila	Battery voltage		



OK or NG

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

3. CHECK HEADLAMP CIRCUIT

- Turn ignition switch OFF.
- Disconnect IPDM E/R connector. 2.
- Check continuity between IPDM E/R harness connector E7 terminal 27 (BR) and front combination lamp RH harness connector E25 terminal 2 (BR).

Check continuity between IPDM E/R harness connector E7 terminal 28 (R/Y) and front combination lamp LH harness connector E41 terminal 2 (R/Y).



OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness or connector.

4. CHECK HEADLAMP GROUND

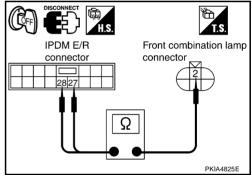
- Check continuity between front combination lamp RH harness connector E25 terminal 3 (B/W) and ground.
 - 3 (B/W) Ground : Continuity should exist.
- Check continuity between front combination lamp LH harness connector E41 terminal 3 (B/W) and ground.

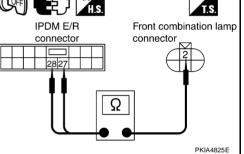
3 (B/W) - Ground : Continuity should exist.

OK or NG

OK >> Check headlamp harness and connector.

NG >> Repair harness or connector.



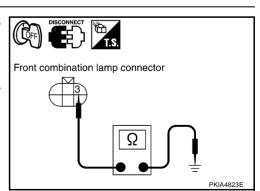


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High Beam Indicator Lamp Does Not Illuminate

1. CHECK BULB

CHECK BULB

Check bulb of high beam indicator lamp.

OK or NG

OK >> Replace combination meter.

NG >> Replace indicator bulb.

Headlamp Low Beam Does Not Illuminate (Both Sides)

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AKS00AOU

1. CHECK COMBINATION SWITCH INPUT SIGNAL

(P)With CONSULT-II

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

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

Without CONSULT-II

Refer to LT-170, "Combination Switch Inspection".

OK or NG

OK >> GO TO 2.

NG >> Check lighting switch. Refer to <u>LT-170, "Combination</u> Switch Inspection".

MONITOR NO DTC

HEAD LAMP SW1 ON

HEAD LAMP SW2 ON

MODE BACK LIGHT COPY

PKIA6325E

DATA MONITOR

2. HEADLAMP ACTIVE TEST

(P)With CONSULT-II

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

Headlamp low beam should operate.

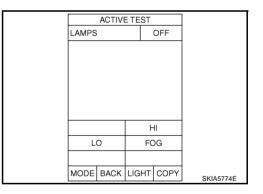
Without CONSULT-II

- Start auto active test. Refer to PG-24, "Auto Active Test".
- 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, and select "DATA MONITOR" on "SELECT DIAG MODE" screen.
- 2. Make sure "HL LO REQ" turns ON when lighting switch is in 2ND position.

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

OK or NG

OK NG

- >> Replace IPDM E/R.
- >> Replace BCM. Refer to BCS-17, "Removal and Installation of BCM".

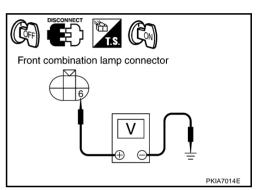
DATA MONITOR				
HL LO	REQ	C	N	
		Page	Down	
		REC		
MODE	BACK	LIGHT	COPY	SKIA5780E

4. CHECK HEADLAMP INPUT SIGNAL

(I) With CONSULT-II

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

	Terminals				
	Voltage				
Conr	Connector Terminal (Wire color)		(-)		
RH	E25	6 (R)	Ground	Battery voltage	
LH	E41	6 (R/B)	Giodila	Dattery Voltage	



Without CONSULT-II

- 1. Turn ignition switch OFF.
- 2. Disconnect front combination lamp RH and LH connector.
- 3. Start auto active test. Refer to PG-24, "Auto Active Test".
- When headlamp low beam is operating, check voltage between front combination lamp RH and LH harness connector and ground.

		Terminals				
		(+)	(-)	Voltage		
Conr	nector	Terminal (Wire color)	(-)			
RH	E25	6 (R)	Ground	Battery voltage		
LH	E41	6 (R/B)	Giodila	Battery voltage		

OK or NG

OK >> GO TO 6.

NG >> GO TO 5.

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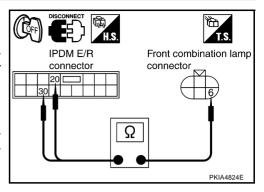
5. CHECK HEADLAMP CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect IPDM E/R connector.
- Check continuity between IPDM E/R harness connector E7 terminal 20 (R) and front combination lamp RH harness connector E25 terminal 6 (R).

20 (R) – 6 (R) : Continuity should exist.

Check continuity between IPDM E/R harness connector E7 terminal 30 (R/B) and front combination lamp LH harness connector E41 terminal 6 (R/B).

30 (R/B) – 6 (R/B) : Continuity should exist.



OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness or connector.

6. CHECK HEADLAMP GROUND

- 1. Turn ignition switch OFF.
- 2. Check continuity between front combination lamp RH harness connector E25 terminal 3 (B/W) and ground.

3 (B/W) – Ground : Continuity should exist.

Check continuity between front combination lamp LH harness connector E41 terminal 3 (B/W) and ground.

3 (B/W) – Ground : Continuity should exist.

OK or NG

OK >> Check headlamp harness and connectors.

NG >> Repair harness or connector.

Headlamp Low Beam Does Not Illuminate (One Side)

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1. CHECK BULB

Check bulb of lamp which does not illuminate.

OK or NG

OK >> GO TO 2.

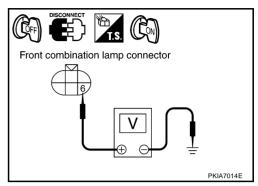
NG >> Repair malfunctioning part.

2. CHECK HEADLAMP INPUT SIGNAL

(P)With CONSULT-II

- 1. Turn ignition switch OFF.
- 2. Disconnect front combination lamp RH and LH connector.
- Select "IPDM E/R" on CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
- 4. Select "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.

		(+)	(-)	Voltage		
Conr	nector	Terminal (Wire color)	(-)			
RH	E25	6 (R)	Ground	Battery voltage		
LH	E41	6 (R/B)	Giouna	Battery voltage		



Without CONSULT-II

- Turn ignition switch OFF.
- 2. Disconnect front combination lamp RH and LH connector.
- 3. Start auto active test. Refer to PG-24, "Auto Active Test".
- 4. When headlamp low beam is operating, check voltage between front combination lamp RH and LH harness connector and ground.

	Terminals								
		(+)	(-)	Voltage					
Conr	nector	Terminal (Wire color)	(-)						
RH	E25	6 (R)	Ground	Battery voltage					
LH	E41	6 (R/B)	Giodila	Battery voltage					

OK or NG

OK >> GO TO 4.

NG >> GO TO 3.

3. CHECK HEADLAMP CIRCUIT

- Turn ignition switch OFF.
- Disconnect IPDM E/R connector and front combination lamp RH or LH connector.
- 3. Check continuity between IPDM E/R harness connector E7 terminal 20 (R) and front combination lamp RH harness connector E24 terminal 6 (R).

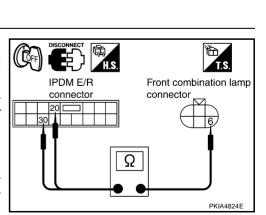
4. Check continuity between IPDM E/R harness connector E7 terminal 30 (R/B) and front combination lamp LH harness connector E41 terminal 6 (R/B).



OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness or connector.



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4. CHECK HEADLAMP GROUND

Check continuity between front combination lamp RH harness connector E25 terminal 3 (B/W) and ground.

> 3 (B/W) - Ground : Continuity should exist.

Check continuity between front combination lamp LH harness connector E41 terminal 3 (B/W) and ground.

> 3 (B/W) - Ground : Continuity should exist.

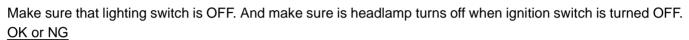
OK or NG

OK >> Check headlamp harness and connector.

NG >> Repair harness or connector.

Headlamps Does Not Turn OFF

1. CHECK HEADLAMP TURN OFF



OK >> GO TO 3.

NG >> GO TO 2.

2. CHECK COMBINATION SWITCH INPUT SIGNAL

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

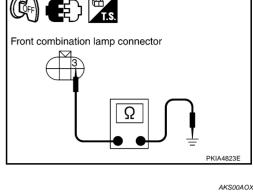
> When lighting switch is OFF : HEAD LAMP SW 1 OFF position : HEAD LAMP SW 2 OFF

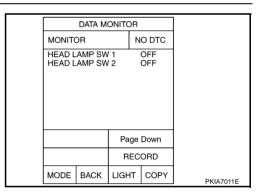
OK or NG

OK >> Replace IPDM E/R.

NG >> Check lighting switch. Refer to LT-170, "Combination

Switch Inspection".



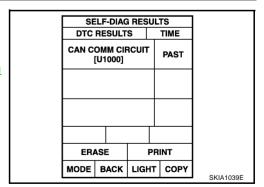


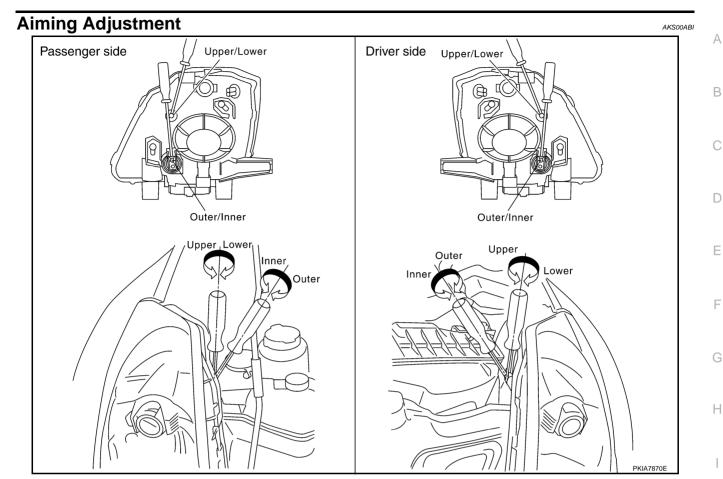
3. CHECKING CAN COMMUNICATIONS BETWEEN BCM AND IPDM E/R

Select "BCM" by CONSULT-II, and perform self-diagnosis for "BCM". Display of self-diagnosis results

NO DTC>> Replace IPDM E/R.

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





PREPARATION BEFORE ADJUSTING

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

- 1. Keep all tires inflated to correct pressures.
- 2. Place vehicle on flat surface.
- 3. Set that there is no-load in vehicle other than the driver (or equivalent weight placed in driver's position). Coolant, engine oil filled up to correct level and full fuel tank.

LOW BEAM AND HIGH BEAM

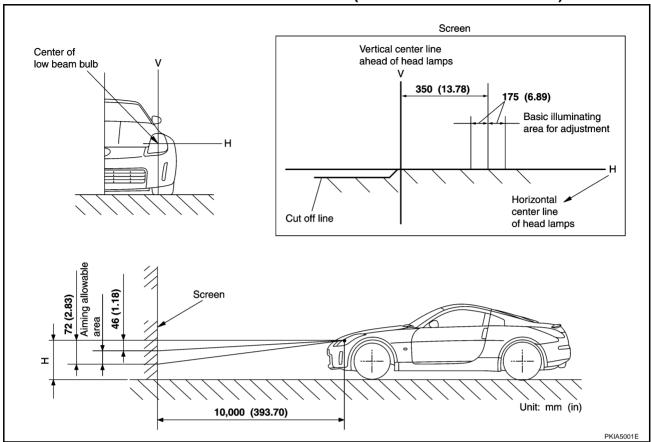
- I. Turn headlamp low beam on.
- Use adjusting screws to perform aiming adjustment.

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ADJUSTMENT USING AN ADJUSTMENT SCREEN (LIGHT/DARK BORDERLINE)



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

Basic illumination area for adjustment should be within the range shown on the aiming chart.
 Adjust headlamp accordingly.

Bulb Replacement HEADLAMP (UPPER) LOW BEAM

AKS00ABJ

- Turn lighting switch OFF.
- 2. Remove fender protector (front). Refer to EI-21, "FENDER PROTECTOR" in "EI" section.
- 3. Turn plastic cap counterclockwise and unlock it.
- 4. Disconnect bulb terminal.
- 5. Unlock retaining spring and remove bulb from headlamp.
- 6. Install in reverse order of removal.

Headlamp (upper) low beam : 12V - 55W (H7) (Halogen)

HEADLAMP (LOWER) HIGH BEAM

- 1. Turn lighting switch OFF.
- 2. Remove fender protector (front). Refer to EI-21, "FENDER PROTECTOR" in "EI" section.
- 3. Turn plastic cap counterclockwise and unlock it.
- 4. Disconnect bulb terminal.
- 5. Unlock retaining spring and remove bulb from headlamp.
- 6. Install in the reverse order of removal.

Headlamp (lower) high beam/Fog lamp : 12V - 55W (H1)

PARKING LAMPS (CLEARANCE LAMPS)

- 1. Turn lighting switch OFF.
- 2. Remove fender protector (front). Refer to EI-21, "FENDER PROTECTOR" in "EI" section.
- 3. Turn bulb socket counterclockwise and unlock it.
- 4. Remove bulb from its socket.
- 5. Install in the reverse order of removal.

Parking lamps (Clearance lamps) : 12V - 5W

FRONT TURN SIGNAL LAMP

- 1. Turn lighting switch OFF.
- 2. Remove fender protector (front). Refer to EI-21, "FENDER PROTECTOR" in "EI" section.
- 3. Turn bulb socket counterclockwise and unlock it.
- 4. Remove bulb from its socket.
- 5. Install in the reverse order of removal.

Front turn signal lamp : 12V - 21W

CAUTION:

After installing bulb, be sure to install plastic cap and bulb socket securely to insure watertightness.

FRONT SIDE MARKER LAMP

- 1. Turn lighting switch OFF.
- 2. Remove fender protector (front). Refer to EI-21, "FENDER PROTECTOR" in "EI" section.
- 3. Turn bulb socket counterclockwise and unlock it.
- 4. Remove bulb from its socket.
- 5. Install in the reverse order of removal.

Front side marker lamp : 12V - 5W

CAUTION:

After installing bulb, be sure to install plastic cap and socket securely to insure watertightness.

Removal and Installation REMOVAL

1. Remove front bumper. Refer to <u>EI-14, "FRONT BUMPER"</u> in "EI" section.

- 2. Remove headlamp mounting bolts.
- 3. Pull headlamp toward vehicle front, disconnect connector, and remove headlamp.

Bolt Bolt PKIA1865E

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INSTALLATION

Install in the reverse order of removal. Be careful of the following:

Headlamp mounting bolt:

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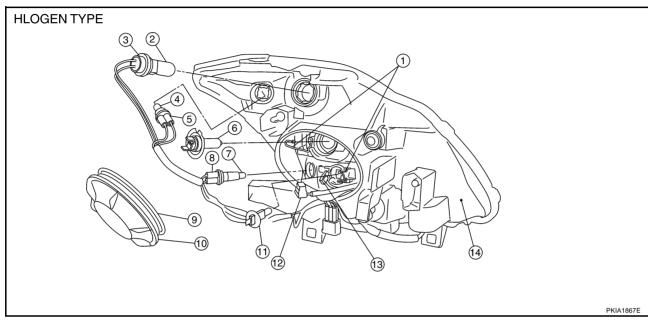
: 6.1 N·m (0.62 kg-m, 54 in-lb)

NOTE:

After installation, perform aiming adjustment. Refer to LT-63, "Aiming Adjustment".

Disassembly and Assembly

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- 1. Retaining spring
- 4. Side marker lamp bulb
- 7. Clearance lamp bulb
- 10. Plastic cap
- 13. Halogen bulb socket (high)
- 2. Front turn signal lamp bulb
- 5. Side marker lamp bulb socket
- 8. Clearance lamp bulb socket
- 11. Halogen bulb (high)
- 14. Headlamp housing assembly
- 3. Front turn signal lamp bulb socket
- 6. Halogen bulb (low)
- 9. Seal rubber
- 12. Halogen bulb socket (low)

DISASSEMBLY

- 1. Turn plastic cap counterclockwise and unlock it.
- 2. Disconnect bulb socket (low).
- 3. Unlock retaining spring, and remove halogen bulb (low).
- 4. Disconnect the socket connected to halogen bulb (high).
- 5. Unlock retaining spring, and remove halogen bulb (high).
- 6. Turn parking lamp bulb socket counterclockwise and unlock it.
- 7. Remove parking lamp bulb from its socket.
- 8. Turn front turn signal lamp bulb socket counterclockwise and unlock it.
- Remove front turn signal lamp bulb from its socket.
- 10. Turn front side marker lamp bulb socket counterclockwise and unlock it
- 11. Remove front side lamp marker lamp bulb from its socket.

ASSEMBLY

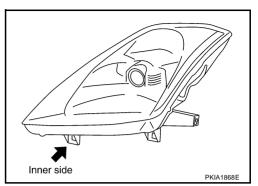
Assemble in reverse order of disassembly. Be careful of the following:

CAUTION:

After installing bulb, be sure to install plastic cap and bulb socket securely to insure watertightness.

Servicing to Replace Headlamps When Damaged

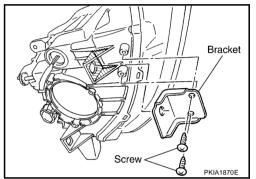
If only installation part as shown in the figure is damaged, and headlamp housing itself is not damaged, repair can be completed easily by installing correction brackets.



INSTALLATION OF HEADLAMP BRACKET

- 1. Remove headlamps. Refer to LT-65, "Removal and Installation".
- Cut damaged section of installation part, then shape with sandpaper.
- 3. Attach each correction bracket to headlamp housing boss with 2 screws.

RH headlamp Inner side 26040 CD000 LH headlamp Inner side 26090 CD000



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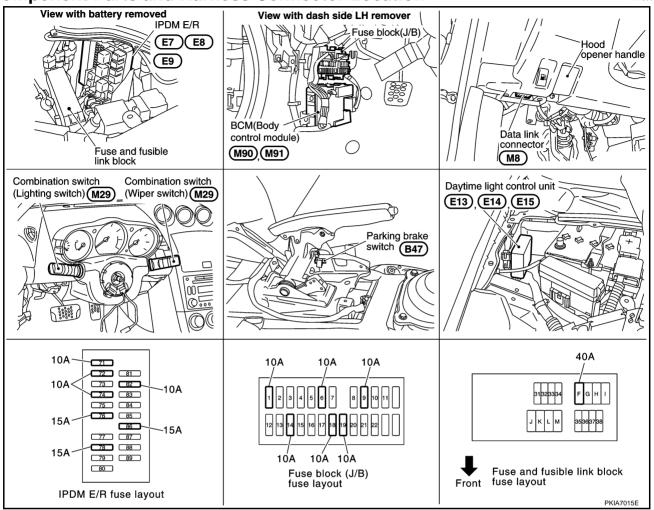
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Component Parts and Harness Connector Location

AKS009N4



System Description

AKS009N

Headlamp system for Canada vehicles is equipped with a daytime light control unit that activates high beam headlamps at approximately half illumination whenever engine is running. If parking brake is applied before engine is started daytime lights will not be illuminated. Daytime lights will illuminate once parking brake is released. Thereafter, daytime lights will continue to operate when parking brake is applied. And battery saver system is controlled by BCM (body control module).

OUTLINE

Power is supplied at all times

- to headlamp high and low relays [located in IPDM E/R (intelligent power distribution module engine room)]
- through 15A fuse [No. 78, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)].

Power is also supplied at all times

- through 40A fusible link [letter F, located in the fuse and fusible link block.]
- to BCM (body control module) terminal 55
- through 10A fuse [No.18, located in fuse block (J/B)]
- to BCM (body control module) terminal 42.

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

- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)]
- through 10A fuse [No. 82, located in IPDM E/R (intelligent power distribution module engine room)]

- to daytime light control unit terminal 3 Α through 10A fuse [No. 1, located in fuse block (J/B)] to BCM (body control module) terminal 38. With ignition switch in ACC or ON position, power is supplied В through 10A fuse [No. 6, located in fuse block (J/B)] to BCM (body control module) terminal 11. With ignition switch in START position, power is supplied through 10A fuse [No. 9, located in fuse block (J/B)] to daytime light control unit terminal 2. Ground is supplied to daytime light control unit terminals 14 and 16 through groundsE17, E43 and F152 F to IPDM E/R (intelligent power distribution module engine room) terminals 38 and 60 through grounds E17, E43 and F152 to BCM (body control module) terminal 52 F through grounds M30 and M66. **HEADLAMP OPERATION Low Beam Operation** With lighting switch in 2ND position, BCM receives input signal requesting headlamps to illuminate. This input signal is communicated to IPDM E/R across CAN communication lines. CPU in IPDM E/R controls headlamp low relay coil, which when energized, directs power Н through 15A fuse [No. 76, located in IPDM E/R] through IPDM E/R terminal 20 to front combination lamp RH terminal 7, and through 15A fuse [No. 86, located in IPDM E/R] through IPDM E/R terminal 30 J to front combination lamp LH terminal 7. Ground is supplied at all times to front combination lamp RH terminal 8 through grounds E17, E43 and F152, and to front combination lamp LH terminal 8 through grounds E17, E43 and F152. With power and ground supplied, low beam headlamps illuminate. High Beam Operation (When Engine Stopped) /Flash-to-Pass Operation With lighting switch in 2ND position and placed in HIGH or PASS position. BCM receives input signal requesting headlamp high beams to illuminate. This input signal is communicated to IPDM E/R across CAN communication lines. CPU in IPDM E/R controls headlamp high relay coil turned on, which when energized, directs power through 15A fuse [No. 76, located in IPDM E/R] through IPDM E/R terminal 20 to front combination lamp RH terminal 7, and through 15A fuse [No. 86, located in IPDM E/R]
- through IPDM E/R terminal 30
- to front combination lamp LH terminal 7
- through 10A fuse [No.74, located in IPDM E/R]
- through IPDM E/R terminal 28
- to daytime light control unit terminal 4
- through daytime light control unit terminal 7
- to front combination lamp LH terminal 3

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- through 10A fuse [No.72, located in IPDM E/R]
- through IPDM E/R terminal 27
- to daytime light control unit terminal 5
- through daytime light control unit terminal 6
- to front combination lamp RH terminal 3.

Ground is supplied

- to front combination lamp LH terminal 4
- through daytime light control unit terminal 9
- to daytime light control unit terminal 14
- through grounds E17, E43 and F152
- to front combination lamp RH terminal 4
- through grounds E17, E43 and F152.

With power and ground supplied, high beam headlamps illuminate.

Unified meter and A/C amp. receives signal from BCM across CAN communication lines, and then combination meter indicator illuminates high beam.

COMBINATION SWITCH READING FUNCTION

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

EXTERIOR LAMP BATTERY SAVER CONTROL

When combination switch (lighting switch) is in the 2ND position (ON), and ignition switch is turned from ON or ACC to OFF, battery saver control function is activated.

Under this condition, headlamps remain illuminated for 5 minutes, then headlamps are turned off.

Exterior lamp battery saver control mode can be changed by function setting of CONSULT-II.

DAYTIME LIGHT OPERATION

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

- through daytime light control unit terminal 7
- to front combination lamp LH terminal 3
- through front combination lamp LH terminal 4
- to daytime light control unit terminal 9
- through daytime light control unit terminal 6
- to front combination lamp RH terminal 3.

Ground is supplied

- to front combination lamp RH terminal 4
- through grounds E17, E43 and F152, and
- to daytime light control unit terminal 14
- through grounds E17, E43 and F152.

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

If the lighting switch is in the 2nd position, daytime light operation is canceled.

OPERATION

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

Eng	jine		With engine stopped							With engine running									
Lighting switch			OFF			1ST		2ND OFF 1ST					2ND						
		Hi	Lo	Р	Hi	Lo	Р	Hi	Lo	Р	Hi	Lo	Р	Hi	Lo	Р	Hi	Lo	Р
Head- lamp Low beam		-	_	_	-	_	×	×	_	×	•*	•*	×	•*	•*	×	×	_	×
	_	_	_	_	_	_	×	×	×	×	_	ı	×	_	_	×	×	×	×

Engine	With engine stopped									With engine running								
Lighting switch		OFF			1ST	T 2ND OFF 1ST					2ND							
	Hi	Lo	Р	Hi	Lo	Р	Hi	Lo	Р	Hi	Lo	Р	Hi	Lo	Р	Hi	Lo	Р
Tail lamp	_	-	-	×	×	×	×	×	×	_	_	_	×	×	×	×	×	×
License and instru- ment illumination lamp	_	_	_	×	×	×	×	×	×	_	_	ı	×	×	×	×	×	×

- Hi: "HIGH BEAM" position
- Lo: "LOW BEAM" position
- P: "FLASH TO PASS" position
- ×: Lamp "ON"
- –: Lamp "OFF"
- •: Lamp dims. (Added functions)
- *: When starting the engine with the parking brake released, the daytime light will come ON.
 When starting the engine with the parking brake pulled, the daytime light will not come ON.

XENON HEADLAMP

Xenon type headlamp is adopted to low beam headlamps. Xenon bulbs do not use a filament. Instead, they produce light when a high voltage current is passed between two tungsten electrodes through a mixture of xenon (an inert gas) and certain other metal halides. In addition to added lighting power, electronic control of the power supply gives headlamps stable quality and tone color.

Following are some of the many advantages of xenon type headlamp.

- The light produced by headlamps is a white color comparable to sunlight that is easy on the eyes.
- Light output is nearly double that of halogen headlamps, affording increased area of illumination.
- The light features a high relative spectral distribution at wavelengths to which the human eye is most sensitive. This means that even in the rain, more light is reflected back from the road surface toward the vehicle, for added visibility.
- Power consumption is approximately 25 percent less than halogen headlamps, reducing battery load.

CAN Communication System Description

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other

control units are equipped onto a venicle, and each control unit snares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Unit

Refer to LAN-5, "CAN Communication Unit".

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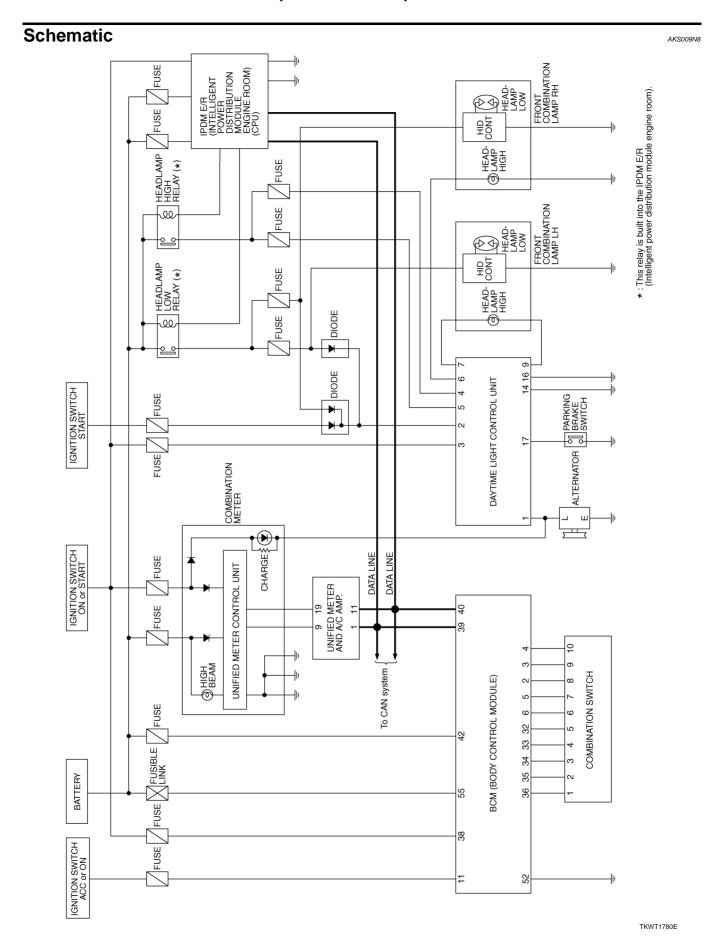
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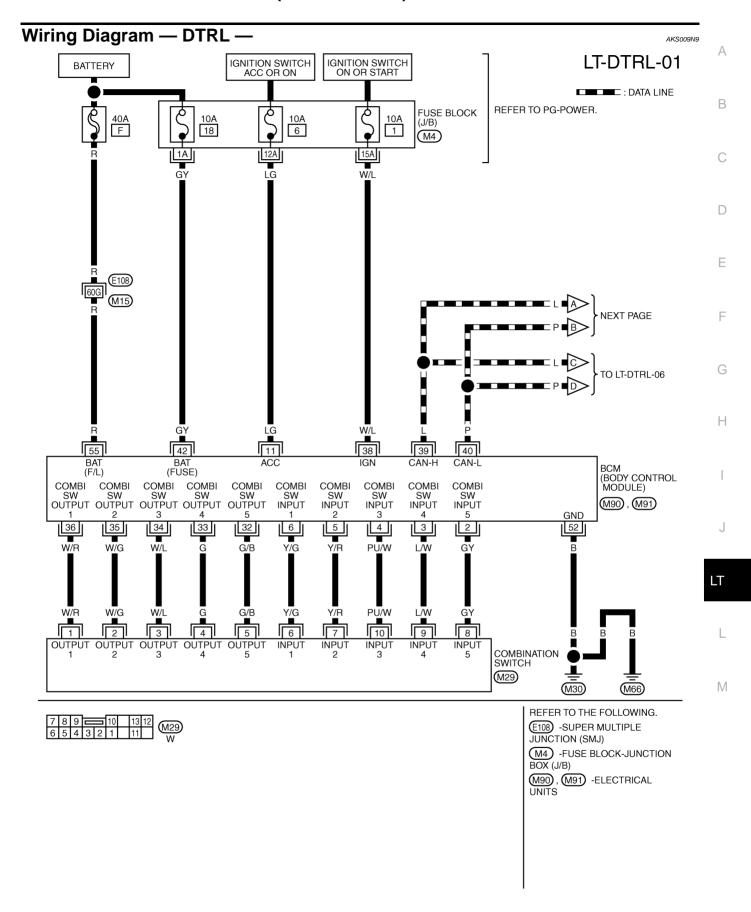
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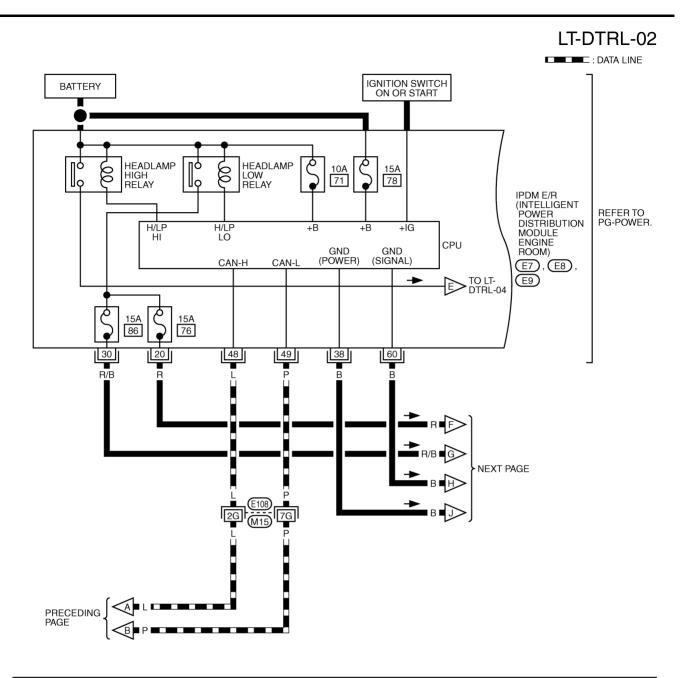
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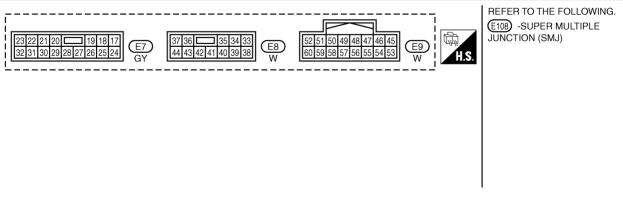
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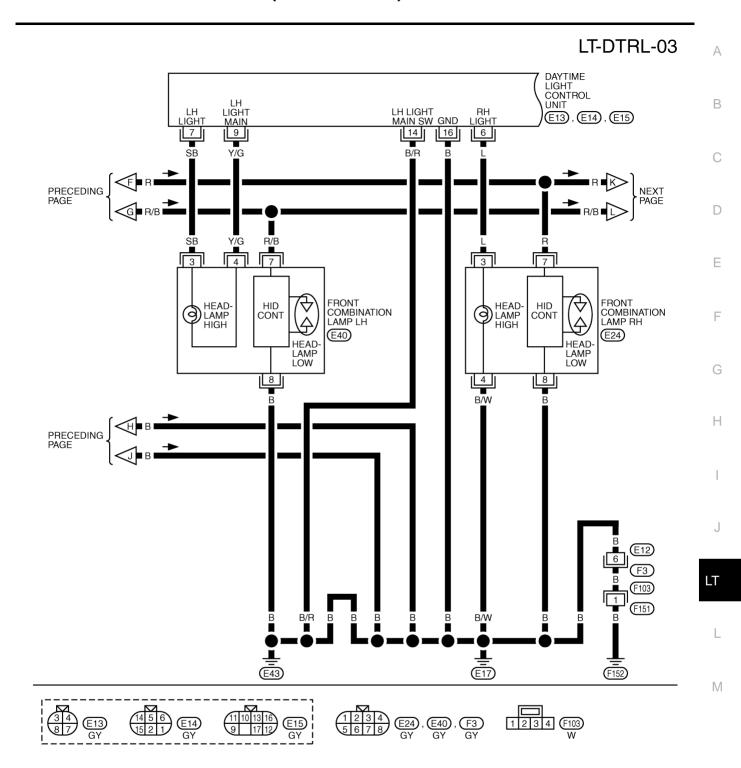


TKWT1781E



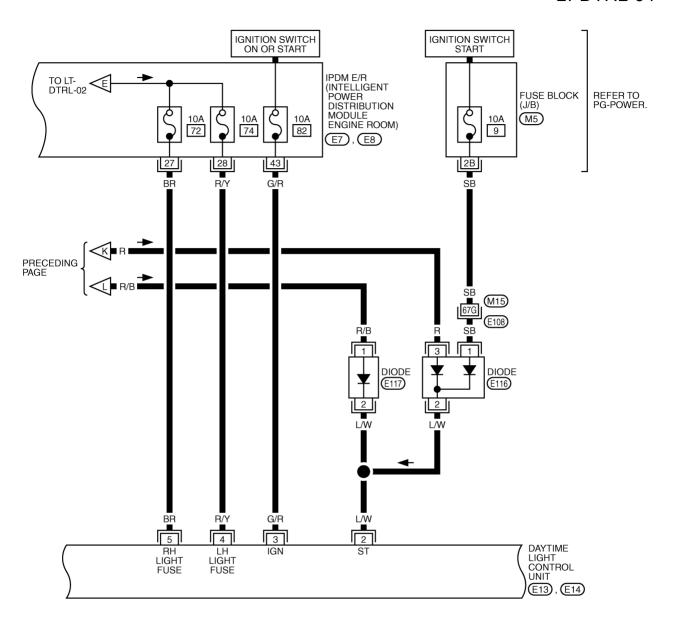


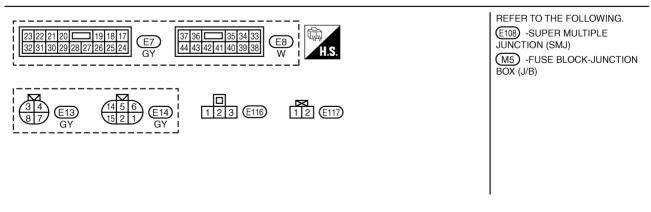
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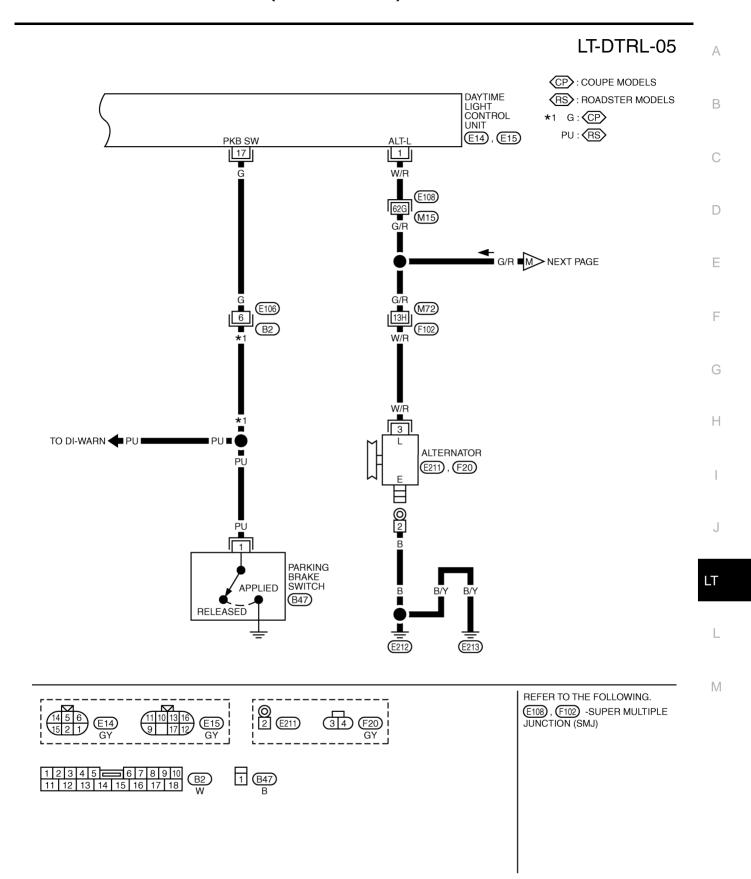
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LT-DTRL-04



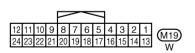


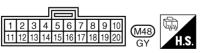
TKWT1784E



TKWT1589E

LT-DTRL-06 : DATA LINE IGNITION SWITCH ON OR START BATTERY FUSE BLOCK (J/B) REFER TO PG-POWER. 10A 14 19 $\overline{M4}$ BA R/W TO LT-DTRL-01 TO LAN-CAN R/G L/OR R/W HIGH BEAM COMBINATION METER UNIFIED METER CONTROL UNIT (M19) **\$**CHARGE 10 [11] 12 R/G 19 11 9 UNIFIED METER AND A/C AMP. CAN-H CAN-L TX RX (COMB (COMB METER) METER) (M48) PRECEDING M G/R M30 (M66)





REFER TO THE FOLLOWING.

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

TKWT1730E

emm	aเร สก	d Reference Values	IOI BU	IVI	AKS00AOY
T!1	\A/:			Measuring condition	
Terminal No.	Wire color	Signal name	Ignition switch	Operation or condition	Reference value
2	GY	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 64 2 0 **5ms SKIA5291E
3	L/W	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 *5ms
4	PU/W	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 ***5ms
5	Y/R	Combination switch input 2			(V)
6	Y/G	Combination switch input 1	ON	Lighting, turn, wiper OFF Wiper dial position 4	5ms SKIA5292E
11	LG	Ignition switch (ACC)	ACC	_	Battery voltage
32	G/B	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 4 2 0 +-5ms SKIA5291E
33	G	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 ***5ms SKIA5292E
34	W/L	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 ***5ms

Terminal	Wire		Measuring condition			
No.	color	Signal name	Ignition switch	Operation or condition	Reference value	
35	W/G	Combination switch output 2			40	
36	W/R	Combination switch output 1	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 ***5ms	
38	W/L	Ignition switch (ON)	ON	_	Battery voltage	
39	L	CAN-H	_	_	_	
40	Р	CAN-L	_	_	_	
42	GY	Battery power supply	OFF	_	Battery voltage	
52	В	Ground	ON	_	Approx. 0V	
55	R	Battery power supply	OFF	_	Battery voltage	

Terminals and Reference Values for IPDM E/R

AKS009QR

Terminal	Wire		Measuring condition				
No.	color	Signal name	Ignition switch	Operation or condition		Reference value	
20	R	Headlamp low (RH)	ON	Lighting switch 2ND	OFF	Approx. 0V	
20	K	neadiamp low (Kn)	ON	position	ON	Battery voltage	
27	BR	Handlams high (DH)	ON	Lighting switch HIGH or	OFF	Approx. 0V	
21	DK	Headlamp high (RH)	ON PASS position		ON	Battery voltage	
20	DW	Headlews bish (LLI)	ON Lighting switch HIGH or PASS position	OFF	Approx. 0V		
28	R/Y	Headlamp high (LH)		PASS position	ON	Battery voltage	
30	R/B		ON	ON Lighting switch 2ND position		Approx. 0V	
30	K/B	Headlamp low (LH)	ON			Battery voltage	
38	В	Ground	ON	_		Approx. 0V	
43	G/R	Ignition switch (ON)	ON	_		Battery voltage	
48	L	CAN- H	_	_		_	
49	Р	CAN-L	_	_		_	
60	В	Ground	ON	_		Approx. 0V	

Ferminals and Reference Value for Daytime Light Control Unit				
Terminal No.	Wire color	Item	Condition	Reference value
			When turning ignition switch to "ON"	Approx. 0V
1	W/R	Alternator	When engine is running	Battery voltage
			When turning ignition switch to "OFF"	Approx. 0V
			When turning ignition switch to "START"	Battery voltage
2	L/W	Start signal	When turning ignition switch to "ON" from "START"	Approx. 0V
			When turning ignition switch to "OFF"	Approx. 0V
3	G/R	Ignition power supply	When turning ignition switch to "ON"	Battery voltage
4	R/Y	Lighting switch (LH hi beam)	When turning lighting switch to "HI BEAM"	Battery voltage
5	BR	Lighting switch (RH hi beam)	When turning lighting switch to "HI BEAM"	Battery voltage
			When lighting switch is turned to the 2ND position with "HI BEAM" or "FLASH TO PASS" position	Battery voltage
6	L	RH hi beam	When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) CAUTION: Block wheels and ensure selector lever is in N or P position.	Battery voltage
			When lighting switch is turned to the 2ND position with "HI BEAM" or "FLASH TO PASS" position	Battery voltage
7	SB	LH hi beam	When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) CAUTION: Block wheels and ensure selector lever is in N or P position.	Battery voltage
			When turning lighting switch to the 2ND position with "HI BEAM" or "FLASH TO PASS" position	Approx. 0V
9	Y/G	LH hi beam (ground)	When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) CAUTION: Block wheels and ensure selector lever is in N or P position.	Approx. 0V
14	B/R	Ground	_	_
16	В	Ground	_	_
47	0	Dadia a basha sa 'a l	When parking brake is released	Battery voltage
17	G	Parking brake switch	When parking brake is allied	Approx. 0V

How to Proceed With Trouble Diagnosis

AKS009NB

- 1. Confirm the symptom or customer complaint.
- 2. Understand operation description and function description. Refer to LT-68, "System Description".
- 3. Perform the preliminary check. Refer to LT-82, "Preliminary Check".
- 4. Check symptom and repair or replace the cause of malfunction.
- 5. Does headlamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
- 6. INSPECTION END

Preliminary Check CHECK POWER SUPPLY AND GROUND CIRCUIT

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1. CHECK FUSES

Check for blown fuses.

UNIT	POWER SOURCE	Fuse and fusible link No.
	Potton	F
BCM	Battery	18
DCIVI	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
		72
	Battery	74
IPDM E/R	Battery	76
		86
	Ignition switch ON or START	82
DAYTIME LIGHT CONTROL UNIT	Ignition switch START position	9

Refer to LT-73, "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".

2. CHECK POWER SUPPLY CIRCUIT

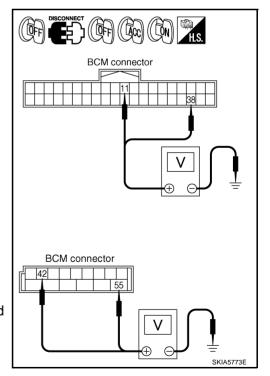
- 1. Disconnect BCM connector.
- 2. Check voltage between BCM harness connector and ground.

	Terminals		Ignition switch position		
	(+)				
Connector	Terminal (Wire color)	(-)	OFF	ACC	ON
M90	11 (LG)	Ground	0V	Battery voltage	Battery voltage
WISO	38 (W/L)		0V	0V	Battery voltage
M91	42 (GY)	Glound	Battery voltage	Battery voltage	Battery voltage
	55 (R)		Battery voltage	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3

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



3. CHECK GROUND CIRCUIT

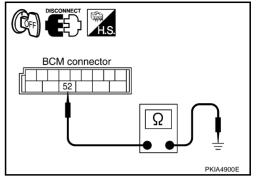
Check continuity between BCM harness connector and ground.

	Continuity		
Connector	Terminal (Wire color)	Ground	Continuity
M91	52 (B)	Giodila	Yes

OK or NG

OK >> INSPECTION END

NG >> Check ground circuit harness.



CONSULT-II Functions (BCM)

CONSULT-II performs the following functions communicating with BCM.

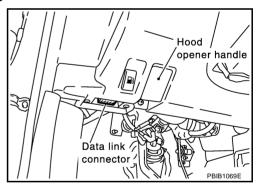
BCM diagnosis part	Check item, diagnosis mode	Description		
	WORK SUPPORT	Changes the setting for each function.		
HEADLAMP	DATA MONITOR Displays BCM input data in real time.			
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.		
BCM CAN DIAG SUPPORT MNTR The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

CONSULT-II BASIC OPERATION

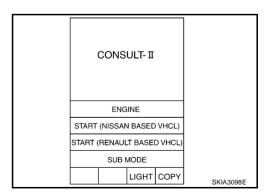
CAUTION:

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.

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



Touch "START(NISSAN BASED VHCL)".



Touch "BCM" on "SELECT SYSTEM" screen.

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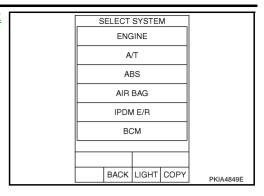
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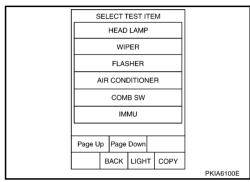
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If "BCM" is not indicated, refer to GI-39, "CONSULT-II Data Link Connector (DLC) Circuit".



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



WORK SUPPORT

Operation Procedure

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

Display Item List

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

DATA MONITOR

Operation Procedure

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

ALL SIGNALS	Monitors all the signals.
SELECTIONFROMMENU	Selects and monitors individual signal.

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

Monitor item		Contents
IGN ON SW	"ON/OFF"	Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from the ignition switch signal.
ACC ON SW	"ON/OFF"	Displays "ACC (ON)/OFF, Ignition OFF (OFF)" status judged from ignition switch signal.
HI BEAM SW	"ON/OFF"	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
HEAD LAMP SW 1	"ON/OFF"	Displays status (headlamp switch 1: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
HEAD LAMP SW 2	"ON/OFF"	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
LIGHT SW 1 ST	"ON/OFF"	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
AUTO LIGHT SW ^{NOTE}	"ON/OFF"	_
PASSING SW	"ON/OFF"	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW ^{NOTE}	"ON/OFF"	_
DOOR SW - DR	"ON/OFF"	Displays status of driver door as judged from driver door switch signal. (Door is open: ON/ Door is closed: OFF)
DOOR SW - AS	"ON/OFF"	Displays status of passenger door as judged from passenger door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RR ^{NOTE}	"OFF"	_
DOOR SW - RL ^{NOTE}	"OFF"	-
		Displays status of back door as judged from back door switch signal. (Coupe models)
BACK DOOR SW	"ON/OFF"	 Displays status of rear trunk hood as judged from trunk lamp switch signal. (Roadster models)
TURN SIGNAL R	"ON/OFF"	Displays status (Turn right: ON/Others: OFF) as judged from lighting switch signal.
TURN SIGNAL L	"ON/OFF"	Displays status (Turn left: ON/Others: OFF) as judged from lighting switch signal.
CARGO LAMP SW ^{NOTE}	"OFF"	-

NOTE:

This item is displayed, but cannot monitor it.

ACTIVE TEST

Operation Procedure

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

Display Item List

Test item	Description
TAIL LAMP	Allows tail lamp relay to operate by switching ON–OFF.
HEAD LAMP	Allows headlamp relay to operate by switching ON–OFF.
FR FOG LAMP ^{NOTE}	_
CORNERING LAMP ^{NOTE}	_

NOTE:

This item is displayed, but cannot test it.

CONSULT-II Functions (IPDM E/R)

CONSULT-II performs the following functions communicating with IPDM E/R.

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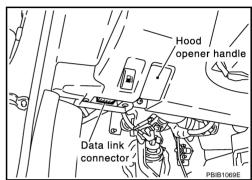
Check Item, Diagnosis Mode	Description
SELF-DIAGNOSTIC RESULTS	IPDM E/R performs self-diagnosis of CAN communication.
DATA MONITOR	The input/output data of IPDM E/R is displayed in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST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

CONSULT-II BASIC OPERATION

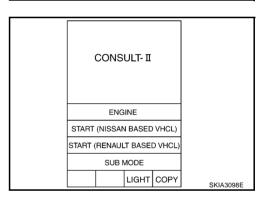
CAUTION:

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

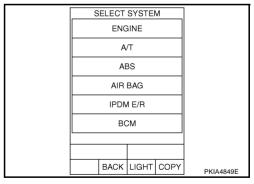
 With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



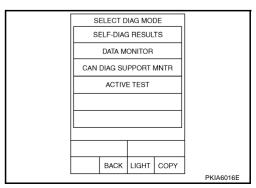
2. Touch "START (NISSAN BASED VHCL)".



3. Touch "IPDM E/R" on "SELECT SYSTEM" screen. If "IPDM E/R" is not displayed, print "SELECT SYSTEM" screen, then refer to GI-39, "CONSULT-II Data Link Connector (DLC) Circuit".



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



DATA MONITOR

Operation Procedure

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

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

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

All Signals, Main Signals, Selection From Menu

			M	onitor item s	election	
Item name	CONSULT-II screen display	Display or unit	ALL SIG- NALS	MAIN SIGNALS	SELECTION FROM MENU	Description
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

NOTE:

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

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ACTIVE TEST

Operation Procedure

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

Test item	CONSULT-II screen display	Description
Tail lamp relay output	TAIL LAMP	Allows tail lamp relay to operate by switching operation ON-OFF at your option.
Headlamp relay (HI, LO) output	LAMPS	Allows headlamp relay (HI, LO) to operate by switching operation (OFF, HI ON, LO ON) at your option (Headlamp high beam repeats ON– OFF every 1 second).

SELF-DIAGNOSTIC RESULTS

Refer to PG-21, "SELF-DIAG RESULTS".

Daytime Light Control Does Not Operate Properly

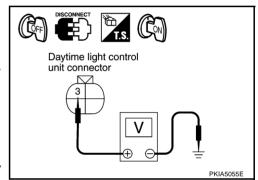
1. CHECK DAYTIME LIGHT CONTROL UNIT

- 1. Turn ignition switch OFF.
- 2. Disconnect daytime light control unit connectors.
- 3. Turn ignition switch ON.
- Check voltage between daytime light control unit harness connector E13 terminal 3 (G/R) and ground.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace daytime light control unit power supply circuit harness.



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2. CHECK DAYTIME LIGHT CONTROL UNIT AND GROUND

1. Check continuity between daytime light control unit harness connector E14 terminal 14 (B/R) and ground.

14 (B/R) – Ground : Continuity should exist.

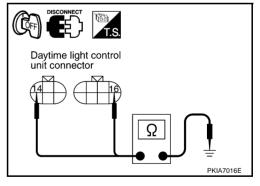
2. Check continuity between daytime light control unit harness connector E15 terminal 16 (B) and ground.

16 (B) – Ground : Continuity should exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.



3. CHECK PARKING BRAKE SWITCH CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect daytime light control unit connector and parking brake switch connector.
- 3. Check harness continuity between daytime light control unit harness connector E15 terminal 17 (G) and parking brake switch harness connector B47 terminal 1 (PU).

17 (G) - 1 (PU)

: Continuity should exist.

OK or NG

OK >> GO TO 4.

NG >> Repair harness or connector.

4. CHECK PARKING BRAKE SWITCH

- Connect daytime light control unit connector and parking brake switch connector.
- 2. Turn ignition switch ON.
- Check voltage between parking brake switch connector B47 terminal 1 (PU) and ground, when parking brake is released.

1 (PU) – Ground : Battery voltage should exist.

 Check voltage between parking brake switch connector B47 terminal 1(PU) and ground, when parking brake is applied.

1 (PU) – Ground : Approx. 0V

OK or NG

OK >> GO TO 5.

NG >> Replace parking brake switch.

5. CHECK ALTERNATOR CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect daytime light control unit connector.
- Start engine running.
- Check voltage between daytime light control unit harness connector E14 terminal 1 (W/R) and ground.

1 (W/R) – Ground : Battery voltage should exist.

OK or NG

OK >> GO TO 6.

NG >> Repair harness or connector.

6. CHECK DAYTIME LIGHT CONTROL UNIT CIRCUIT

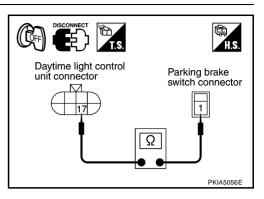
- Turn ignition switch OFF.
- Disconnect daytime light control unit connector and front combination lamp RH connector.
- Check harness continuity between daytime light control unit harness connector E14 terminal 6 (L) and front combination lamp RH harness connector E24 terminal 3 (L).

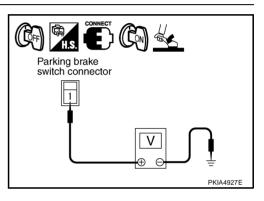
6 (L) – 3 (L) : Continuity should exist.

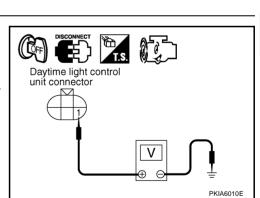
OK or NG

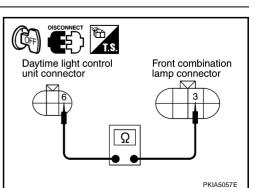
OK >> Replace daytime light control unit.

NG >> Repair harness or connector.









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Headlamp High Beam Does Not Illuminate (Both Sides)

1. CHECK COMBINATION SWITCH INPUT SIGNAL

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(P)With CONSULT-II

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

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

Without CONSULT-II

Refer to LT-170, "Combination Switch Inspection".

OK or NG

OK >> GO TO 2.

NG >> Check lighting switch. Refer to <u>LT-170, "Combination</u> Switch Inspection".

	DATA MONITOR				
MON	TOR		N	DTC	
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2. HEADLAMP ACTIVE TEST

With CONSULT-II

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

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

Without CONSULT-II

- Start auto active test. Refer to PG-24, "Auto Active Test".
- Make sure headlamp high beam operation.

Headlamp high beam should operate.

OK or NG

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

3. CHECK IPDM E/R

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

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

OK or NG

NG

OK >> Replace IPDM E/R.

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

I	DATA M	ONITOR		
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MODE	BACK	LIGHT	COPY	SKIA5775E

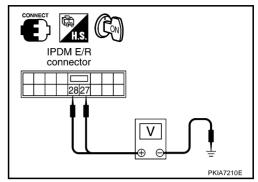
	ACTIVE			
LAMPS	AMPS OFF		OFF	
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MODE	BACK	LIGHT	COPY	SKIA5774E

4. CHECK HEADLAMP INPUT SIGNAL

(II) With CONSULT-II

- Select "IPDM E/R" on CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
- 2. Select "LAMPS" on "SELECT TEST ITEM" screen.
- 3. Touch "HI" screen.
- When headlamp high beam is operating, check voltage between front combination lamp RH and LH harness connector and ground (Headlamp high beam repeats ON-OFF every 1 second).

	Terminals					
	()	Voltage				
Connector	Terminal (Wire color)	(-)				
F7	27 (BR)	Ground	Pattory voltage			
E1	28 (R/Y)	Giodila	Battery voltage			



Without CONSULT-II

- 1. Start auto active test. Refer to PG-24, "Auto Active Test".
- 2. When headlamp high beam is operating, check voltage between front combination lamp RH and LH harness connector and ground.

	(-)	Voltage	
Connector	Terminal (Wire color)	(-)	
F7	27 (BR)	Ground	Battery voltage
Li	28 (R/Y)	Giodila	

OK or NG

OK >> Check headlamp bulbs.

NG >> GO TO 5.

5. CHECK IPDM E/R CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect IPDM E/R connector.
- 3. Check harness continuity between IPDM E/R harness connector E7 terminal 28 (R/Y) and daytime light control unit harness connector E13 terminal 4 (R/Y).

 Check harness continuity between IPDM E/R harness connector E7 terminal 27 (BR) and daytime light control unit harness connector E14 terminal 5 (BR).

27 (BR) – 5 (BR) : Continuity should exist.

OK or NG

OK >> Replace daytime light control unit.

NG >> Repair harness or connector.

IPDM E/R connector unit connector unit connector

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RH High Beam Does Not Illuminate But RH Low Beam Illuminates

AKS009NG

1. CHECK BULB

OK or NG

OK >> GO TO 2.

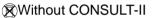
NG >> Replace headlamp bulb.

2. CHECK HEADLAMP INPUT SIGNAL

(P)With CONSULT-II

- 1. Connect daytime light control unit connector.
- 2. Select "IPDM E/R" on CONSULT-II and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
- 3. Touch "HI" screen.
- When headlamp high beam is operating, check voltage between front combination lamp RH harness connector E24 terminal 3 (L) and ground (Headlamp high beam repeats ON–OFF every 1 second).





- 1. Start auto active test. Refer to PG-24, "Auto Active Test".
- 2. When headlamp high beam is operating, check voltage between front combination lamp RH harness connector E24 terminal 3 (L) and ground.



OK or NG

OK >> GO TO 6.

NG >> GO TO 3.

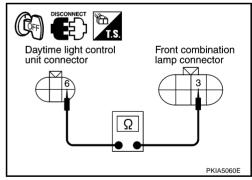
3. CHECK DAYTIME LIGHT CONTROL CIRCUIT

- 1. Disconnect daytime light control unit connector and front combination lamp RH connector.
- 2. Check continuity between daytime light control unit harness connector E14 terminal 6 (L) and front combination lamp RH harness connector E24 terminal 3 (L).

OK or NG

OK >> GO TO 4.

NG >> Repair harness or connector.



4. CHECK DAYTIME LIGHT CONTROL UNIT INPUT SIGNAL

(P)With CONSULT-II

- Disconnect daytime light control unit connector.
- Select "IPDM E/R" on CONSULT-II and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
- 3. Touch "HI" screen.
- 4. When headlamp high beam is operating, check voltage between daytime light control unit harness connector E14 terminal 5 (BR) and ground (Headlamp high beam repeats ON–OFF every 1 second).
 - 5 (BR) Ground : Battery voltage should exist.

Without CONSULT-II

- Start auto active test. Refer to <u>PG-24, "Auto Active Test"</u>.
- 2. When headlamp high beam is operating, check voltage between daytime light control unit harness connector E14 terminal 5 (BR) and ground.

5 (BR) – Ground : Battery voltage should exist.

OK or NG

OK >> Replace daytime light control unit.

NG >> GO TO 5.

5. CHECK IPDM E/R CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect IPDM E/R connector.
- Check harness continuity between IPDM E/R harness connector E7 terminal 27 (BR) and daytime light control unit harness connector E14 terminal 5 (BR).

OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness or connector.

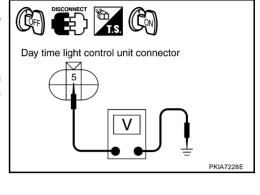
6. CHECK HEADLAMP GROUND

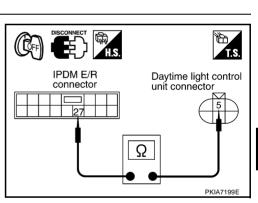
Check continuity between front combination lamp RH harness connector E24 terminal 4 (B/W) and ground.

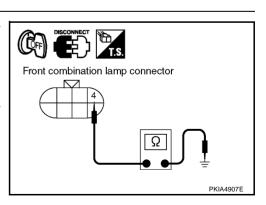
OK or NG

OK >> Check headlamp harness and connector and headlampbulbs.

NG >> Repair harness or connector.







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LH High Beam Does Not Illuminate But LH Low Beam Illuminates

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1. CHECK BULB

Inspect bulb of lamp.

OK or NG

OK >> GO TO 2.

NG >> Replace bulb of lamp.

2. CHECK HEADLAMP INPUT SIGNAL

(P)With CONSULT-II

- 1. Connect daytime light control unit connector.
- 2. Select "IPDM E/R" on CONSULT-II and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
- 3. Touch "HI" screen.
- 4. When headlamp high beam is operating, check voltage between front combination lamp LH harness connector E40 terminal 3 (SB) and ground (Headlamp high beam repeats ON–OFF every 1 second).



Without CONSULT-II

- 1. Start auto active test. Refer to PG-24, "Auto Active Test".
- 2. When headlamp high beam is operating, check voltage between front combination lamp LH harness connector E40 terminal 3 (SB) and ground.



OK or NG

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

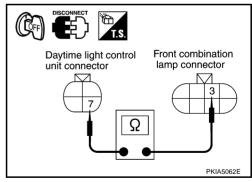
3. CHECK DAYTIME LIGHT CONTROL UNIT CIRCUIT

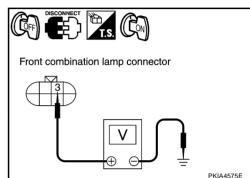
- 1. Disconnect daytime light control unit connector and front combination lamp LH connector.
- 2. Check continuity between daytime light control harness connector E13 terminal 7 (SB) and front combination lamp LH harness connector E40 terminal 3 (SB).

OK or NG

OK >> GO TO 4.

NG >> Repair harness or connector.





4. CHECK DAYTIME LIGHT CONTROL UNIT INPUT SIGNAL

(P)With CONSULT-II

- Disconnect daytime light control unit connector.
- Select "IPDM E/R" on CONSULT-II and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
- Touch "HI" screen.
- When headlamp high beam is operating, check voltage between daytime light control unit harness connector E13 terminal 4 (R/ Y) and ground (Headlamp high beam repeats ON-OFF every 1 second).

4 (R/Y) - Ground : Battery voltage should exist.

Day time light control unit connector

Without CONSULT-II

- Start auto active test. Refer to PG-24, "Auto Active Test".
- 2. When headlamp high beam is operating, check voltage between daytime light control unit harness connector E13 terminal 4 (R/Y) and ground.

4 (R/Y) - Ground : Battery voltage should exist.

OK or NG

OK >> Replace daytime light control unit.

NG >> GO TO 5.

5. CHECK IPDM E/R CIRCUIT

- Turn ignition switch OFF.
- Disconnect IPDM E/R connector.
- Check harness continuity between IPDM E/R harness connector E7 terminal 28 (R/Y) and daytime light control unit harness connector E13 terminal 4 (R/Y).

28 (R/Y) - 4 (R/Y): Continuity should exist.

OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness or connector.

IPDM E/R Daytime light control connector unit connector Ω PKIA7108F

6. CHECK DAYTIME LIGHT CONTROL UNIT CIRCUIT

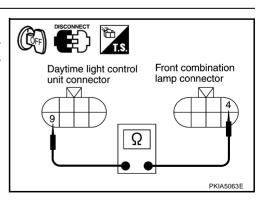
- Disconnect daytime light control unit connector.
- Check continuity between daytime light control harness connector E15 terminal 9 (Y/G) and front combination lamp LH harness connector E40 terminal 4 (Y/G).

9 (Y/G) - 4 (Y/G): Continuity should exist.

OK or NG

OK >> GO TO 7.

NG >> Repair harness or connector.



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7. CHECK DAYTIME LIGHT CONTROL UNIT GROUND

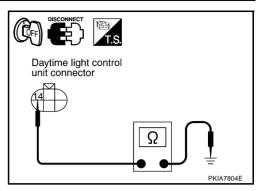
Check continuity between daytime light control unit harness connector E14 terminal 14 (B/R) and ground.

14 (B/R) – Ground : Continuity should exist.

OK or NG

OK >> Replace daytime light control unit.

NG >> Repair harness or connector.



AKS00ABP

Headlamp Low Beam Does Not Illuminate (Both Sides)

1. CHECK COMBINATION SWITCH INPUT SIGNAL

(P)With CONSULT-II

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

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

Without CONSULT-II

Refer to LT-170, "Combination Switch Inspection".

OK or NG

OK >> GO TO 2.

NG >> Check lighting switch. Refer to <u>LT-170, "Combination Switch Inspection"</u>.

DATA MONITOR MONITOR NO DTC HEAD LAMP SW1 ON HEAD LAMP SW2 ON MODE BACK LIGHT COPY PKIA6325E

2. HEADLAMP ACTIVE TEST

(P)With CONSULT-II

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

Headlamp low beam should operate.

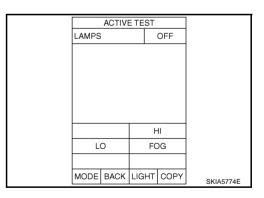
Without CONSULT-II

- Start auto active test. Refer to PG-24, "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 and select "DATA MONITOR" on "SELECT DIAG MODE" screen.
- 2. Make sure "HL LO REQ" turns ON when lighting switch is in 2ND position.

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

OK or NG

OK

- >> Replace IPDM E/R.
- NG >> Replace BCM. Refer to BCS-17, "Removal and Installation of BCM" .

DATA MONITOR			l .	
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MODE	BACK	LIGHT	COPY	SKIA5780E

4. CHECK HEADLAMP INPUT SIGNAL

(I) With CONSULT-II

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

	Terminals					
		(-)	Voltage			
Conr	nector	Terminal (Wire color)	(-)			
RH	E24	7 (R)	Ground	Rattery voltage		
LH	E40	7 (R/B)	Giodila	Battery voltage		

Front combination lamp connector V PKIA4971E

Without CONSULT-II

- 1. Turn ignition switch OFF.
- 2. Disconnect front combination lamp RH and LH connector.
- 3. Start auto active test. Refer to PG-24, "Auto Active Test".
- When headlamp low beam is operating, check voltage between front combination lamp RH and LH harness connector and ground.

		(-)	Voltage		
Conr	nector	Terminal (Wire color)	(-)		
RH	E24	7 (R)	Ground	Battery voltage	
LH	E40	7 (R/B)	Giodila	Battery Voltage	

OK or NG

OK >> GO TO 6.

NG >> GO TO 5.

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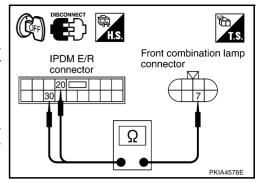
5. CHECK HEADLAMP CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect IPDM E/R connector.
- Check continuity between IPDM E/R harness connector E7 terminal 20 (R) and front combination lamp RH harness connector E24 terminal 7 (R).

20(R) - 7(R): Continuity should exist.

Check continuity between IPDM E/R harness connector E7 terminal 30 (R/B) and front combination lamp LH harness connector E40 terminal 7 (R/B).

> 30 (R/B) - 7 (R/B): Continuity should exist.



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Front combination lamp connector

OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness or connector.

6. CHECK HEADLAMP GROUND

- Turn ignition switch OFF.
- Check continuity between front combination lamp RH harness connector E24 terminal 8 (B) and ground.

8 (B) - Ground : Continuity should exist.

Check continuity between front combination lamp LH harness connector E40 terminal 8 (B) and ground.

8 (B) - Ground

: Continuity should exist. >> Check headlamp harness and connectors, ballasts (HID

control unit). Refer to LT-32, "Xenon Headlamp Trouble Diagnosis" . NG >> Repair harness or connector.

Headlamp Low Beam Does Not Illuminate (One Side)

AKS00ABQ

1. CHECK BULB

Check ballasts (HID control unit) and xenon bulb of lamp which does not illuminate. Refer to LT-32, "Xenon Headlamp Trouble Diagnosis".

OK or NG

OK or NG OK

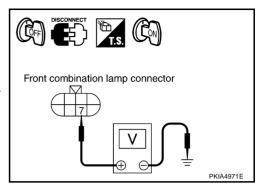
OK >> GO TO 2.

NG >> Repair malfunctioning part.

2. CHECK HEADLAMP INPUT SIGNAL

- 1. Turn ignition switch OFF.
- 2. Disconnect front combination lamp RH or LH connector.
- 3. Turn ignition switch ON.
- 4. Lighting switch is turned 2ND position.
- Check voltage between front combination lamp RH or LH harness connector and ground.

		()	Voltage			
Conr	nector	Terminal (Wire color)	(-)			
RH	E24	7 (R)	Ground	Battery voltage		
LH	E40	7 (R/B)	Giodila			



OK or NG

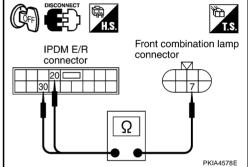
OK >> GO TO 4. NG >> GO TO 3

3. CHECK HEADLAMP CIRCUIT

- Disconnect IPDM E/R connector and front combination lamp RH or LH connector.
- Check continuity between IPDM E/R harness connector E7 terminal 20 (R) and front combination lamp RH harness connector E24 terminal 7 (R).

Check continuity between IPDM E/R harness connector E7 terminal 30 (R/B) and front combination lamp LH harness connector E40 terminal 7 (R/B).





OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness or connector.

4. CHECK HEADLAMP GROUND

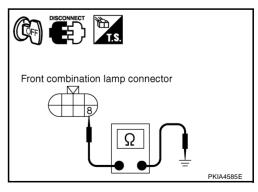
- 1. Check continuity between front combination lamp RH harness connector E24 terminal 8 (B) and ground.
 - 8 (B) Ground : Continuity should exist.
- 2. Check continuity between front combination lamp LH harness connector E40 terminal 8 (B) and ground.



OK or NG

OK >> Check headlamp harness and connectors.

NG >> Repair harness or connector.

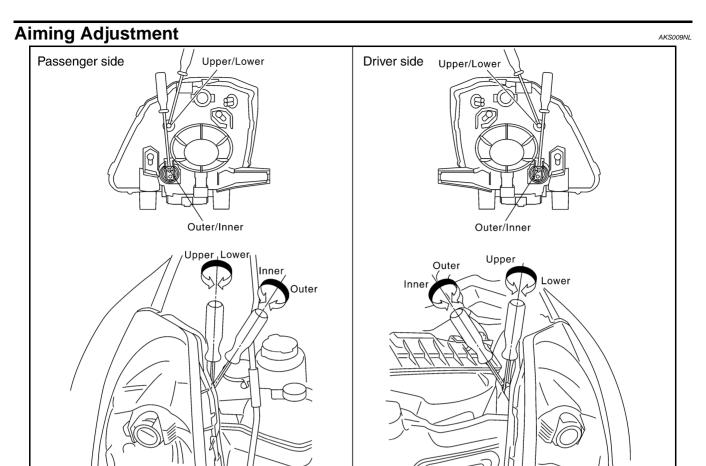


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PREPARATION BEFORE ADJUSTING

For details, refer to the regulations in your own country.

Before performing aiming adjustment, check the following.

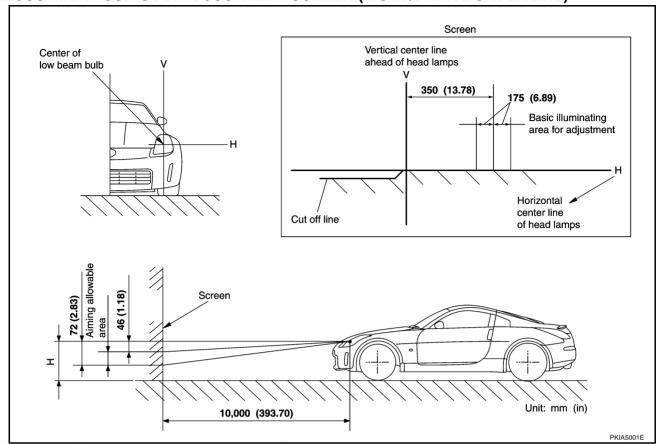
- 1. Keep all tires inflated to correct pressures.
- 2. Place vehicle on flat surface.
- 3. Set that there is no-load in vehicle other than the driver (or equivalent weight placed in driver's position). Coolant, engine oil filled up to correct level and full fuel tank.

PKIA7870E

LOW BEAM AND HIGH BEAM

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

ADJUSTMENT USING AN ADJUSTMENT SCREEN (LIGHT/DARK BORDERLINE)



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

Basic illumination area for adjustment should be within the range shown on the aiming chart.
 Adjust headlamp accordingly.

Bulb Replacement HEADLAMP (UPPER) LOW BEAM

Turn lighting switch OFF.

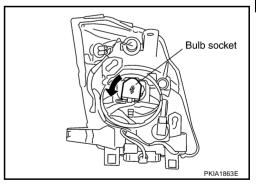
2. Remove headlamp. Refer to <u>LT-103, "Removal and Installation"</u>

- 3. Turn plastic cap counterclockwise and unlock it.
- 4. Turn bulb socket counterclockwise and unlock it.
- 5. Unlock retaining spring and remove bulb from headlamp.
- 6. Install in reverse order of removal.

NOTE:

After installation, aiming adjustment. Refer to $\underline{\text{LT-100, "Aiming Adjustment"}}$.

Headlamp (upper) low beam : 12V - 35W (D2R) (Xenon)



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HEADLAMP (LOWER) HIGH BEAM

- 1. Turn lighting switch OFF.
- 2. Open the driver and front passenger window, and then disconnect the battery negative cable.

CAUTION:

After the battery cables are disconnected, do not open/close the driver and/or front passenger door with the window in the full up position. The automatic window adjusting function will not work and the side roof panel may be damaged.

- 3. Remove fender protector (front). Refer to EI-21, "FENDER PROTECTOR" in "EI" section.
- 4. Turn plastic cap counterclockwise and unlock it.
- 5. Disconnect bulb socket.
- 6. Unlock retaining spring and remove bulb from headlamp.
- 7. Install in reverse order of removal.

Headlamp (lower) high beam : 12V - 55W (H7)

PARKING LAMP (CLEARANCE LAMP)

- 1. Turn lighting switch OFF.
- 2. Remove fender protector (front). Refer to EI-21, "FENDER PROTECTOR" in "EI" section.
- 3. Turn bulb socket counterclockwise and unlock it.
- 4. Remove bulb from its socket.
- 5. Install in reverse order of removal.

Parking lamp (Clearance lamp) : 12V - 5W

FRONT TURN SIGNAL LAMP

- 1. Turn lighting switch OFF.
- 2. Remove fender protector (front). Refer to EI-21, "FENDER PROTECTOR" in "EI" section.
- 3. Turn bulb socket counterclockwise and unlock it.
- 4. Remove bulb from its socket.
- Install in reverse order of removal.

Front turn signal lamp : 12V - 21W

FRONT SIDE MARKER LAMP

- 1. Turn lighting switch OFF.
- 2. Remove fender protector (front). Refer to EI-21, "FENDER PROTECTOR" in "EI" section.
- 3. Turn bulb socket counterclockwise and unlock it.
- 4. Remove bulb from its socket.
- 5. Install in reverse order of removal.

Front side marker lamp : 12V - 5W

CAUTION:

After installing bulb, be sure to install plastic cap and bulb socket securely to insure watertightness.

Removal and Installation **REMOVAL**

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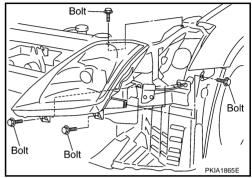
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1. Open the driver and front passenger window, and then disconnect the battery negative cable.

After the battery cables are disconnected, do not open/close the driver and/or front passenger door with the window in the full up position. The automatic window adjusting function will not work and the side roof panel may be damaged.

- 2. Remove front bumper. Refer to EI-14, "FRONT BUMPER" in "EI" section.
- 3. Remove headlamp mounting bolts.
- 4. Pull head lamp toward vehicle front, disconnect connector, and remove headlamp.



INSTALLATION

Installation in the reverse order if removal. Be careful of the following.

Headlamp mounting bolt:

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: 6.1N·m (0.62 kg-m, 54 in lb)

NOTE:

After installation, perform aiming adjustment. Refer to LT-100, "Aiming Adjustment".

Disassembly and Assembly

AKSOOONO **XENON TYPE 9** 3.1 (0.32 , 27) :N·m(kg-m,in-lb)

- 1. Retaining spring
- 4. Side marker lamp bulb
- Parking lamp (Clearance lamp) bulb 8. 7.
- 10. Plastic cap
- Halogen bulb socket
- 2. Front turn signal lamp bulb
- 5. Side marker lamp bulb socket
- Parking lamp (Clearance lamp) bulb socket
- Halogen bulb (high)
- 14. HID C/U

- 3. Front turn signal lamp bulb socket
- 6. Xenon bulb
- 9. Seal rubber
- 12. Xenon bulb socket
- Headlamp housing assembly

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DISASSEMBLY

- 1. Turn plastic cap counterclockwise and unlock it.
- 2. Turn xenon bulb socket counterclockwise, and unlock it.
- 3. Unlock retaining spring, and remove xenon bulb (low).
- 4. Disconnect HID control unit connector, and remove HID control unit screws.
- Disconnect the socket connected to halogen bulb (high).
- 6. Unlock retaining spring, and remove halogen bulb (high).
- 7. Turn parking lamp bulb socket counterclockwise and unlock it.
- 8. Remove parking lamp bulb from its socket.
- 9. Turn front turn signal lamp bulb socket counterclockwise and unlock it.
- 10. Remove front turn signal lamp bulb from its socket.
- 11. Turn front side marker lamp bulb socket counterclockwise and unlock it.
- 12. Remove front side marker lamp bulb from its socket.

ASSEMBLY

Assemble in reverse order of disassembly. Be careful of the following:

HID control unit mounting screw:



: 3.1 N·m (0.32 kg-m, 27 in-lb)

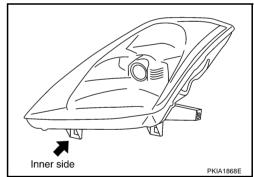
CAUTION:

- When HID control unit is removed, reinstall it securely and avoid any looseness.
- After installing bulb, be sure to install plastic cap and bulb socket securely to insure watertightness

Serving to Replace Headlamps When Damaged

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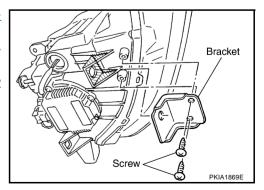
If only installation part as shown in the figure is damaged, and headlamp housing itself is not damaged, repair can be completed easily by installing correction brackets.



INSTALLATION OF HEADLAMP BRACKET

- 1. Remove headlamps. Refer to <u>LT-103, "Removal and Installation"</u>.
- Cut damaged section of installation part, then shape with sandpaper.
- Attach each correction bracket to headlamp housing boss with 2 screws.

RH headlamp Inner side 26040 CD000 LH headlamp Inner side 26090 CD000



HEADLAMP (FOR CANADA) - CONVENTIONAL TYPE -

Component Parts and Harness Connector Location AKS009SK View with battery removed View with dash side LH remover IPDM E/R Fuse block(J/B) (E7 (E8 hooH opener handle E9 BCM(Body Dáta link control module) connector Fuse and fusible (M90) (M91) (M8) link block Daytime light control unit Combination switch Combination switch (Lighting switch) (M29) (Wiper switch) M29 (E13) (E14) (E15) Parking brake switch (B47) ·= 100 = 40A 10A 81 73 82 -10A 74 83 75 84 76 85 15A -15A 77 87 78 88 15A 79 89 1ÓA 10A 10A 80 Fuse block (J/B) Fuse and fusible link block fuse layout Front fuse lavout IPDM E/R fuse lavout PKIA7015E

System Description

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Headlamp system for Canada vehicles is equipped with a daytime light control unit that activates high beam headlamps at approximately half illumination whenever engine is running. If parking brake is applied before engine is started daytime lights will not be illuminated. Daytime lights will illuminate once parking brake is released. Thereafter, daytime lights will continue to operate when parking brake is applied. And battery saver system is controlled by BCM (body control module).

OUTLINE

Power is supplied at all times

- to headlamp high and low relays [located in IPDM E/R (intelligent power distribution module engine room)]
- through 15A fuse [No. 78, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)].

Power is also supplied at all times

- through 40A fusible link [letter F, located in fuse and fusible link block]
- to BCM (body control module) terminal 55
- through 10A fuse [No. 18, located in fuse block (J/B)]
- to BCM (body control module) terminal 42.

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

- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)]
- through 10A fuse [No. 82, located in IPDM E/R (intelligent power distribution module engine room)]

- to daytime light control unit terminal 3
- through 10A fuse [No. 1, located in fuse block (J/B)]
- to BCM (body control module) terminal 38.

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

- through 10A fuse [No. 6, located in fuse block (J/B)]
- to BCM (body control module) terminal 11.

With ignition switch in START position, power is supplied

- through 10A fuse [No. 9, located in fuse block (J/B)]
- to daytime light control unit terminal 2.

Ground is supplied

- to daytime light control unit terminals 14 and 16
- through grounds E17, E43 and F152
- to IPDM E/R (intelligent power distribution module engine room) terminals 38 and 60
- through grounds E17, E43 and F152
- to BCM (body control module) terminal 52
- through grounds M30 and M66.

HEADLAMP OPERATION

Low Beam Operation

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

- through 15A fuse [No. 76, located in IPDM E/R]
- through IPDM E/R terminal 20
- to front combination lamp RH terminal 6
- through 15A fuse [No. 86, located in IPDM E/R]
- through IPDM E/R terminal 30
- to daytime light control unit terminal 11
- through daytime light control unit terminal 12
- to front combination lamp LH terminal 6.

Ground is supplied at all times

- to front combination lamp RH terminal 3
- through grounds E17, E43 and F152
- to front combination lamp LH terminal 3
- through daytime light control unit terminal 9
- to daytime light control unit terminal 14
- through grounds E17, E43 and F152.

With power and ground supplied, low beam headlamps illuminate.

High Beam Operation (When Engine Stopped) /Flash-to-Pass Operation

With lighting switch in 2ND position and placed in HIGH or PASS position, BCM receives input signal requesting headlamp high beams to illuminate. This input signal is communicated to IPDM E/R across CAN communication lines. CPU in IPDM E/R controls headlamp high relay coil turned on, which when energized, directs power

- through daytime light control unit terminal 7
- to front combination lamp LH terminal 2
- through 10 A fuse [No. 74, located in IPDM E/R]
- through IPDM E/R terminal 28
- to daytime light control unit terminal 4
- through daytime light control unit terminal 6
- to front combination lamp RH terminal 2

through 10 A fuse [No. 72, located in IPDM E/R] Α through IPDM E/R terminal 27 to daytime light control unit terminal 5. Ground is supplied В to front combination lamp LH terminal 3 through daytime light control unit terminal 9 to daytime light control unit terminal 14 through grounds E17,E43 and F152 to front combination lamp RH terminal 3 through grounds E17, E43 and F152. D With power and ground supplied, the high beam headlamps illuminate. Unified meter and A/C amp, receives signal from BCM across CAN communication lines, and then combination meter indicator illuminates high beam. F COMBINATION SWITCH READING FUNCTION Refer to BCS-3, "COMBINATION SWITCH READING FUNCTION". F **EXTERIOR LAMP BATTERY SAVER CONTROL** With combination switch (lighting switch) is in the 2ND position (ON), and ignition switch is turned from ON or ACC to OFF, battery saver control function is activated. Under this condition, headlamps remain illuminated for 5 minutes, then headlamps are turned off. Exterior lamp battery saver control mode can be changed by the function setting of CONSULT-II. **DAYTIME LIGHT OPERATION** Н With engine running, lighting switch in the OFF or 1ST position and parking brake released, power is supplied through daytime light control unit terminal 7 to front combination lamp LH terminal 2 through front combination lamp LH terminal 3 to daytime light control unit terminal 9 J through daytime light control unit terminal 6 to front combination lamp RH terminal 2. Ground is supplied LT to front combination lamp RH terminal 3 through grounds E17, E43 and F152, and to daytime light control unit terminal 14 through grounds E17, E43 and F152. Because high beam headlamps are now wired in series, they operate at half illumination.

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If lighting switch is in the 2nd position, daytime light operation is canceled.

OPERATION

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

Eng	With engine stopped							With engine running											
Lighting switch		OFF			1ST		2ND		OFF		1ST			2ND					
		Hi	Lo	Р	Hi	Lo	Р	Hi	Lo	Р	Hi	Lo	Р	Hi	Lo	Р	Hi	Lo	Р
Head- lamp	High beam	-	_	-	-	_	×	×	_	×	•*	•*	×	•*	•*	×	×	_	×
	Low beam	-	_	-	_	_	×	×	×	×	_	_	×	-	_	×	×	×	×
Tail lamp		_	_	_	×	×	×	×	×	×	_	_	-	×	×	×	×	×	×
License a ment illum lamp		_	_	_	×	×	×	×	×	×	_	_	_	×	×	×	×	×	×

- Hi: "HIGH BEAM" position
- Lo: "LOW BEAM" position
- P: "FLASH TO PASS" position
- x: Lamp "ON"
- –: Lamp "OFF"
- : Lamp dims. (Added functions)
- *: When starting engine with parking brake released, daytime light will come ON. When starting engine with parking brake pulled, daytime light will not come ON.

CAN Communication System Description

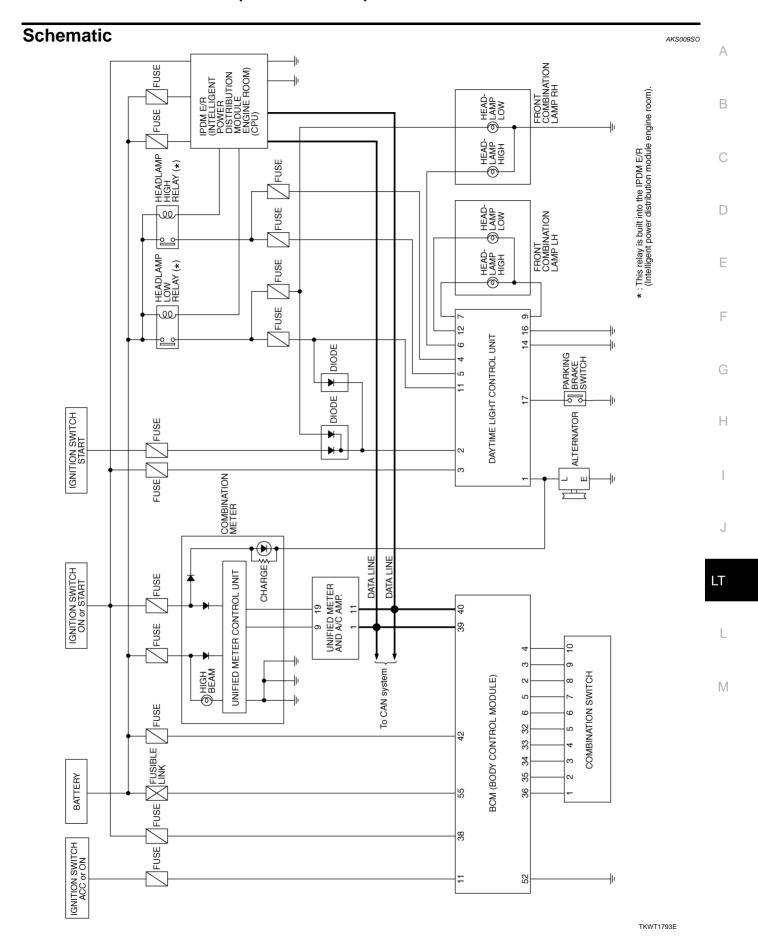
AKS009SM

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

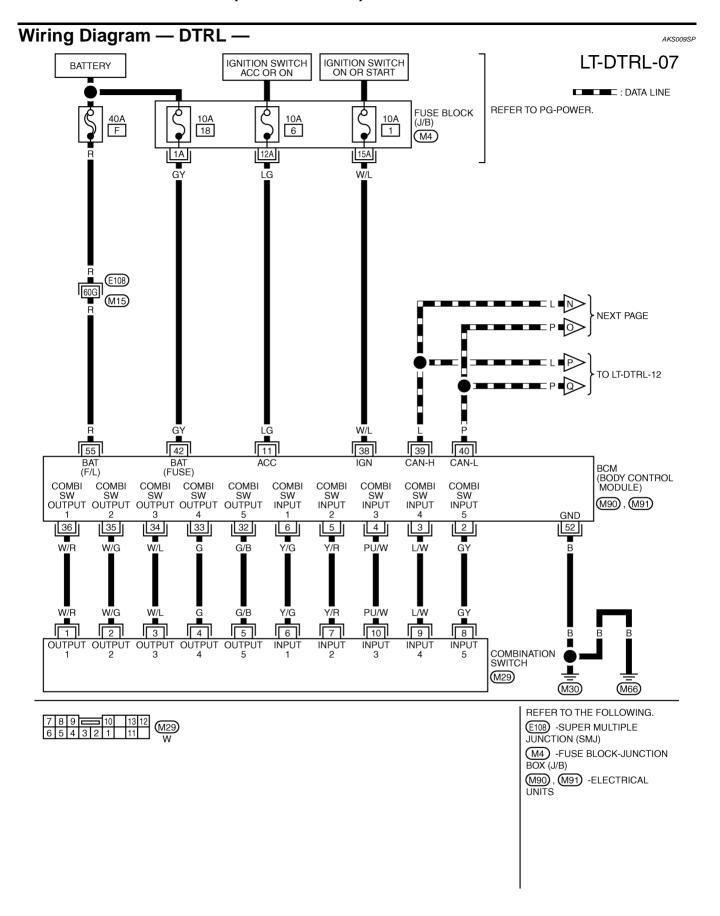
CAN Communication Unit

AKS009SN

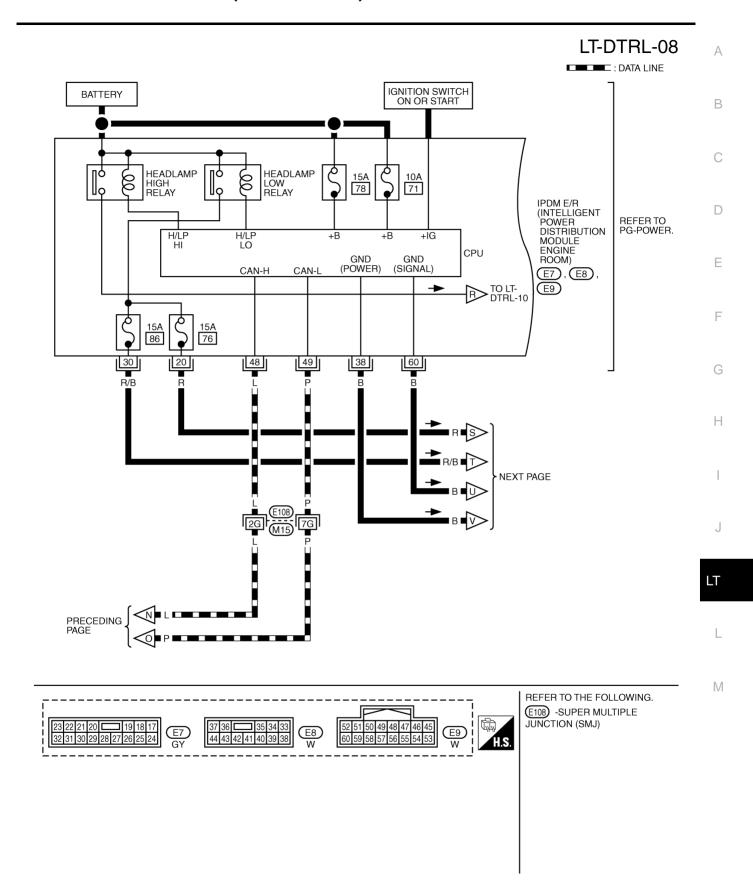
Refer to LAN-5, "CAN Communication Unit" .



LT-109

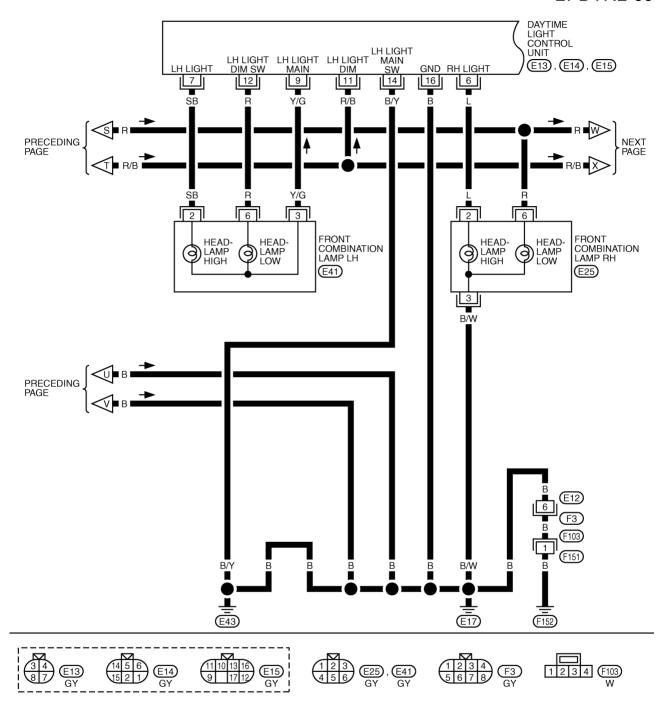


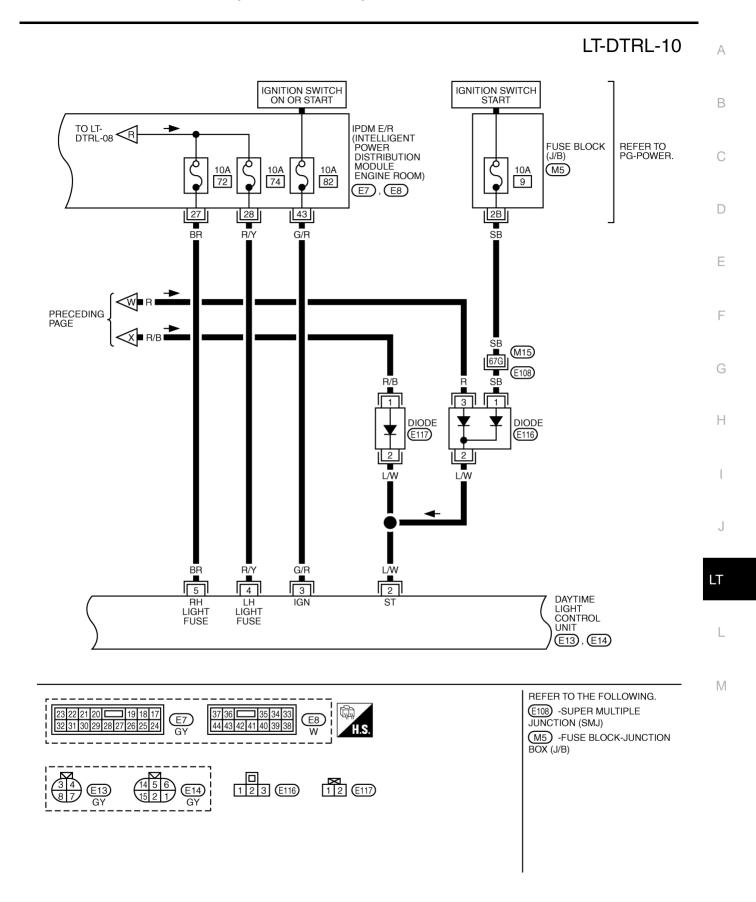
TKWT1794E



TKWT1795E

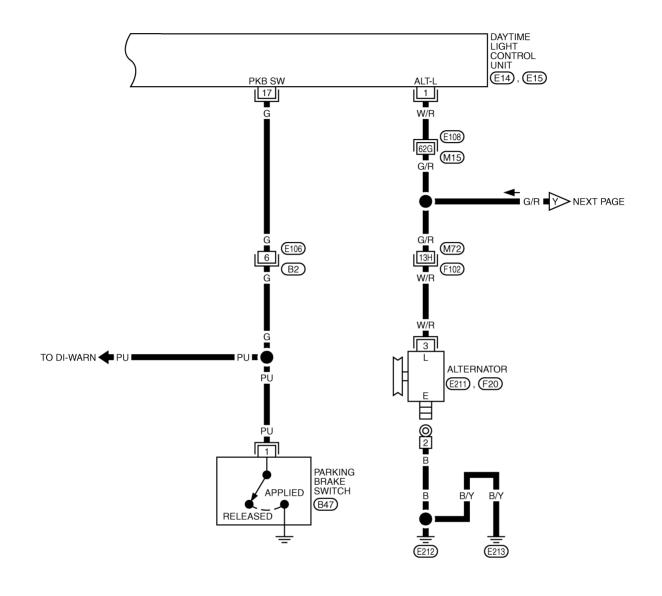
LT-DTRL-09

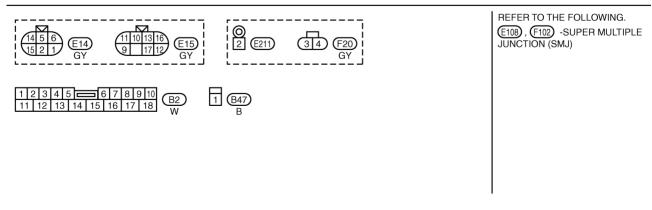




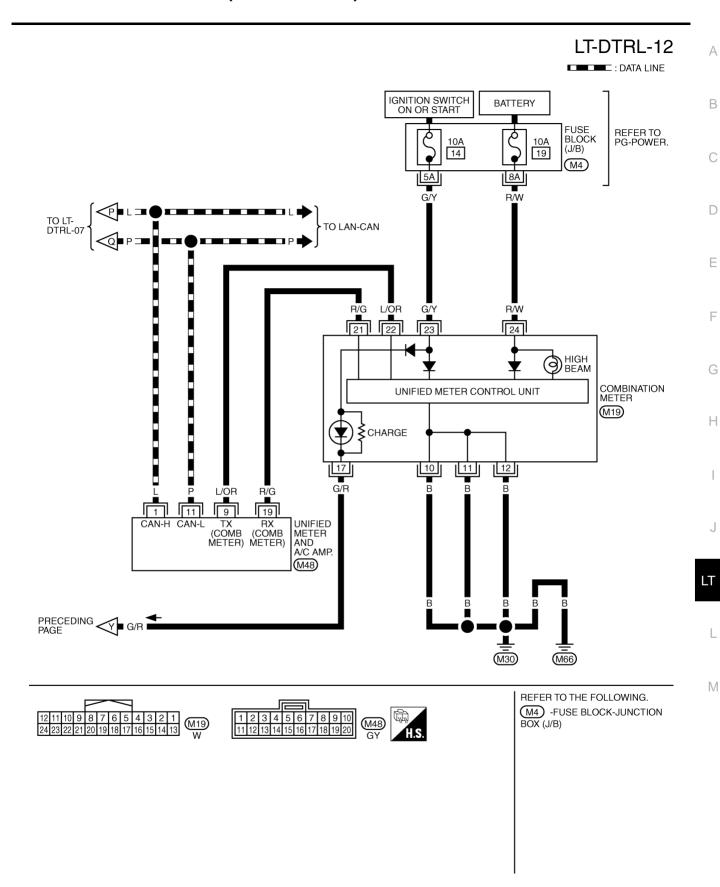
TKWT1797E

LT-DTRL-11





TKWT1798E



TKWT1799E

Terminals and Reference Values for BCM

AKS00AQE

	100			Measuring condition	
Terminal No.	Wire color	Signal name	Ignition switch	Operation or condition	Reference value
2	GY	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 *********************************
3	L/W	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 ++5ms SKIA5292E
4	PU/W	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 64 2 0 ****5ms
5	Y/R	Combination switch input 2			(V)
6	Y/G	Combination switch input 1	ON	Lighting, turn, wiper OFF Wiper dial position 4	6 4 2 0 + 5ms SKIA5292E
11	LG	Ignition switch (ACC)	ACC	_	Battery voltage
32	G/B	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 ***5ms
33	G	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 ***5ms
34	W/L	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 **5ms SKIA5291E

Terminal	Wire		Measuring condition			
No.	Signal name		Ignition switch	Operation or condition	Reference value	
35	W/G	Combination switch output 2			40	
36	W/R	Combination switch output 1	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 → • 5ms SKIA5292E	
38	W/L	Ignition switch (ON)	ON	_	Battery voltage	
39	L	CAN- H	_	_	_	
40	Р	CAN- L	_	_	_	
42	GY	Battery power supply	OFF	_	Battery voltage	
52	В	Ground	ON	_	Approx. 0V	
55	R	Battery power supply	OFF	_	Battery voltage	

Terminals and Reference Values for IPDM E/R

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Terminal	Wire			Measuring condition			
No. color		Signal name	Ignition switch	Operation or condition		Reference value	
20	R	Headlamp low (RH)	ON	Lighting switch 2ND	OFF	Approx. 0V	
20	K	Headiamp low (KH)	ON	position	ON	Battery voltage	
27	DD	Lloodlows high (DLI)	ON	Lighting switch HIGH	OFF	Approx. 0V	
27	BR	Headlamp high (RH)	ON	or PASS position	ON	Battery voltage	
00		Handlana binb (HI)	ON	ON Lighting switch HIGH or PASS position	OFF	Approx. 0V	
28	R/Y	Headlamp high (LH)	ON		ON	Battery voltage	
	D/D		ON	Lighting switch 2ND	OFF	Approx. 0V	
30	R/B	Headlamp low (LH)	ON	position	ON	Battery voltage	
38	В	Ground	ON			Approx. 0V	
43	G/R	Ignition power supply	ON	_		Battery voltage	
48	L	CAN- H	_	_		_	
49	Р	CAN- L	_	_		_	
60	В	Ground	ON	_		Approx. 0V	

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Termir	als a	and Reference	Value for Daytime Light Control Unit	AKS009SQ
Terminal No.	Wire color	Item	Condition	Reference value
			When turning ignition switch to "ON"	Approx. 0V
1	1 W/R	Alternator	When engine is running	Battery voltage
			When turning ignition switch to "OFF"	Approx. 0V
			When turning ignition switch to "START"	Battery voltage
2	L/W	Start signal	When turning ignition switch to "ON" from "START"	Approx. 0V
			When turning ignition switch to "OFF"	Approx. 0V
3	G/R	Ignition power supply	When turning ignition switch to "ON"	Battery voltage
4	R/Y	Lighting switch (LH hi beam)	When turning lighting switch to "HI BEAM"	Battery voltage
5	BR	Lighting switch (RH hi beam)	When turning lighting switch to "HI BEAM"	Battery voltage
			When lighting switch is turned to the 2ND position with "HI BEAM" or "FLASH TO PASS" position	Battery voltage
6	6 L RH hi beam	When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) CAUTION: Block wheels and ensure selector lever is in N or P position.	Battery voltage	
			When lighting switch is turned to the 2ND position with "HI BEAM" or "FLASH TO PASS" position	Battery voltage
7	SB	LH hi beam	When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) CAUTION: Block wheels and ensure selector lever is in N or P position.	Battery voltage
			When turning lighting switch to the 2ND position with "HI BEAM" or "FLASH TO PASS" position	Approx. 0V
9	Y/G	LH hi/low beam (ground)	When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) CAUTION: Block wheels and ensure selector lever is in N or P position.	Approx. 0V
11	R/B	Lighting switch (LH low beam)	When turning lighting switch to "LOW BEAM"	Battery voltage
12	R	LH Low beam	When turning lighting switch to "LOW BEAM"	Battery voltage
14	B/Y	Ground	_	_
16	В	Ground	_	_
47	-	Dadie - back - 201	When parking brake is released	Battery voltage
17 G	G	Parking brake switch	When parking brake is applied	Approx. 0V

How to Proceed with Trouble Diagnosis

AKS009S

- 1. Confirm the symptom or customer complaint.
- 2. Understand operation description and function description. Refer to LT-105, "System Description".
- 3. Perform the preliminary check. Refer to LT-119, "Preliminary Check".
- 4. Check symptom and repair or replace the cause of malfunction.
- 5. Does headlamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
- 6. INSPECTION END

Preliminary Check CHECK POWER SUPPLY AND GROUND CIRCUIT

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1. CHECK FUSES

Check for blown fuses.

UNIT	POWER SOURCE	Fuse and fusible link No.
	Dattani	F
DOM	Battery —	18
BCM	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
		71
		72
	Potton	74
IPDM E/R	Battery	76
		78
		86
	Ignition switch ON or START position	82
DAYTIME LIGHT CONTROL UNIT	Ignition switch START position	9

Refer to LT-110, "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".

2. CHECK POWER SUPPLY CIRCUIT

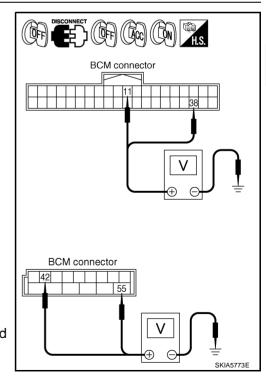
- Turn ignition switch OFF.
- 2. Disconnect BCM connectors.
- Check voltage between BCM harness connector and ground.

	Terminals		Ignition switch position		
-	(+)				
Connector	Terminal (Wire color)	(-)	OFF	ACC	ON
M90	11 (LG)	Ground	0V	Battery voltage	Battery voltage
Well	38 (W/L)		0V	0V	Battery voltage
M91	42 (GY)		Battery voltage	Battery voltage	Battery voltage
	55 (R)		Battery voltage	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3.

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



LT-119

3. CHECK GROUND CIRCUIT

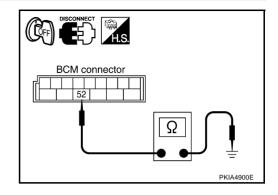
Check continuity between BCM harness connector and ground.

	Continuity		
Connector	Terminal (Wire color)	Ground	Continuity
M91	52 (B)	Ground	Yes

OK or NG

OK >> INSPECTION END

NG >> Check ground circuit harness.



AKS00ABR

CONSULT-II Functions (BCM)

CONSULT-II performs the followings communicating with BCM.

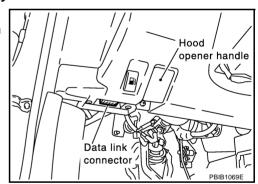
BCM diagnosis part	art Check item, diagnosis mode Description		
	WORK SUPPORT	Changes the setting for each function.	
HEADLAMP	DATA MONITOR	Displays BCM input data in real time.	
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.	
ВСМ	CAN DIAG SUPPORT MNTR	The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

CONSULT-II BASIC OPERATION

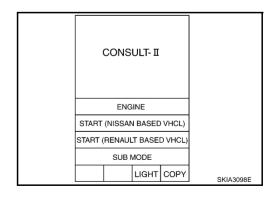
CAUTION:

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.

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

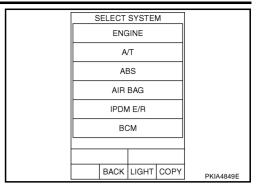


2. Touch "START(NISSAN BASED VHCL)".

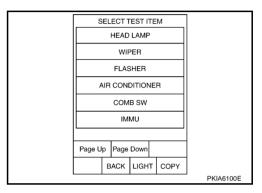


3. Touch "BCM" on "SELECT SYSTEM" screen.

If "BCM" is not indicated, refer to GI-39, "CONSULT-II Data Link Connector (DLC) Circuit".



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 "BATTERY SAVER SET" on "SELECT WORK ITEM" screen.
- Touch "START".
- 5. Touch "CHANGE SET".
- The setting will be changed and "CUSTOMIZING COMPLETED" will be displayed.
- 7. Touch "END".

Display Item List

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

DATA MONITOR

Operation Procedure

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

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

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

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Display Item List		
Monitor item		Contents
IGN ON SW	"ON/OFF"	Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from the ignition switch signal.
ACC ON SW	"ON/OFF"	Displays "ACC (ON)/OFF, Ignition OFF (OFF)" status judged from ignition switch signal.
HI BEAM SW	"ON/OFF"	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
HEAD LAMP SW 1	"ON/OFF"	Displays status (headlamp switch 1: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
HEAD LAMP SW 2	"ON/OFF"	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
LIGHT SW 1 ST	"ON/OFF"	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
AUTO LIGHT SW ^{NOTE}	"ON/OFF"	-
PASSING SW	"ON/OFF"	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW ^{NOTE}	"ON/OFF"	_
DOOR SW - DR	"ON/OFF"	Displays status of the driver door as judged from the driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - AS	"ON/OFF"	Displays status of the passenger door as judged from the passenger door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RR ^{NOTE}	"OFF"	_
DOOR SW - RLNOTE	"OFF"	_
BACK DOOR SW	"ON/OFF"	 Displays status of the back door as judged from the back door switch signal. (Coupe models) Displays status of the rear trunk hood as judged from the trunk lamp switch signal. (Roadster models)
TURN SIGNAL R	"ON/OFF"	Displays status (Turn right: ON/Others: OFF) as judged from lighting switch signal.
TURN SIGNAL L	"ON/OFF"	Displays status (Turn left: ON/Others: OFF) as judged from lighting switch signal.
CARGO LAMP SW ^{NOTE}	"OFF"	_

NOTE:

This item is displayed, but cannot monitor it.

ACTIVE TEST

Operation Procedure

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

Display Item List

Test item	Description
TAIL LAMP	Allows tail lamp relay to operate by switching ON–OFF.
HEAD LAMP	Allows headlamp relay to operate by switching ON–OFF.
FR FOG LAMP ^{NOTE}	_
CORNERING LAMP ^{NOTE}	_

NOTE:

This item is displayed, but cannot test it.

CONSULT-II Functions (IPDM E/R)

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CONSULT-II performs the following functions communicating with IPDM E/R.

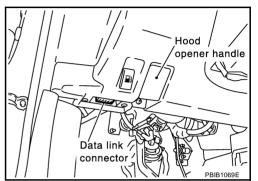
Check Item, Diagnosis Mode	Description
SELF-DIAGNOSTIC RESULTS	The IPDM E/R performs self-diagnosis of CAN communication.
DATA MONITOR	The input/output data of the IPDM E/R is displayed in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE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

CONSULT-II BASIC OPERATION

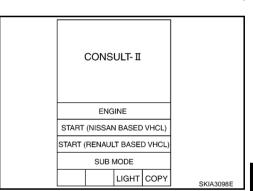
CAUTION:

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

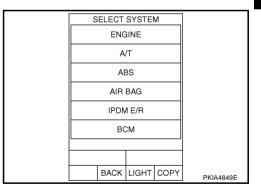
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



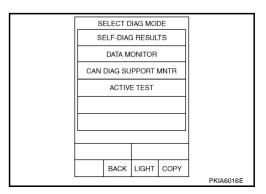
Touch "START (NISSAN BASED VHCL)".



Touch "IPDM E/R" on "SELECT SYSTEM" screen. If "IPDM E/R" is not displayed, print "SELECT SYSTEM" screen, then refer to GI-39, "CONSULT-II Data Link Connector (DLC) Circuit".



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



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DATA MONITOR

Operation Procedure

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

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

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

All Signals, Main Signals, Selection From Menu

			Monitor item selection			
Item name		Display or unit	ALL SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	Description
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

NOTE:

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

ACTIVE TEST

Operation Procedure

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

Test item	CONSULT-II screen display	Description		
Tail lamp relay output	TAIL LAMP	Allows tail lamp relay to operate by switching operation ON-OFF at your option.		
Headlamp relay (HI, LO) output	LAMPS	Allows headlamp relay (HI, LO) to operate by switching operation (OFF, HI ON, LO ON) at your option (Headlamp high beam repeats ON– OFF every 1 second).		

SELF-DIAGNOSTIC RESULTS

Refer to PG-21, "SELF-DIAG RESULTS".

Daytime Light Control Does Not Operate Properly

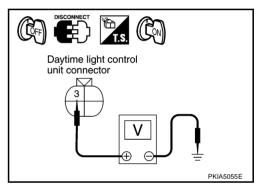
1. CHECK DAYTIME LIGHT CONTROL UNIT

- 1. Turn ignition switch OFF.
- 2. Disconnect daytime light control unit connectors.
- 3. Turn ignition switch ON.
- 4. Check voltage between daytime light control unit harness connector E13 terminal 3 (G/R) and ground.

OK or NG

OK >> GO TO 2.

NG >> Repair or replace daytime light control unit power supply circuit harness.



2. CHECK FOR DAYTIME LIGHT CONTROL UNIT GROUND

Check continuity between daytime light control unit harness connector E14 terminal 14 (B/Y) and ground.

14 (B/Y) - Ground : Continuity should exist.

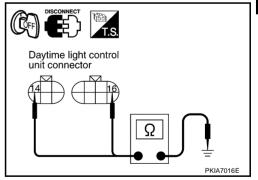
Check continuity between daytime light control unit harness connector E15 terminal 16 (B) and ground.

16 (B) - Ground : Continuity should exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.



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$\overline{3}$. CHECK PARKING BRAKE SWITCH CIRCUIT

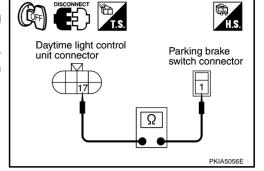
- 1. Turn ignition switch OFF.
- Disconnect daytime light control unit connector and parking brake switch connector.
- Check harness continuity between daytime light control unit harness connector E15 terminal 17 (G) and parking brake switch harness connector B47 terminal 1 (PU).

: Continuity should exist.

OK or NG

OK >> GO TO 4.

NG >> Repair harness or connector.



4. CHECK PARKING BRAKE SWITCH

- Connect daytime light control unit connector and parking brake switch connector.
- 2. Turn ignition switch ON.
- Check voltage between parking brake switch connector B47 terminal 1 (PU) and ground, when parking brake is released.

1 (PU) - Ground : Battery voltage should exist.

4. Check voltage between parking brake switch connector B47 terminal 1(PU) and ground, when parking brake is applied.



OK >> GO TO 5.

NG >> Replace parking brake switch.

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Parking brake

switch connector

5. CHECK ALTERNATOR CIRCUIT

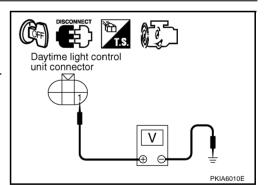
- 1. Turn ignition switch OFF.
- 2. Disconnect daytime light control unit connector.
- Start engine running.
- 4. Check voltage between daytime light control unit harness connector E14 terminal 1 (W/R) and ground.

1 (W/R) – Ground : Battery voltage should exist.

OK or NG

OK >> GO TO 6.

NG >> Repair harness or connector.



6. CHECK DAYTIME LIGHT CONTROL UNIT CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect daytime light control unit connector and front combination lamp RH connector.
- 3. Check harness continuity between daytime light control unit harness connector E14 terminal 6 (L) and front combination lamp RH harness connector E25 terminal 2 (L).

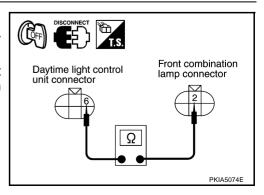
$$6(L) - 2(L)$$

: Continuity should exist.

OK or NG

OK >> Replace daytime light control unit.

NG >> Repair harness or connector.



Headlamp High Beam Does Not Illuminate (Both Sides)

1. CHECK COMBINATION SWITCH INPUT SIGNAL

(P)With CONSULT-II

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

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

Without CONSULT-II

Refer to LT-170, "Combination Switch Inspection".

OK or NG

OK >> GO TO 2.

NG >> Check lighting switch. Refer to <u>LT-170, "Combination</u> Switch Inspection".

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MONITOR			NC	DTC	
HI BEAN	AM SW		01	1	
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2. HEADLAMP ACTIVE TEST

With CONSULT-II

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

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

Without CONSULT-II

- 1. Start auto active test. Refer to PG-24, "Auto Active Test".
- Make sure headlamp high beam operation.

Headlamp high beam should operate.

OK or NG

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

3. CHECK IPDM E/R

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

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

OK or NG

NG

OK >> Replace IPDM E/R.

>> Replace BCM. Refer to <u>BCS-17</u>, "Removal and Installation of <u>BCM"</u>.

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	ACTIVE			
LAMPS	;		OFF	
		•		
		11		
LO FOG				
MODE	BACK	LIGHT	COPY	SKIA5774E

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DATA MONITOR

MONITOR

HL LO REQ ON

HL HI REQ ON

Page Down

RECORD

MODE BACK LIGHT COPY

SKIA5775E

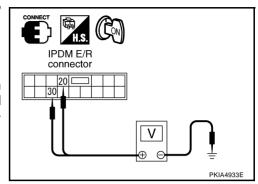
LT-127

4. CHECK HEADLAMP INPUT SIGNAL

(E)With CONSULT-II

- Select "IPDM E/R" on CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
- 2. Select "LAMPS" on "SELECT TEST ITEM" screen.
- 3. Touch "HI" screen.
- When headlamp high beam is operating, check voltage between front combination lamp RH and LH harness connector and ground (Headlamp high beam repeats ON-OFF every 1 second).

	Voltage		
Connector	Terminal (Wire color)	(-)	
E13	20 (R)	Ground	Battery voltage
213	30 (R/B)	Giodila	battery voltage



Without CONSULT-II

- 1. Start auto active test. Refer to PG-24, "Auto Active Test".
- 2. When headlamp high beam is operating, check voltage between front combination lamp RH and LH harness connector and ground.

	Terminals					
	Voltage					
Connector	Terminal (Wire color)	(-)				
E13	20 (R)	Ground	Battery voltage			
	30 (R/B)	Giodila	Battery voltage			

OK or NG

OK >> Check headlamp bulbs.

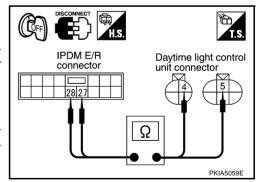
NG >> GO TO 5.

5. CHECK IPDM E/R CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect IPDM E/R connector.
- Check harness continuity IPDM E/R harness connector E7 terminal 28 (R/Y) and daytime light control unit harness connector E13 terminal 4 (R/Y).

Check harness continuity IPDM E/R harness connector E7 terminal 27 (BR) daytime light control unit harness connector E14 terminal 5 (BR).

27 (BR) – 5 (BR) : Continuity should exist.



OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness or connector.

RH High Beam Does Not Illuminate But RH Low Beam Illuminates

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Inspect bulb of lamp.

1. CHECK BULB

OK or NG

OK >> GO TO 2.

NG >> Replace headlamp bulb.

2. CHECK HEADLAMP INPUT SIGNAL

(P)With CONSULT-II

- 1. Connect daytime light control unit connector.
- 2. Select "IPDM E/R" on CONSULT-II and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
- 3. Touch "HI" screen.
- When headlamp HI is operating, check voltage between front combination lamp RH harness connector E25 terminal 2 (L) and ground (Headlamp high beam repeats ON-OFF every 1 second).



: Battery voltage should exist.

Without CONSULT-II

- 1. Start auto active test. Refer to PG-24, "Auto Active Test".
- 2. When headlamp HI is operating, check voltage between front combination lamp RH harness connector E25 terminal 2 (L) and ground.

2 (L) - Ground

: Battery voltage should exist.

OK or NG

OK >> GO TO 6.

NG >> GO TO 3.

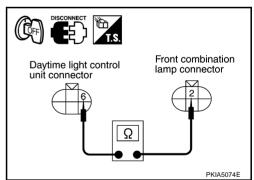
3. CHECK DAYTIME LIGHT CONTROL UNIT CIRCUIT

- Disconnect daytime light control unit connector and front combination lamp RH connector.
- Check continuity between daytime light control unit harness connector E14 terminal 6 (L) and front combination lamp RH harness connector E25 terminal 2 (L).

OK or NG

OK >> GO TO 4.

NG >> Repair harness or connector.



Front combination lamp connector

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4. CHECK DAYTIME LIGHT CONTROL UNIT INPUT SIGNAL

(P)With CONSULT-II

- Disconnect daytime light control unit connector.
- 2. Select "IPDM E/R" on CONSULT-II and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
- 3. Touch "HI" screen.
- When headlamp HI is operating, check voltage between daytime light control unit harness connector E14 terminal 5 (BR) and ground (Headlamp high beam repeats ON-OFF every 1 second).
 - 5 (BR) Ground : Battery voltage should exist.

Without CONSULT-II

- Start auto active test. Refer to <u>PG-24, "Auto Active Test"</u>.
- 2. When headlamp HI is operating, check voltage between daytime light control unit harness connector E14 terminal 5 (BR) and ground.

5 (BR) – Ground : Battery voltage should exist.

OK or NG

OK >> Replace daytime light control unit.

NG >> GO TO 5.

5. CHECK IPDM E/R CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect IPDM E/R connector.
- Check harness continuity IPDM E/R harness connector E7 terminal 27 (BR) daytime light control unit harness connector E14 terminal 5 (BR).

OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness or connector.

6. CHECK HEADLAMP GROUND

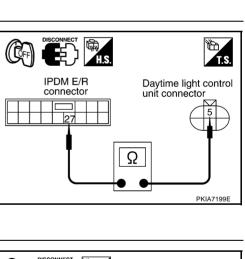
Check continuity between front combination lamp RH harness connector E25 terminal 3 (B/W) and ground.

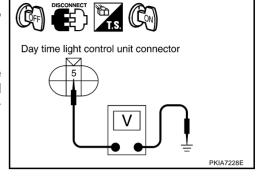
3 (B/W) – Ground : Continuity should exist.

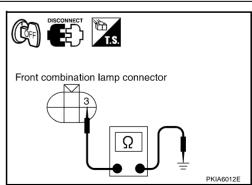
OK or NG

OK >> Check headlamp harness and connector.

NG >> Repair harness or connector.







LH High Beam Does Not Illuminate But LH Low Beam Illuminates

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1. CHECK BULB

Inspect bulb of lamp.

OK or NG

OK >> GO TO 2.

NG >> Replace bulb of lamp.

2. CHECK HEADLAMP INPUT SIGNAL

(E)With CONSULT-II

- 1. Connect daytime light control unit connector.
- 2. Select "IPDM E/R" on CONSULT-II and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
- 3. Touch "HI" screen.
- When headlamp high beam is operating, check voltage between front combination lamp LH harness connector E41 terminal 2 (SB) and ground (Headlamp high beam repeats ON-OFF every 1 second).



: Battery voltage should exist.

Without CONSULT-II

- 1. Start auto active test. Refer to PG-24, "Auto Active Test".
- 2. When headlamp high beam is operating, check voltage between front combination lamp LH harness connector E41 terminal 2 (SB) and ground.

2 (SB) – Ground

: Battery voltage should exist.

OK or NG

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

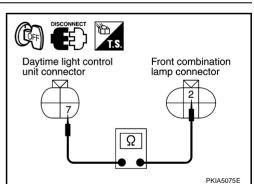
3. CHECK DAYTIME LIGHT CONTROL UNIT CIRCUIT

- 1. Disconnect daytime light control unit connector and front combination lamp LH connector.
- Check continuity between daytime light control harness connector E13 terminal 7 (SB) and front combination lamp LH harness connector E41 terminal 2 (SB).

OK or NG

OK >> GO TO 4.

NG >> Repair harness or connector.



Front combination lamp connector

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4. CHECK DAYTIME LIGHT CONTROL UNIT INPUT SIGNAL

(P)With CONSULT-II

- Disconnect daytime light control unit connector.
- 2. Select "IPDM E/R" on CONSULT-II and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
- 3. Touch "HI" screen.
- When headlamp HI is operating, check voltage between daytime light control unit harness connector E13 terminal 4 (R/Y) and ground (Headlamp high beam repeats ON-OFF every 1 second).

4 (R/Y) – Ground : Battery voltage should exist.

Day time light control unit connector PKIA7229E

®Without CONSULT-II

- 1. Start auto active test. Refer to PG-24, "Auto Active Test".
- 2. When headlamp HI is operating, check voltage between daytime light control unit harness connector E13 terminal 4 (R/Y) and ground.

4 (R/Y) – Ground : Battery voltage should exist.

OK or NG

OK >> Replace daytime light control unit.

NG >> GO TO 5.

5. CHECK IPDM E/R CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect IPDM E/R connector.
- 3. Check harness continuity IPDM E/R harness connector E7 terminal 28 (R/Y) and daytime light control unit harness connector E13 terminal 4 (R/Y).

28 (R/Y) – 4 (R/Y) : Continuity should exist.

OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness or connector.

IPDM E/R connector unit connector

6. CHECK DAYTIME LIGHT CONTROL UNIT CIRCUIT

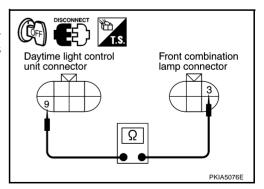
- 1. Disconnect daytime light control unit connector.
- Check continuity between daytime light control harness connector E15 terminal 9 (Y/G) and front combination lamp LH harness connector E41 terminal 3 (Y/G).

9 (Y/G) – 3 (Y/G) : Continuity should exist.

OK or NG

OK >> GO TO 7.

NG >> Repair harness or connector.



7. CHECK DAYTIME LIGHT CONTROL UNIT AND GROUND

Check continuity between daytime light control unit harness connector E14 terminal 14 (B/Y) and ground.

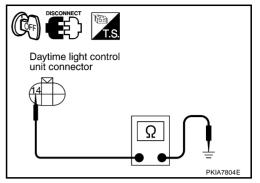
14 (B/Y) – Ground

: Continuity should exist.

OK or NG

OK >> Replace daytime light control unit.

NG >> Repair harness or connector.



Headlamp Low Beam Does Not Illuminate (Both Sides)

1. CHECK COMBINATION SWITCH INPUT SIGNAL

(P)With CONSULT-II

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

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

Without CONSULT-II

Refer to LT-170, "Combination Switch Inspection".

OK or NG

OK >> GO TO 2.

NG >> Check lighting switch. Refer to <u>LT-170</u>, "Combination Switch Inspection".

DATA MONITOR MONITOR NO DTC HEAD LAMP SW1 ON HEAD LAMP SW2 ON MODE BACK LIGHT COPY PKIA6325E

2. HEADLAMP ACTIVE TEST

(P)With CONSULT-II

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

Headlamp low beam should operate.

Without CONSULT-II

- Start auto active test. Refer to <u>PG-24, "Auto Active Test"</u>.
- 2. Make sure headlamp low beam operation.

Headlamp low beam should operate.

OK or NG

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

		ACTIVE	ETEST		
	LAMPS			OFF	
			H	11	
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	MODE	BACK	LIGHT	COPY	SKIA5774E

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$\overline{3}$. CHECK IPDM E/R

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

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

OK or NG

OK

>> Replace IPDM E/R.

NG

>> Replace BCM. Refer to <u>BCS-17</u>, "Removal and Installation of BCM"

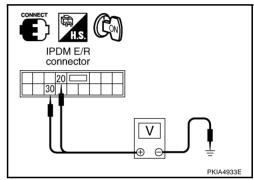
DATA MONITOR MONITOR HL LO REQ ON Page Down RECORD MODE BACK LIGHT COPY SKIA5780E

4. CHECK IPDM E/R SIGNAL

(II) With CONSULT-II

- Select "IPDM E/R" on CONSULT-II. and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
- 2. Select "LAMPS" on "SELECT TEST ITEM" screen.
- Touch "LO" screen.
- 4. When headlamp low beam is operating, check voltage between IPDM E/R and ground.

	Voltage		
Connector	Terminal (wire color)	(-)	
	30 (R/B)	Ground	Battery voltage
	20 (R)	Giodila	Ballery Vollage



Without CONSULT-II

- 1. Start auto active test. Refer to PG-24, "Auto Active Test".
- 2. When headlamp low beam is operating, check voltage between IPDM E/R and ground.

Terminals			
(+)		(-)	Voltage
Connector	Terminal (wire color)	(-)	
E7	30 (R/B)	Ground	Battery voltage
	20 (R)		

OK or NG

OK >> Check headlamp bulbs.

NG >> Replace IPDM E/R.

RH Low Beam Does Not Illuminate But RH High Beam Illuminates

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1. CHECK BULB

Check bulb of lamp.

OK or NG

OK >> GO TO 2.

NG >> Replace headlamp bulb.

$\overline{2}$. CHECK HEADLAMP INPUT SIGNAL

- 1. Turn ignition switch OFF.
- 2. Disconnect front combination lamp RH connector E25.
- 3. Turn ignition switch ON.
- 4. Lighting switch is turned 2ND position.
- 5. Check voltage between front combination lamp RH harness connector E25 terminal 6 (R) and ground.



OK or NG

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

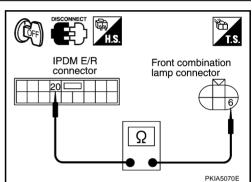
3. CHECK HEADLAMP RH CIRCUIT

- 1. Disconnect IPDM E/R connector and front combination lamp RH connector.
- Check harness continuity between IPDM E/R harness connector E7 terminal 20 (R) and front combination lamp RH harness connector E25 terminal 6 (R).

OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness or connector.



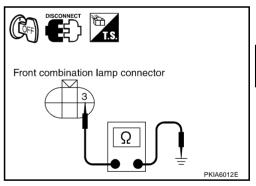
4. CHECK HEADLAMP GROUND

Check continuity between front combination lamp RH harness connector E25 terminal 3 (B/W) and ground.

OK or NG

OK >> Check headlamp harness and connectors.

NG >> Repair harness or connector.



LH Low Beam Does Not Illuminate But LH High Beam Illuminates

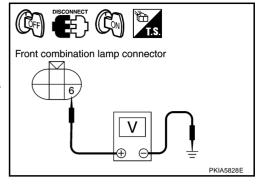
1. CHECK BULB

Check bulb of lamp.

OK or NG

OK >> GO TO 2.

NG >> Replace bulb of lamp.



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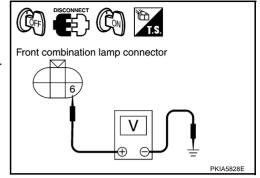
2. CHECK HEADLAMP INPUT SIGNAL

- 1. Turn ignition switch OFF.
- 2. Disconnect front combination lamp LH connector E41.
- 3. Turn ignition switch ON.
- 4. Lighting switch is turned 2ND position.
- 5. Check voltage between front combination lamp LH harness connector E41 terminal 6 (R) and ground.

6 (R) - Ground : Battery voltage should exist.

OK or NG

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



3. CHECK DAYTIME LIGHT CONTROL UNIT CIRCUIT

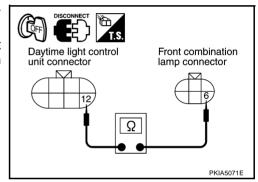
- Disconnect daytime light control unit connector and front combination lamp LH connector.
- Check harness continuity between daytime light control unit harness connector E15 terminal 12 (R) and front combination lamp LH harness connector E41 terminal 6 (R).

12 (R) – 6 (R) : Continuity should exist.

OK or NG

OK >> GO TO 4.

NG >> Repair harness or connector.



4. CHECK DAYTIME LIGHT CONTROL UNIT INPUT SIGNAL

(P)With CONSULT-II

- 1. Disconnect daytime light control unit connector.
- Select "IPDM E/R" on CONSULT-II and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
- 3. Touch "LO" screen.
- 4. When headlamp LO is operating, check voltage between day-time light control unit harness connector E15 terminal 11 (R/B) and ground.

11 (R/B) – Ground : Battery voltage should exist.

®Without CONSULT-II

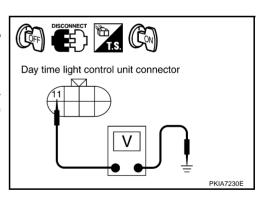
- Start auto active test. Refer to <u>PG-24, "Auto Active Test"</u>.
- When headlamp LO is operating, check voltage between daytime light control unit harness connector E15 terminal 11 (R/B) and ground.

11 (R/B) – Ground : Battery voltage should exist.

OK or NG

OK >> Replace daytime light control unit.

NG >> GO TO 6.



5. CHECK IPDM E/R CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect IPDM E/R connector.
- Check harness continuity IPDM E/R harness connector E7 terminal 30 (R/B) daytime light control unit harness connector E15 terminal 11 (R/B).

30 (R/B) – 11 (R/B) : Continuity should exist.

OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness or connector.

6. CHECK DAYTIME LIGHT CONTROL UNIT CIRCUIT

- Disconnect daytime light control unit connector and front combination lamp connector.
- 2. Check harness continuity between daytime light control unit harness connector E15 terminal 9 (Y/G) and front combination lamp LH harness connector E41 terminal 3 (Y/G).

9 (Y/G) – 3 (Y/G) : Continuity should exist.

OK or NG

OK >> GO TO 7.

NG >> Repair harness or connector.

7. CHECK DAYTIME LIGHT CONTROL UNIT AND GROUND

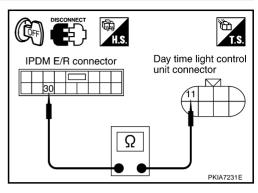
Check continuity between daytime light control unit harness connector E14 terminal 14 (B/Y) and ground.

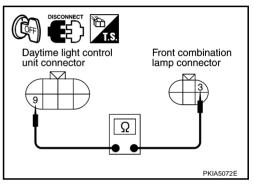
14 (B/Y) – Ground : Continuity should exist.

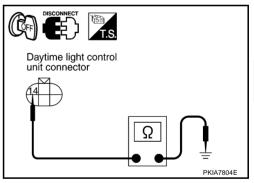
OK or NG

OK >> Replace daytime light control unit.

NG >> Repair harness or connector.







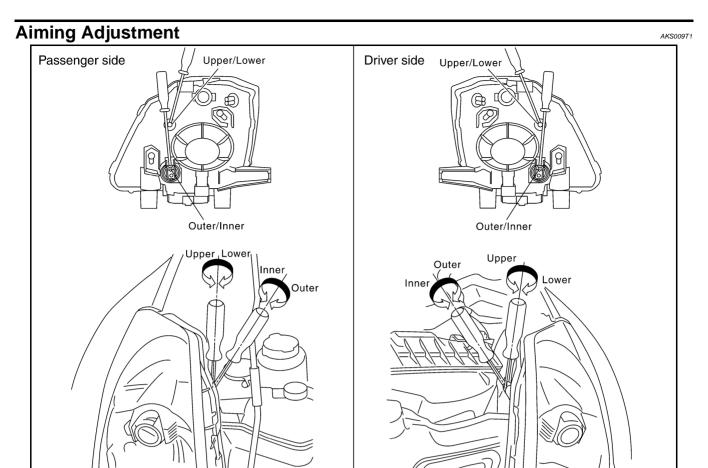
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PREPARATION BEFORE ADJUSTING

For details, refer to the regulations in your own country.

Before performing aiming adjustment, check the following.

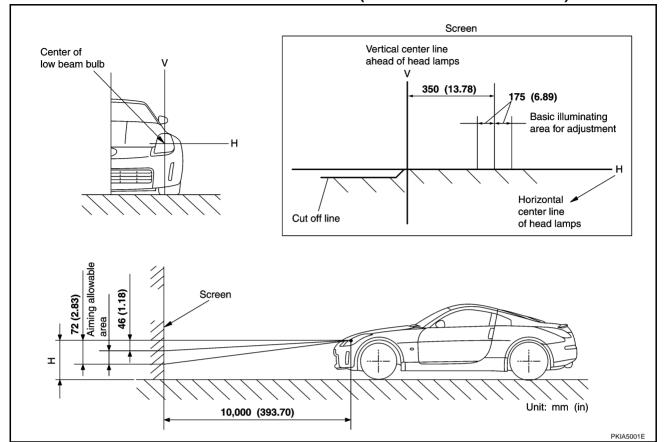
- 1. Keep all tires inflated to correct pressures.
- 2. Place vehicle on flat surface.
- 3. Set that there is no-load in vehicle other than the driver (or equivalent weight placed in driver's position). Coolant, engine oil filled up to correct level and full fuel tank.

PKIA7870E

LOW BEAM AND HIGH BEAM

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

ADJUSTMENT USING AN ADJUSTMENT SCREEN (LIGHT/DARK BORDERLINE)



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

Basic illumination area for adjustment should be within the range shown on the aiming chart. Adjust headlamp accordingly.

Bulb Replacement HEADLAMP (UPPER) LOW BEAM

Turn lighting switch OFF.

- 2. Remove fender protector (front). Refer to EI-21, "FENDER PROTECTOR" in "EI" section.
- Turn plastic cap counterclockwise and unlock it.
- 4. Disconnect bulb terminal.
- Unlock retaining spring and remove bulb from headlamp.
- Install in reverse order of removal.

Headlamp (upper) low beam : 12V - 55W (H7) (Halogen)

HEADLAMP (LOWER) HIGH BEAM

- Turn lighting switch OFF.
- Remove fender protector (front). Refer to EI-21, "FENDER PROTECTOR" in "EI" section. 2.
- Turn plastic cap counterclockwise and unlock it.
- 4. Disconnect bulb terminal.
- Unlock retaining spring and remove bulb from headlamp.
- Install in the reverse order of removal.

Headlamp (lower) high beam/Fog lamp : 12V - 55W (H1)

PARKING LAMPS (CLEARANCE LAMPS)

1. Turn lighting switch OFF.

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- 2. Remove fender protector (front). Refer to EI-21, "FENDER PROTECTOR" in "EI" section.
- 3. Turn bulb socket counterclockwise and unlock it.
- 4. Remove bulb from its socket.
- 5. Install in the reverse order of removal.

Parking lamps (Clearance lamps) : 12V - 5W

FRONT TURN SIGNAL LAMP

- 1. Turn lighting switch OFF.
- 2. Remove fender protector (front). Refer to EI-21, "FENDER PROTECTOR" in "EI" section.
- 3. Turn bulb socket counterclockwise and unlock it.
- 4. Remove bulb from its socket.
- 5. Install in the reverse order of removal.

Front turn signal lamp : 12V - 21W

CAUTION:

After installing bulb, be sure to install plastic cap and bulb socket securely to insure watertightness.

FRONT SIDE MARKER LAMP

- 1. Turn lighting switch OFF.
- 2. Remove fender protector (front). Refer to EI-21, "FENDER PROTECTOR" in "EI" section.
- 3. Turn bulb socket counterclockwise and unlock it.
- 4. Remove bulb from its socket.
- 5. Install in the reverse order of removal.

Front side marker lamp : 12V - 5W

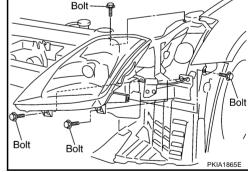
CAUTION:

After installing bulb, be sure to install plastic cap and socket securely to insure watertightness.

Removal and Installation REMOVAL

AKS009T3

- 1. Remove front bumper. Refer to <u>EI-14, "FRONT BUMPER"</u> in "EI" section.
- 2. Remove headlamp mounting bolts.
- 3. Pull headlamp toward vehicle front, disconnect connector, and remove headlamp.



INSTALLATION

Install in the reverse order of removal. Be careful of the following:

Headlamp mounting bolt:

: 6.1 N·m (0.62 kg-m, 54 in-lb)

NOTE:

After installation, perform aiming adjustment. Refer to LT-138, "Aiming Adjustment".

Disassembly and Assembly

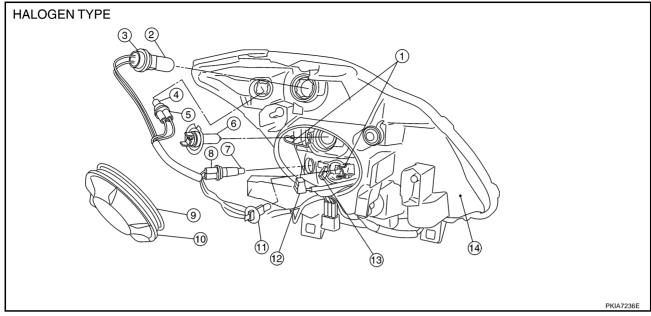
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- 1. Retaining spring
- 4. Side marker lamp bulb
- 7. Halogen bulb socket
- 10. Plastic cap
- 13. Halogen bulb socket (high)
- 2. Front turn signal lamp bulb
- 5. Side marker lamp bulb socket
- 8. Clearance lamp bulb socket
- 11. Halogen bulb (high)
- 14. Headlamp housing assembly
- 3. Front turn signal lamp bulb socket
- 6. Halogen bulb (low)
- 9. Seal rubber
- 12. Halogen bulb socket (low)

DISASSEMBLY

- 1. Turn plastic cap counterclockwise and unlock it.
- 2. Disconnect bulb socket (low).
- 3. Unlock retaining spring, and remove halogen bulb (low).
- 4. Disconnect the socket connected to halogen bulb (high).
- 5. Unlock retaining spring, and remove halogen bulb (high).
- 6. Turn parking lamp bulb socket counterclockwise and unlock it.
- 7. Remove parking lamp bulb from its socket.
- 8. Turn front turn signal lamp bulb socket counterclockwise and unlock it.
- 9. Remove front turn signal lamp bulb from its socket.
- 10. Turn front side marker lamp bulb socket counterclockwise and unlock it
- 11. Remove front side lamp marker lamp bulb from its socket.

ASSEMBLY

Assemble in reverse order of disassembly. Be careful of the following:

CAUTION:

After installing bulb, be sure to install plastic cap and bulb socket securely to insure watertightness.

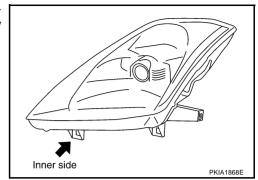
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Servicing to Replace Headlamps When Damaged

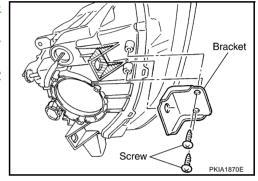
If only installation part as shown in the figure is damaged, and headlamp housing itself is not damaged, repair can be completed easily by installing correction brackets. AKS009T6



INSTALLATION OF HEADLAMP BRACKET

- Remove headlamps. Refer to <u>LT-140, "Removal and Installation"</u>.
- 2. Cut damaged section of installation part, then shape with sand-paper.
- 3. Attach each correction bracket to headlamp housing boss with 2 screws.

RH headlamp Inner side 26040 CD000 LH headlamp Inner side 26090 CD000



TURN SIGNAL AND HAZARD WARNING LAMPS

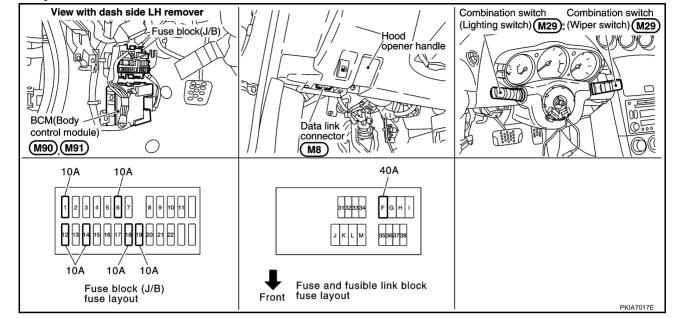
TURN SIGNAL AND HAZARD WARNING LAMPS

Component Parts and Harness Connector Location

PFP:26120

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System Description TURN SIGNAL OPERATION

AKS009QS

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

- through 10A fuse [No.1, located in fuse block (J/B)]
- to BCM (body control module) terminal 38,
- through 10A fuse [No.12, located in fuse block (J/B)]
- to unified meter and A/C amp. terminal 22, and
- through 10A fuse [No.14, located in fuse block (J/B)]
- to combination meter terminal 23.

Ground is supplied

- to BCM terminal 52
- through grounds M30 and M66,
- to unified meter and A/C amp. terminals 29 and 30
- through grounds M30 and M66, and
- to combination meter terminals 10, 11 and 12
- through grounds M30 and M66.

LH Turn

When turn signal switch (combination switch) is moved to LH position, BCM receives left turn signal by combination switch reading function (Refer to <u>BCS-3</u>, "<u>COMBINATION SWITCH READING FUNCTION</u>"). Power is supplied

- through BCM terminal 45
- to front combination lamp LH terminal 2*1
- to front combination lamp LH terminal 1*2
- to rear combination lamp LH terminal 2.

Ground is supplied to front combination lamp LH terminal 1 through grounds E17, E43 and F152*1.

Ground is supplied to front combination lamp LH terminal 4 through grounds E17, E43 and F152*2.

Ground is supplied to rear combination lamp LH terminal 4 through grounds T14, B5, B6 and D105.

BCM also supplies ground to unified meter and A/C amp. terminals 1 and 11 across CAN communication lines. This input signal is processed by unified meter control unit in combination meter through unified meter and A/C amp., which in turn supplies ground to left turn signal indicator lamp.

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TURN SIGNAL AND HAZARD WARNING LAMPS

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

NOTE:

*1: Xenon headlamp, *2: halogen headlamp.

RH Turn

When turn signal switch (combination switch) is moved to RH position, BCM receives right turn signal by combination switch reading function (Refer to <u>BCS-3, "COMBINATION SWITCH READING FUNCTION"</u>). Power is supplied

- through BCM terminal 46
- to front combination lamp RH terminal 2^{*1}
- to front combination lamp RH terminal 1^{*2}
- to rear combination lamp RH terminal 2.

Ground is supplied to combination lamp RH terminal 1 through grounds E17, E43 and F152^{*1}.

Ground is supplied to front combination lamp RH terminal 4 through grounds E17, E43 and F152^{*2}. Ground is supplied to rear combination lamp RH terminal 4 through grounds T14, B5, B6 and D105.

BCM also supplies ground to unified meter and A/C amp. terminals 1 and 11 across CAN communication lines. This input is processed by unified meter control unit in combination meter through unified meter and A/C amp., which in turn supplies ground to right turn signal indicator lamp.

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

NOTE:

*1: Xenon headlamp, *2: Halogen headlamp.

HAZARD LAMP OPERATION

Power is supplied at all times

- to BCM terminal 55
- through 40A fusible link [letter F, located in fuse and fusible link block], and
- to combination meter terminal 24
- to unified meter and A/C amp. terminal 21
- through 10A fuse [No. 19, located in fuse block (J/B)].

Ground is supplied

- to hazard switch terminal 1
- through grounds M30 and M66,
- to BCM terminals 52
- through grounds M30 and M60,
- to unified meter and A/C amp. terminals 29 and 30
- through grounds M30 and M66.
- to combination meter terminals 10, 11 and 12
- through grounds M30 and M66.

When hazard switch is depressed, ground is supplied

- to BCM terminal 29
- through hazard lamp switch terminal 2.

BCM then supplies power

- through BCM terminal 45
- to front combination lamp LH terminal 2*1
- to front combination lamp LH terminal 1*2
- to rear combination lamp LH terminal 2
- through BCM terminal 46
- to front combination lamp RH terminal 2*1
- to front combination lamp RH terminal 1*2
- to rear combination lamp RH terminal 2.

Ground is supplied

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- to front combination lamp LH terminal 1 through grounds E17, E43 and F152*1 to front combination lamp LH terminal 4 through grounds E17, E43 and F152*2 to front combination lamp RH terminal 1 through grounds E17, E43 and F152*1 to front combination lamp RH terminal 4 through grounds E17, E43 and F152*2 to rear combination lamp LH terminal 4 through grounds T14. B5. B6 and D105. to rear combination lamp RH terminal 4 through grounds T14, B5, B6 and D105. BCM also supplies input to unified meter and A/C amp, terminals 1 and 11 across CAN communication lines. This input is processed by unified meter control unit in combination meter through unified meter and A/C amp.. which in turn supplies ground to the left and right turn signal indicator lamps. With power and ground supplied, BCM controls the flashing of hazard warning lamps. *1: Xenon headlamp, *2: Halogen headlamp. REMOTE KEYLESS ENTRY SYSTEM OPERATION Power is supplied at all times through 40A fusible link [letter F, located in fuse and fusible link block] to BCM (body control module) terminal 55 through 10A fuse [No. 18, located in fuse block (J/B)] to BCM (body control module) terminal 42 through 10A fuse [No. 19, located in fuse block (J/B)] to combination meter terminal 24, and to unified meter and A/C amp, terminal 21. Ground is supplied to BCM terminal 8 through grounds E17, E43 and F152 to unified meter and A/C amp. terminals 29 and 30 through grounds M30 and M66 to combination meter terminals 10, 11 and 12 through grounds M30 and M66. When remote keyless entry system is triggered by input signal from key fob, BCM supplies power through BCM terminal 45 to front combination lamp LH terminal 2*1 to front combination lamp LH terminal 1*2 to rear combination lamp LH terminal 2 through BCM terminal 46 to front combination lamp RH terminal 2*1 to front combination lamp RH terminal 1*2 to rear combination lamp RH terminal 2. Ground is supplied to front combination lamp LH terminal 1 through grounds E17, E43 and F152*1 to front combination lamp LH terminal 4 through grounds E17, E43 and F152*2
- to front combination lamp RH terminal 1 through grounds E17, E43 and F152*1
- to front combination lamp RH terminal 4 through grounds E17, E43 and F152*2
- to rear combination lamp LH terminal 4 through grounds T14, B5, B6 and D105
- to rear combination lamp RH terminal 4 through grounds T14, B5, B6 and D105.

BCM also supplies input signal to unified meter and A/C amp terminals 1 and 11 across CAN communication lines. This input is processed by unified meter control unit in combination meter through unified meter and A/C amp., which in turn supplies ground to the left and right turn signal indicator lamps.

With power and ground supplied, BCM controls the flashing of hazard warning lamps when key fob is used to activate remote keyless entry system.

NOTE:

*1: Xenon headlamp, *2: Halogen headlamp

COMBINATION SWITCH READING FUNCTION

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

CAN Communication System Description

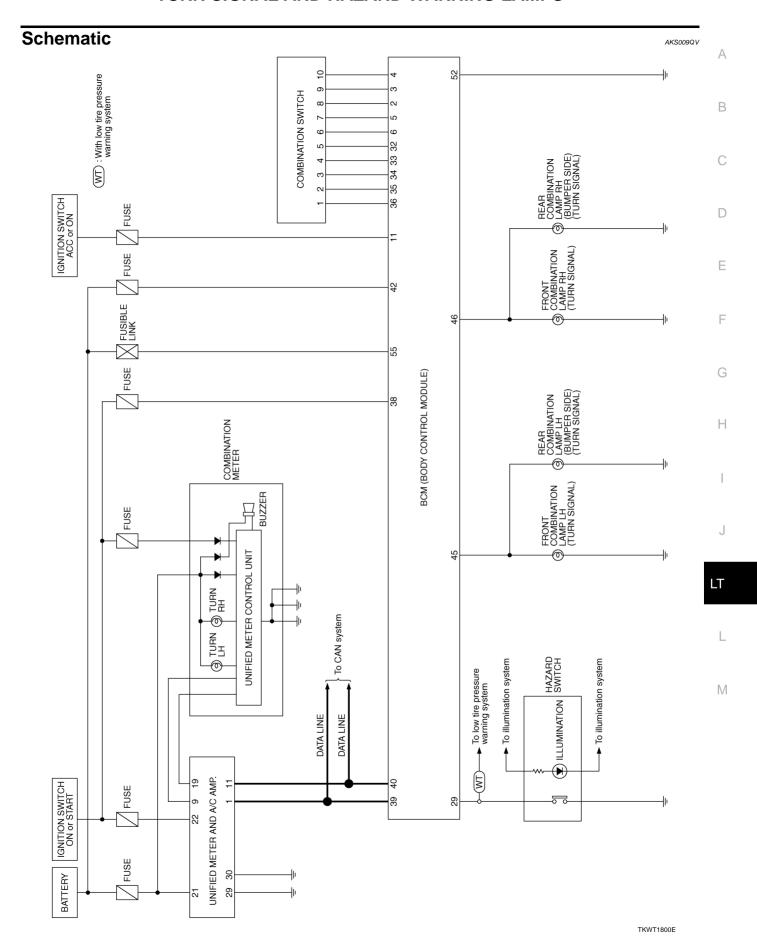
AKS009QT

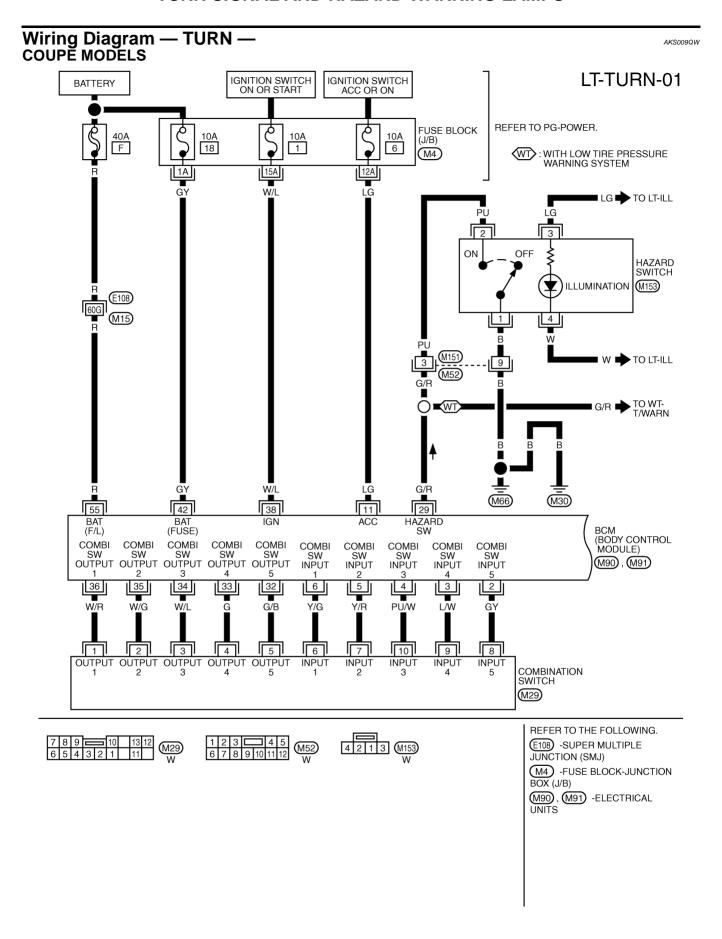
CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Unit

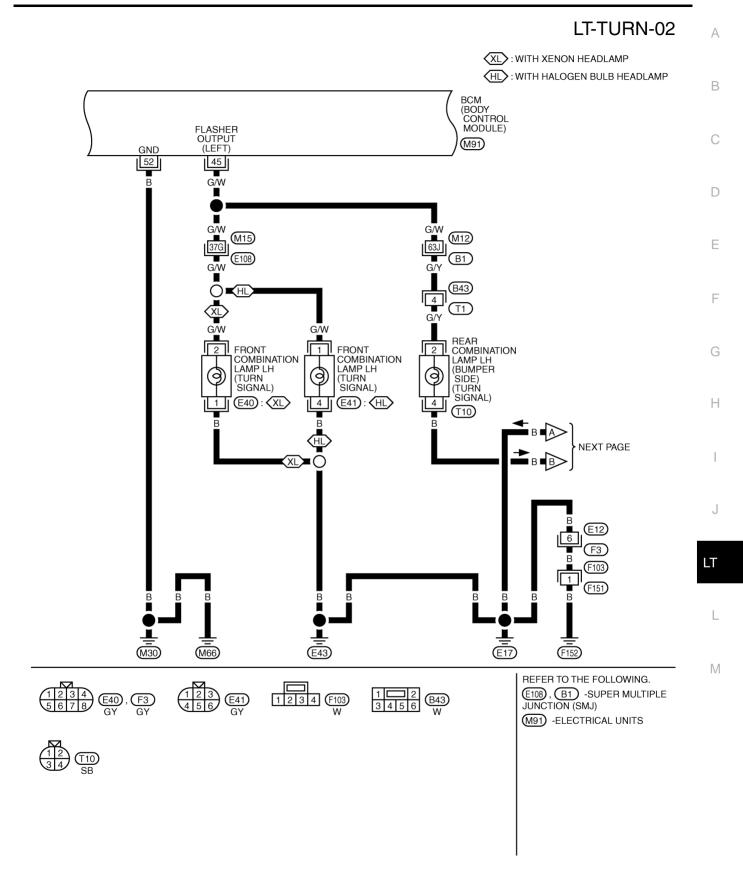
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Refer to LAN-5, "CAN Communication Unit" .



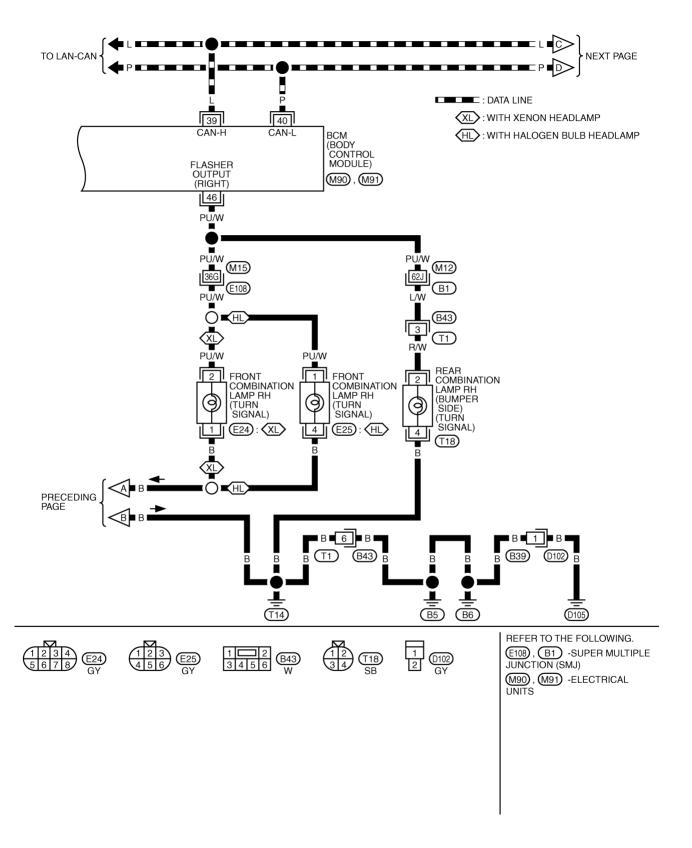


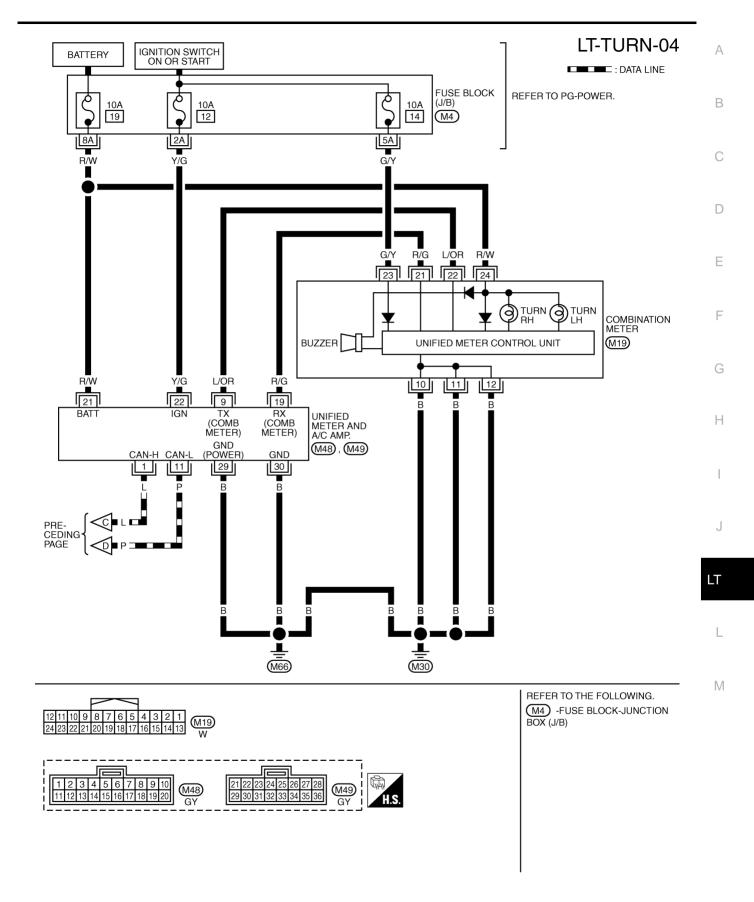
TKWT1801E



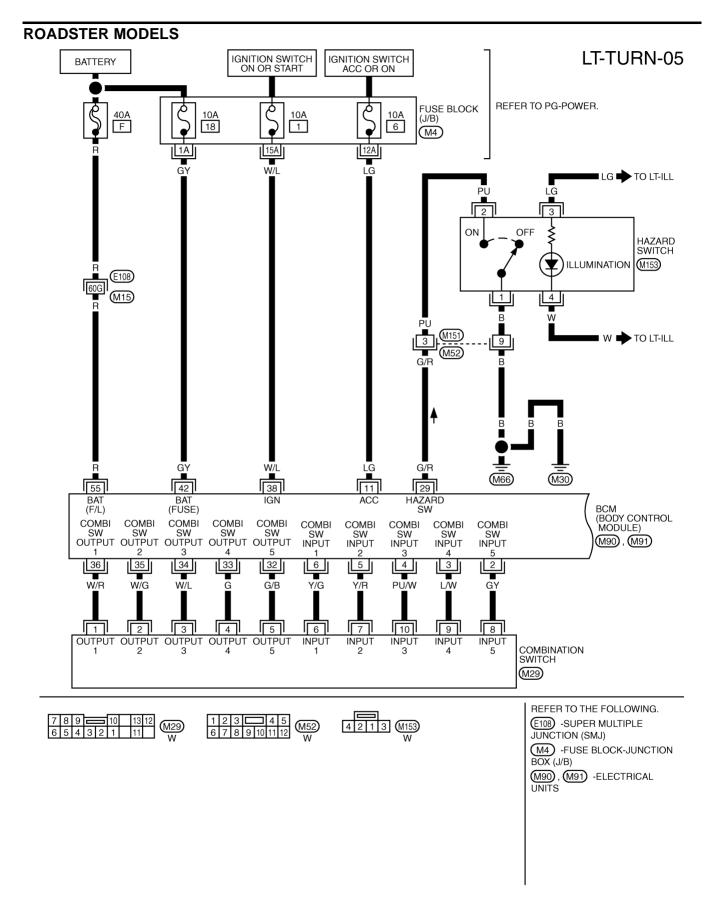
TKWT1802E

LT-TURN-03





TKWT1732E



BCM (BODY CONTROL MODULE) FLASHER OUTPUT (M91) (LEFT) GND 52 45 G/W Ĭ G/W 63J M12 (M15) 37G E108) **B1** (B61) 9 T23 G/B G/W REAR COMBINATION LAMP LH (BUMPER SIDE) (TURN SIGNAL) FRONT COMBINATION LAMP LH (TURN SIGNAL) 2 (9) **E**40 4 (T10) NEXT PAGE (E12) (F3) (F103) В В В Ţ ≛ ╧ (E17) (F152) (M30) (M66) (E43) REFER TO THE FOLLOWING. $\begin{array}{c|c} \hline 1 & 2 & 3 & 4 \\ \hline 5 & 6 & 7 & 8 \end{array} \begin{array}{c} \hline \text{E40} \\ \hline \text{GY} \end{array}, \begin{array}{c} \hline \text{F3} \\ \hline \text{GY} \end{array}$ (E108), (B1) -SUPER MULTIPLE JUNCTION (SMJ) 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 M91) -ELECTRICAL UNITS

TKWT1806E

LT-TURN-06

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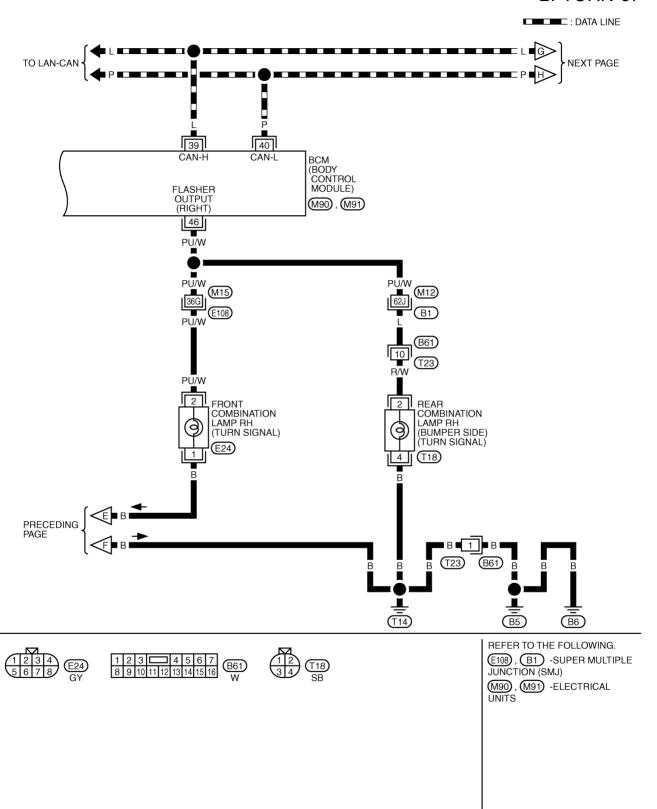
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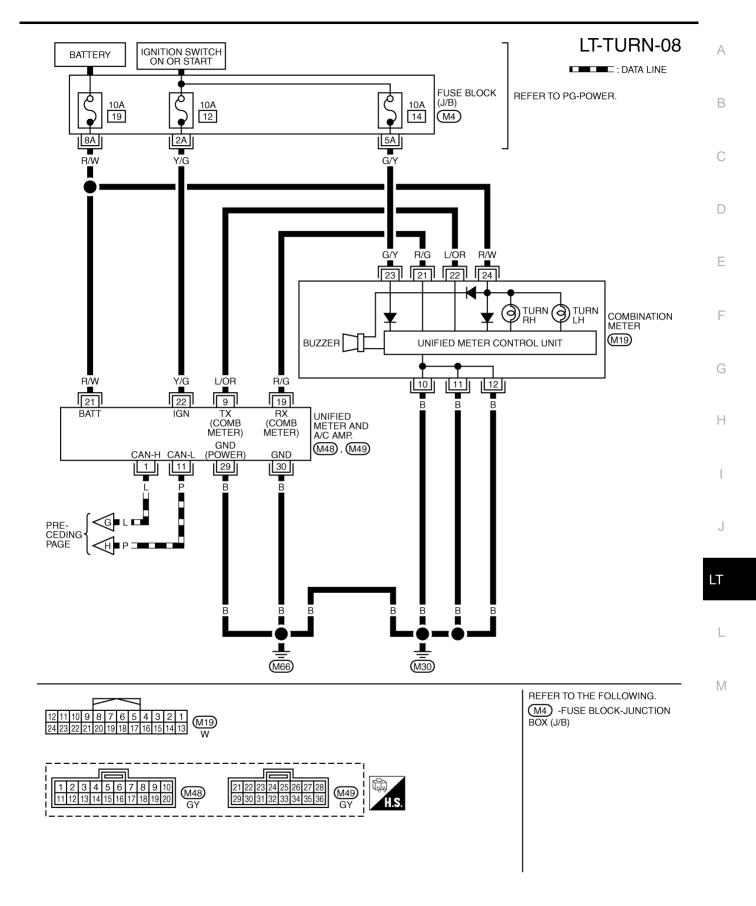
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LT-TURN-07



TKWT1807E



TKWT1600E

Terminals and Reference Values for BCM

AKS009QX

To making all	\			Measuring condition	
Terminal No.	Wire color	Signal name	Ignition switch	Operation or condition	Reference value
2	GY	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 ***5ms
3	L/W	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 ++5ms SKIA5292E
4	PU/W	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 64 2 0 *5ms
5	Y/R	Combination switch input 2			0.0
6	Y/G	Combination switch input 1	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 ++5ms SKIA5292E
11	LG	Ignition switch (ACC)	ACC	_	Battery voltage
29	G/R	Hazard switch signal	OFF	Hazard ON Switch OFF	Approx. 0V Approx. 5V
32	G/B	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 ****5ms
33	G	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 ++5ms SKIA5292E

Terminal	Wire	Vire		Measuring of	condition		
No.	Signal name Lighting		ion or condition	Reference value			
34	W/L	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4		(V) 6 4 2 0 ***5ms	
35	W/G	Combination switch output 2					
36	W/R	Combination switch output 1	ON	Lighting, turn, wiper OFF Wiper dial position 4		(V) 6 4 2 0 	
38	W/L	Ignition switch (ON)	ON	_		Battery voltage	
39	L	CAN-H	_	_		_	
40	Р	CAN-L	_	_		_	
42	GY	Battery power supply	OFF	_		Battery voltage	
45	G/W	Turn signal (left)	ON	Combina- tion switch	Turn left ON	(V) 15 10 5 0 500 ms	
46	PU/W	Turn signal (right)	ON	Combina- tion switch	Turn right ON	(V) 15 10 500 ms SKIA3009J	
52	В	Ground	ON	_		Approx. 0V	
55	R	Battery power supply	OFF		_	Battery voltage	

How to Proceed With Trouble Diagnosis

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- 1. Confirm the symptom or customer complaint.
- 2. Understand operation description and function description. Refer to LT-143, "System Description".
- 3. Perform preliminary check. Refer to LT-158, "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 CHECK POWER SUPPLY AND GROUND CIRCUIT

AKS009QZ

1. CHECK FUSES

Check for blown BCM fuses.

UNIT	POWER SOURCE	Fuse and fusible link No.
	Pottony	F
BCM	Battery	18
BCIVI	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
Combination meter	Battery	19
Combination meter	Ignition switch ON or START position	14
Unified motor and A/C amp	Battery	19
Unified meter and A/C amp.	Ignition switch ON or START position	12

Refer to LT-148, "Wiring Diagram — TURN —".

OK or NG

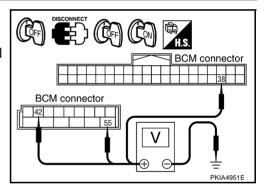
OK >> GO TO 2.

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

2. CHECK POWER SUPPLY CIRCUIT

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

	Terminals		Ignition switch position	
((+)			ON
Connector	Terminal (Wire color)	(-)	OFF	
M90	38 (W/L)		0V	Battery voltage
M91	42 (GY)	Ground	Battery voltage	Battery voltage
IVI9 I	55 (R)		Battery voltage	Battery voltage



OK or NG

OK >> GO TO 3.

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

3. CHECK GROUND CIRCUIT

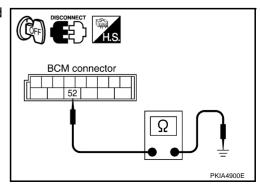
Check continuity between BCM harness connector terminal and ground.

	Terminals				
Connector	Connector Terminal (Wire color) Ground				
M91	52 (B)	Ground	Yes		

OK or NG

OK >> INSPECTION END

NG >> Check ground circuit harness.



CONSULT-II Functions

AKS009R0

CONSULT-II performs the following functions communicating with BCM.

BCM diagnosis part Check item, diagnosis mo		Description	
FLASHER	DATA MONITOR	Displays BCM input data in real time.	
LAGILIN	ACTIVE TEST	Operation of electrical loads can be checked by sending driving signal to them	

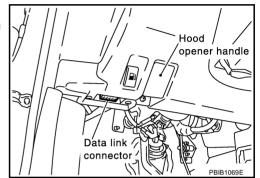
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CONSULT-II BASIC OPERATION

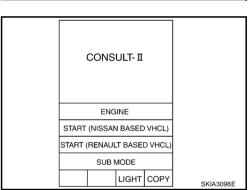
CAUTION:

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.

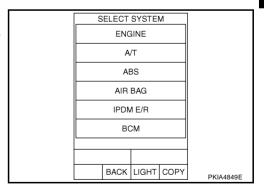
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



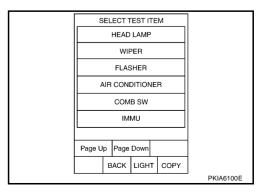
Touch "START(NISSAN BASED VHCL)".



Touch "BCM" on "SELECT SYSTEM" screen. If "BCM" is not indicated, refer to GI-39, "CONSULT-II Data Link Connector (DLC) Circuit".



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



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DATA MONITOR

Operation Procedure

- 1. Touch "FLASHER" on "SELECT TEST ITEM" screen.
- 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 and monitors the individual signal.	

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

Display Item List

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

NOTE:

This item is displayed, but cannot monitor it.

ACTIVE TEST

Operation Procedure

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

Display Item List

Test item	Description
FLASHER	With a certain operation (OFF, RH, LH), turn signal lamp can be operated.

Turn Signal Lamp Does Not Operate

AKS00AP2

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

(E)With CONSULT-II

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

When lighting switch is : TURN SIGNAL R ON

TURN RH position

When lighting switch is : TURN SIGNAL L ON

TURN LH position

(R)Without CONSULT-II

Refer to LT-170, "Combination Switch Inspection".

OK or NG

OK >> GO TO 3.

NG >> Check lighting switch. Refer to LT-170, "Combination Switch Inspection".

3. ACTIVE TEST

(P)With CONSULT-II

- 1. Select "FLASHER" during active test. Refer to LT-160, "ACTIVE TEST".
- 2. Make sure "FLASHER RIGHT" and "FLASHER LEFT" operate.

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".

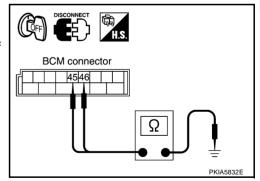
NG >> GO TO 4.

ACTIVE TEST FLASHER OFF RH LH OFF MODE BACK LIGHT COPY PKIA6352E

4. CHECK SHORT CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect BCM connector and all turn signal lamp connectors.
- 3. Check continuity (short circuit) between harness connector of BCM and ground.

	Terminals					
	ВСМ					
Con	Connector Terminal (Wire color)		Ground			
RH	M91	46 (PU/W)	Giouna	No		
LH	IVIÐT	45 (G/W)				



OK or NG

OK >> Replace BCM if turn signal lamps does not work after setting the connector again. Refer to <u>BCS-17</u>, "Removal and Installation of BCM".

NG >> Repair harness or connector.

DATA MONITOR

MONITOR

NO DTC

TURN SIGNAL R

ON

TURN SIGNAL L

ON

MODE BACK LIGHT COPY

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Hazard Warning Lamp Does Not Operate But Turn Signal Lamp Operate

AKS00AP3

1. CHECK BULB

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

OK or NG

OK >> GO TO 2.

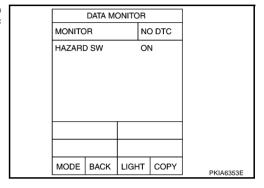
NG >> Replace bulb.

2. CHECK HAZARD SWITCH INPUT SIGNAL

(P)With CONSULT-II

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

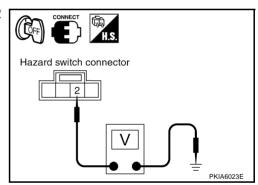
When hazard switch is ON : HAZARD SW ON position



Without CONSULT-II

Check voltage between BCM harness connector M153 terminal 2 (PU) and ground.

	Terminals				
(+)		Condition	Voltage	
Connector	Connector Terminal (Wire color)				
M153	2 (PU)	Ground	Hazard switch is ON	Approx. 0V	
W1133	2 (FU)		Hazard switch is OFF	Approx. 5V	
-11					



OK or NG

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

NG >> GO TO 3.

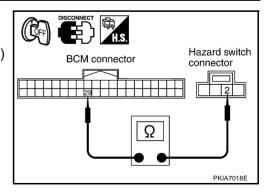
3. CHECK HAZARD SWITCH CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect BCM connector and hazard switch connector.
- 3. Check continuity BCM harness connector M90 terminal 29 (G/R) and hazard switch harness connector M153 terminal 2 (PU).

OK or NG

OK >> GO TO 4.

NG >> Repair harness or connector.



4. CHECK GROUND

Check continuity hazard switch harness connector M153 terminal 1 (B) and ground.

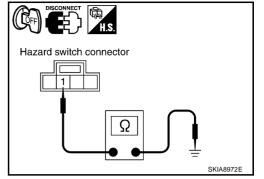
1 (B) - Ground

: Continuity should exist.

OK or NG

OK >> GO TO 5.

NG >> Repair harness or connector.



5. CHECK HAZARD SWITCH

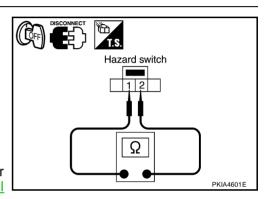
- 1. Disconnect hazard switch connector.
- 2. Check continuity hazard switch.

Terr	ninal	Condition	Continuity	
Hazard switch		Condition	Continuity	
1	2	Hazard switch is ON.	Yes	
ı		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.



Turn Signal Indicator Lamp Does Not Operate

1. CHECK BULB

Inspect bulb of turn signal indicator lamp in combination meter.

OK or NG

OK >> Replace combination meter.

NG >> Replace indicator bulb.

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Bulb Replacement (Front Turn Signal Lamp) Refer to LT-34, "Bulb Replacement" in "HEADLAMP (FOR USA)". Bulb Replacement (Rear Turn Signal Lamp) Refer to LT-205, "Bulb Replacement" in "REAR COMBINATION LAMP". Removal and Installation of Front Turn Signal Lamp

AKS00AP8

Refer to LT-36, "Removal and Installation" in "HEADLAMP (FOR USA)".

Removal and Installation of Rear Turn Signal Lamp

Refer to LT-206, "Removal and Installation" in "REAR COMBINATION LAMP".

LIGHTING AND TURN SIGNAL SWITCH

LIGHTING AND TURN SIGNAL SWITCH

PFP:25540

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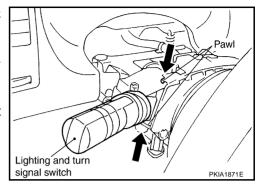
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Removal and Installation REMOVAL

1. Remove steering column lower cover. Refer to <u>IP-10, "INSTRU-MENT PANEL ASSEMBLY"</u> in "IP" section.

- Remove column upper cover and combination meter assembly. Refer to <u>IP-10</u>, "<u>INSTRUMENT PANEL ASSEMBLY</u>" in "IP" section.
- 3. While pressing pawls in direction as shown in the figure, pull lighting and turn signal switch toward driver door and disconnect from the base.



INSTALLATION

Install in the reverse order of removal.

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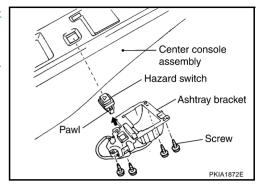
HAZARD SWITCH

HAZARD SWITCH PFP:25290

Removal and Installation REMOVAL

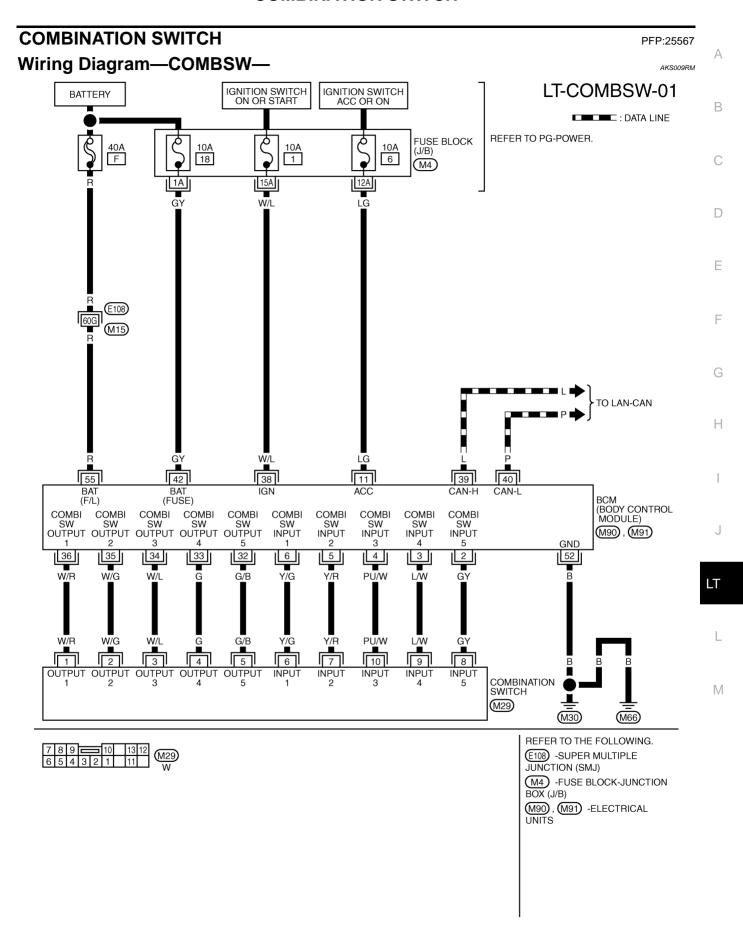
AKS000UV

- 1. Remove center console assembly. Refer to <u>IP-10, "INSTRU-MENT PANEL ASSEMBLY"</u> in "IP" section.
- 2. Disconnect hazard switch connector.
- 3. Remove ashtray bracket assembly from center console assembly.
- 4. Press pawl on reverse side and remove the hazard switch.



INSTALLATION

Install in the reverse order of removal.



TKWT1809E

Combination Switch Reading Function

AKS00AP9

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

CONSULT-II Functions

ΔΚΩΛΛΔΡΔ

CONSULT-II performs the following functions with combination of data receiving, command and transmission using CAN communication line from BCM.

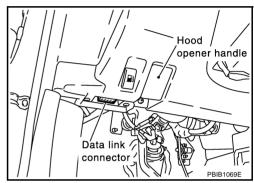
BCM diagnosis part	Check item, diagnosis mode	Description		
Combination switch	Data monitor	Displays BCM input data in real time.		

CONSULT-II BASIC OPERATION

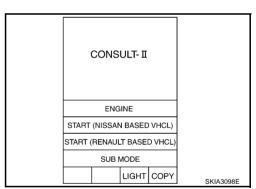
CAUTION:

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.

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



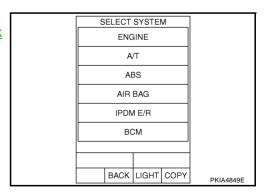
2. Touch "START (NISSAN BASED VHCL)".



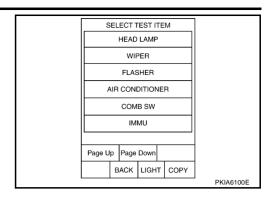
3. Touch "BCM" on "SELECT SYSTEM" screen.

If "BCM" is not indicated, refer to GI-39, "CONSULT-II Data Link

Connector (DLC) Circuit".



4. Touch "COMB SW".



DATA MONITOR

Operation Procedure

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

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

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

Display Item List

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

NOTE:

This item is displayed, but cannot monitor it.

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Combination Switch Inspection

1. SYSTEM CHECK

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

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	_	_	LIGHT SW 1ST
INT VOLUME 2	RR WIPER ON	_	FR FOG	_

>> Check the system to which malfunctioning switch belongs, and GO TO 2.

2. system check

(P)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.

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

DATA MONITOR					
MONITOR			N	O DTC	
FR WIPER LOW FR WIPER INT				OFF OFF	
		DI		ODD	
l R			=0	ORD	
MODE BACK LIGH			Т	COPY	PKIA7019E

AKS00APB

Without CONSULT-II

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

Check results

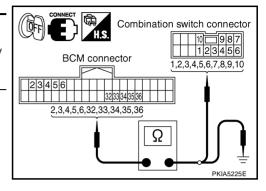
Other switches in malfunctioning system operate normally.>>Replace lighting switch or wiper switch.

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

3. HARNESS INSPECTION

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

		Terminals						
Sus- pect system Connector		BCM		Combina	Continuity			
	Connector	Terminal (Wire color)		Connector	Terminal (Wire color)			
1		Input 1	6 (YG)		6 (YG)			
'		Output 1	36 (W/R)		1 (W/R)			
2		Input 2	5 (Y/R)		7 (Y/R)			
2	2	Output 2	35 (W/G)		2 (W/G)			
3	M90	Input 3	4 (PU/W)	M29	10 (PU/W)	Yes		
3	IVISO	Output 3	34 (W/L)	IVIZƏ	3 (W/L)			
	4 Output	Input 4	3 (L/W)		9 (L/W)			
7		Output 4	33 (G)		4 (G)			
5		Input 5	2 (GY)		8 (GY)			
3		Output 5	32 (G/B)		5 (G/B)			



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

		Terr				
Suspect system		BCM (+)	()	Continuity		
-,	Connector	Terminal	(Wire color)	(-)		
1		Input 1	6 (YG)			
'		Output 1	36 (W/R)		No	
2	2	Input 2	5 (Y/R)			
2		Output 2	35 (W/G)			
3	M90	Input 3	4 (PU/W)	Ground		
3	IVI9U	Output 3	34 (W/L)	Giodila		
4		Input 4	3 (L/W)			
4		Output 4	33 (G)			
5		Input 5	2 (GY)			
5		Output 5	32 (G/B)			

OK or NG

OK >> GO TO 4.

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

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4. BCM OUTPUT TERMINAL INSPECTION

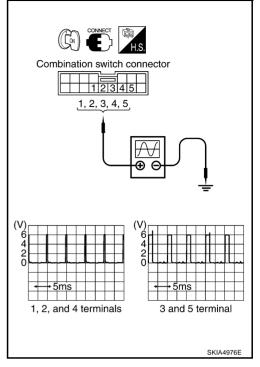
- 1. Turn lighting switch and wiper switch OFF.
- 2. Set wiper dial position 4.
- Connect BCM and combination switch connectors, and check BCM output terminal voltage waveform of suspect malfunctioning system.

	Terminals						
Suspect system	Comb	ination switch (+)	(-)				
- ,	Connector	Terminal (Wire color)	(-)				
1		1 (W/R)					
2		2 (W/G)					
3	M29	M29 3 (W/L) Gr					
4		4 (G)					
5		5 (G/B)					

OK or NG

OK >> Open circuit in combination switch, GO TO 5.

NG >> Replace BCM.



5. COMBINATION SWITCH INSPECTION

Referring to table below, perform combination switch inspection.

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

>> INSPECTION END

Removal and Installation

AKS00APC

For details, refer to LT-165, "LIGHTING AND TURN SIGNAL SWITCH" .

STOP LAMP

STOP LAMP PFP:26550 **Component Parts and Harness Connector Location** AKS00AT0 1ÓA Fuse block (J/B) fuse layout

System Description

Stop lamp switch A/T:(E111) M/T: (E112)

PKIA6964E

The current that flows by Rear combination lamp unit is controlled, and a stop lamp (LED) is made to turn on.

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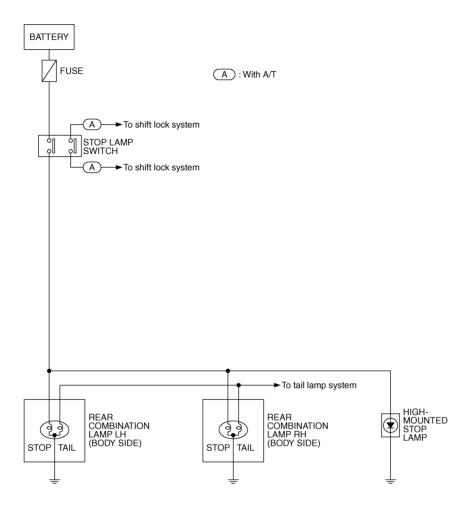
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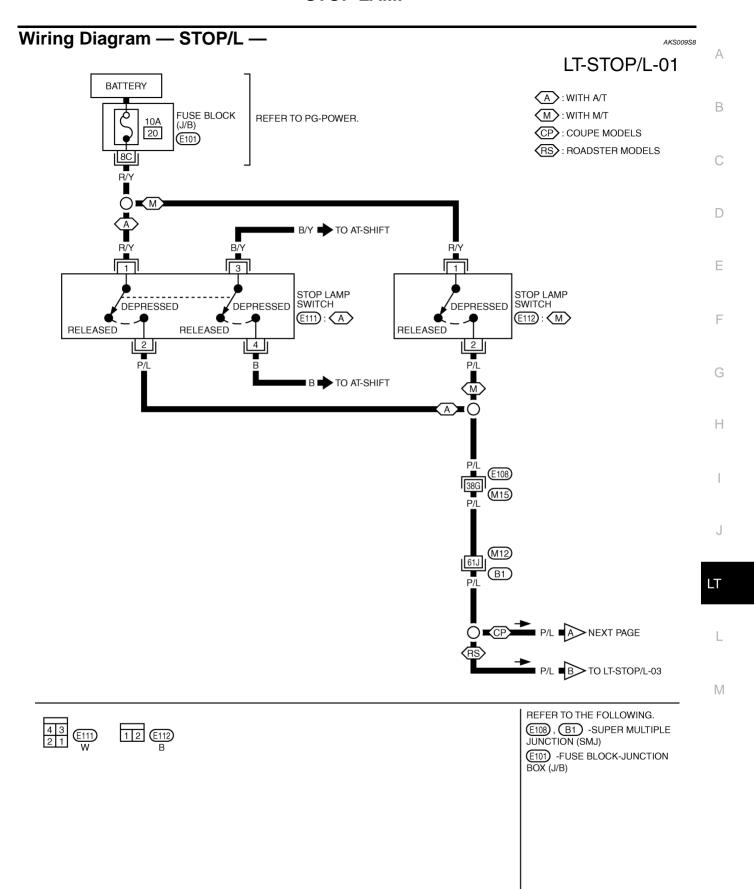
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Schematic

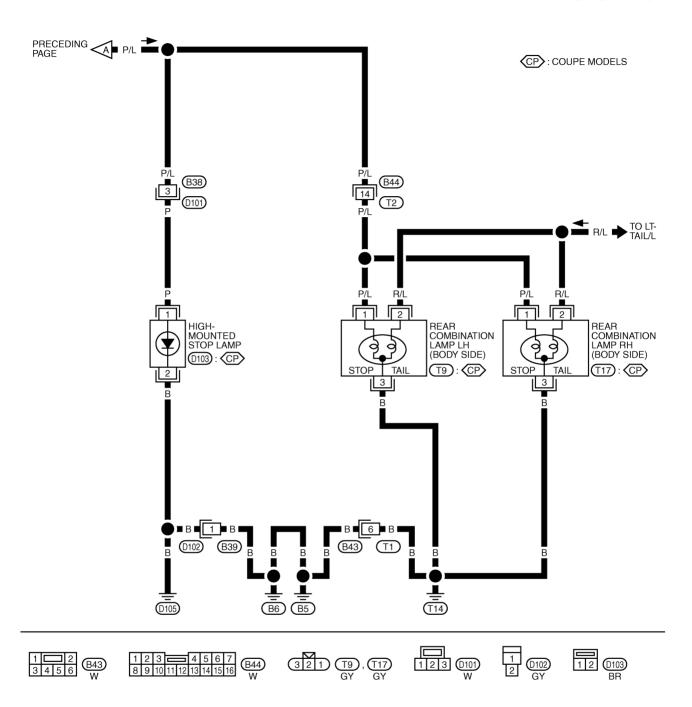


STOP LAMP

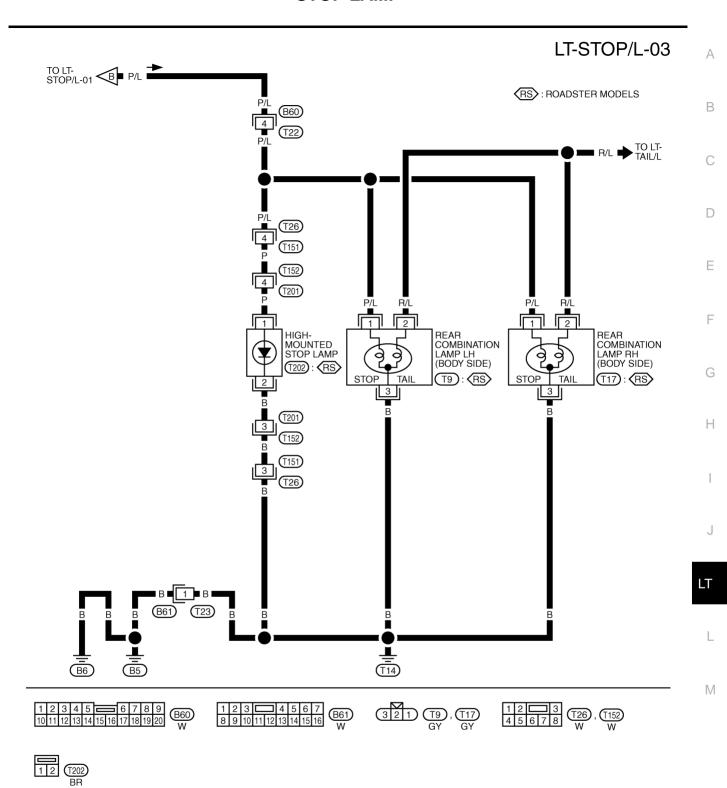


TKWT1602E

LT-STOP/L-02



STOP LAMP



TKWT1604E

STOP LAMP

High-Mounted Stop Lamp (Coupe Models) BULB REPLACEMENT, REMOVAL AND INSTALLATION

- 1. Remove back door finisher upper Refer to <u>EI-47, "BACK DOOR</u> FINISHER" in "EI" section.
- 2. Disconnect high-mounted stop lamp connector.
- 3. Remove Nuts and remove high-mounted stop lamp with cover from back door. Be sure to pull toward the arrow in the figure.
- 4. Remove screws and remove high-mounted stop lamp assembly from cover.
- Install in the reverse order of removal.

High-mounted stop lamp : LED

High-Mounted Stop Lamp (Roadster Models) BULB REPLACEMENT, REMOVAL AND INSTALLATION

- 1. Turn ignition switch ON, and turn soft-top OPEN/CLOSE switch ON.
- 2. When the storage lid is fully opened, soft-top OPEN/CLOSE switch to OFF.
- 3. Remove battery negative cable.
- 4. Disconnect high-mounted stop lamp connector.
- 5. Remove high-mounted stop lamp. Be sure to pull toward the arrow in the figure.
- 6. Remove high-mounted stop lamp assembly from storage lid.
- 7. Install in the reverse order of removal.

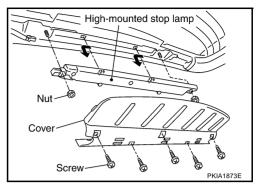
High-mounted stop lamp : LED

Stop Lamp BULB REPLACEMENT

Refer to LT-205, "Bulb Replacement" in "REAR COMBINATION LAMP".

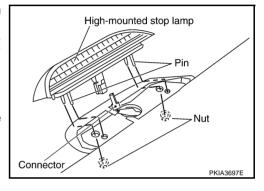
REMOVAL AND INSTALLATION

Refer to LT-206, "Removal and Installation" in "REAR COMBINATION LAMP".

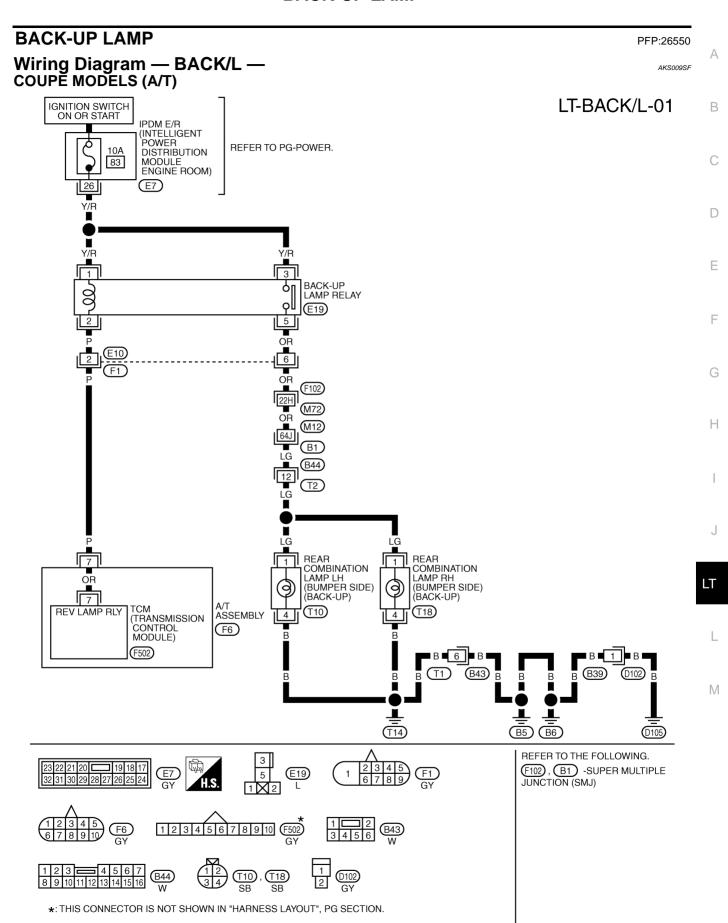


AKS003U0

AKS009S9



AKS009SA



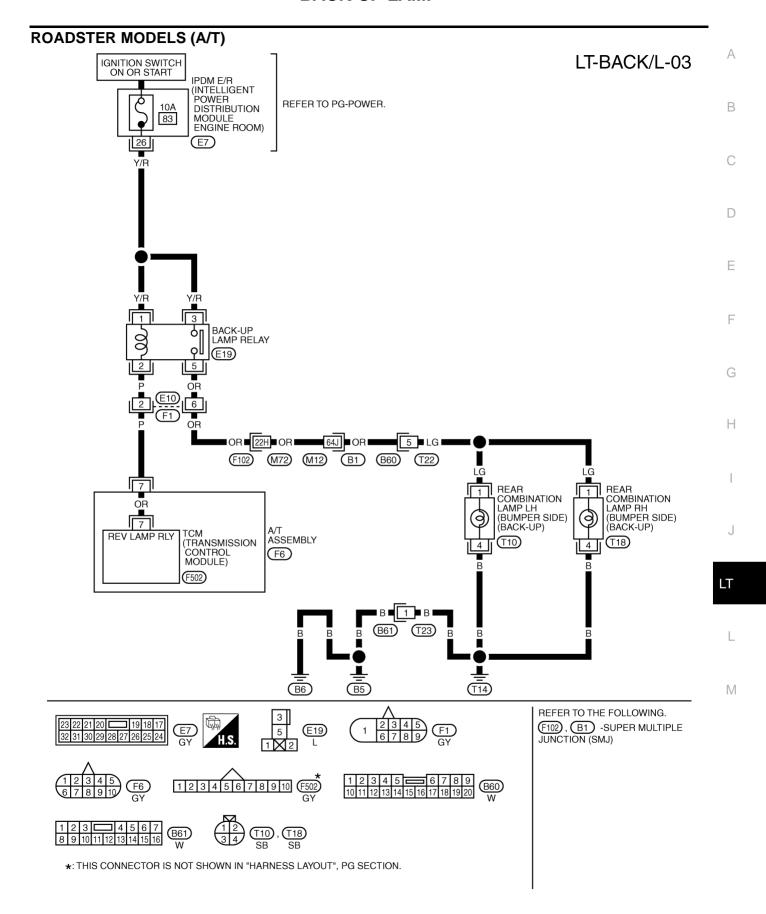
TKWM1315E

BACK-UP LAMP

COUPE MODELS (M/T) IGNITION SWITCH ON OR START LT-BACK/L-02 IPDM E/R (INTELLIGENT POWER REFER TO PG-POWER. 10A DISTRIBUTION MODULE ENGINE ROOM) 83 26 (E7) G/W 2 Y/R E10 (F1) BACK-UP LAMP SWITCH OTHERS (F36) (M72) (M12) (B1) (B44) (T2) LG LG REAR COMBINATION LAMP LH (BUMPER SIDE) (BACK-UP) REAR COMBINATION LAMP RH (BUMPER SIDE) (BACK-UP) (T10) (T18) ■B■6 ■B■ B T1 (B39) (D102) (B43) В В В ┸ ┻ ┸ T14 (B5) (B6) (D105) REFER TO THE FOLLOWING. (F102), (B1) -SUPER MULTIPLE JUNCTION (SMJ) **E7** (B43) W (B44) W T10, T18

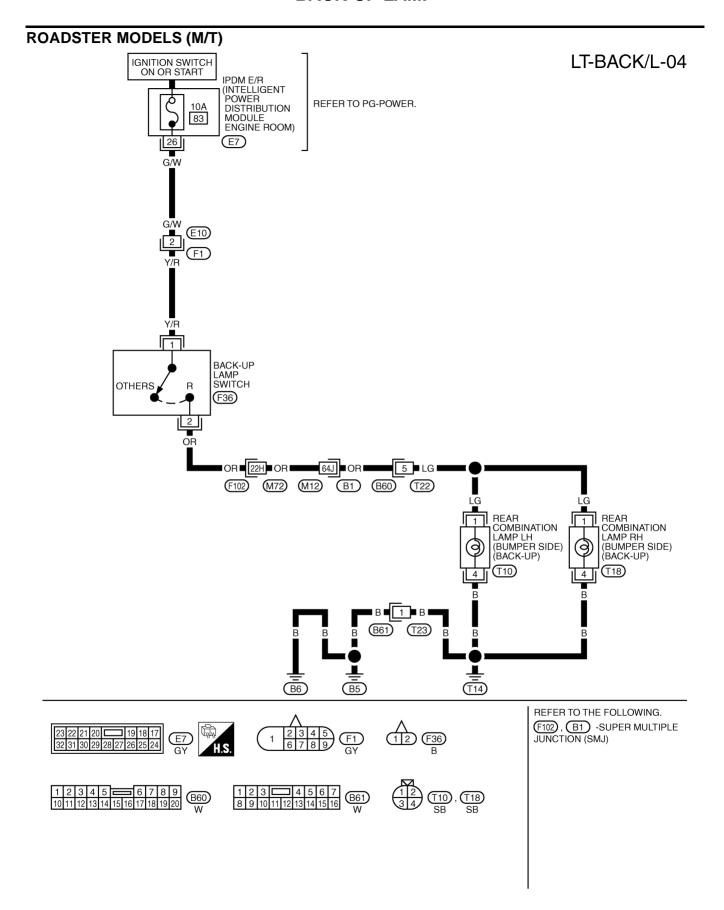
TKWT1326E

BACK-UP LAMP



TKWM1316E

BACK-UP LAMP



TKWT1606E

BACK-UP LAMP

BACK-OF LAWIF	
Bulb Replacement	AKS000V8
Refer to LT-205, "Bulb Replacement" in "REAR COMBINATION LAMP".	
Removal and Installation	AKS000V9
Refer to LT-206, "Removal and Installation" in "REAR COMBINATION LAMP".	

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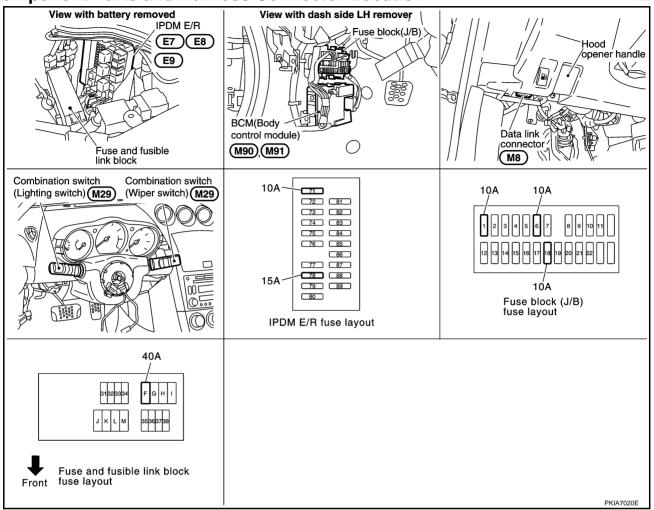
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PFP:26550

Component Parts and Harness Connector Location

AKS00ADQ



System Description

AKS009RU

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

OUTLINE

Power is supplied at all times

- through 10A fuse [No.71, located in IPDM E/R (intelligent power distribution module engine room)]
- to tail lamp relay [located in IPDM E/R (intelligent power distribution module engine room)]
- through 15A fuse [No.78, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)].

Power is also supplied at all times

- through 40A fusible link (letter F, located in fuse and fusible link block)
- to BCM (body control module) terminal 55
- through 10A fuse [No.18, located in fuse block (J/B)]
- to BCM (body control module) terminal 42.

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

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to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)] through 10A fuse [No.1, located in fuse block (J/B)] to BCM (body control module) terminal 38. With ignition switch in ACC or ON position, power is supplied through 10A fuse [No. 6, located in fuse block (J/B)] to BCM (body control module) terminal 11. Ground is supplied to BCM (body control module) terminal 52 through grounds M30 and M66 to IPDM E/R (intelligent power distribution module engine room) terminals 38 and 60 through grounds E17, E43 and F152. **OPERATION BY LIGHTING SWITCH** With lighting switch in the 1st or 2nd position (or if auto light system is activated), BCM receives input signal requesting parking, license plate, side marker and tail lamps to illuminate. This input is communicated to IPDM E/R across CAN communication lines. CPU in IPDM E/R controls tail lamp relay coil, which when energized, directs power through IPDM E/R terminal 22 to front combination lamp LH terminals 5 and 6 (With xenon bulb headlamp) to front combination lamp LH terminal 5 (With halogen bulb headlamp) to front combination lamp RH terminals 5 and 6 (With xenon bulb headlamp) to front combination lamp RH terminal 5 (With halogen bulb headlamp) to rear combination lamp LH terminals 2 and 5 to rear combination lamp RH terminals 2 and 5 to license plate lamp LH terminal 2 to license plate lamp RH terminal 2. Ground is supplied at all times to front combination lamp LH terminal 1 (With xenon bulb headlamp) to front combination lamp LH terminal 4 (With halogen bulb headlamp) through grounds E17, E43 and F152 to front combination lamp RH terminal 1 (With xenon bulb headlamp) to front combination lamp RH terminal 4 (With halogen bulb headlamp) through grounds E17, E43 and F152 to rear combination lamp LH terminals 3 and 4 through grounds D105, B5, B6 and T14 (Coupe models) through grounds B5, B6 and T14 (Roadster models) to rear combination lamp RH terminals 3 and 4 through grounds D105, B5, B6 and T14 (Coupe models) through grounds B5, B6 and T14 (Roadster models) to license plate lamp LH terminal 1 through grounds D105, B5, B6 and T14 (Coupe models) through grounds B5, B6 and T14 (Roadster models) to license plate lamp RH terminal 1 through grounds D105, B5, B6 and T14 (Coupe models) through grounds B5, B6 and T14 (Roadster models). With power and ground supplied, parking, license plate side marker and tail lamps illuminate.

COMBINATION SWITCH READING FUNCTION

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

EXTERIOR LAMP BATTERY SAVER CONTROL

When combination switch (lighting switch) is in the 1ST (or 2ND) position, and ignition switch is turned from ON or ACC to OFF, battery saver control function is activated.

Under this condition, parking, license plate, side marker and tail lamps remain illuminated for 5 minutes, then parking, license plate, side marker and tail lamps are turned off.

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

CAN Communication System Description

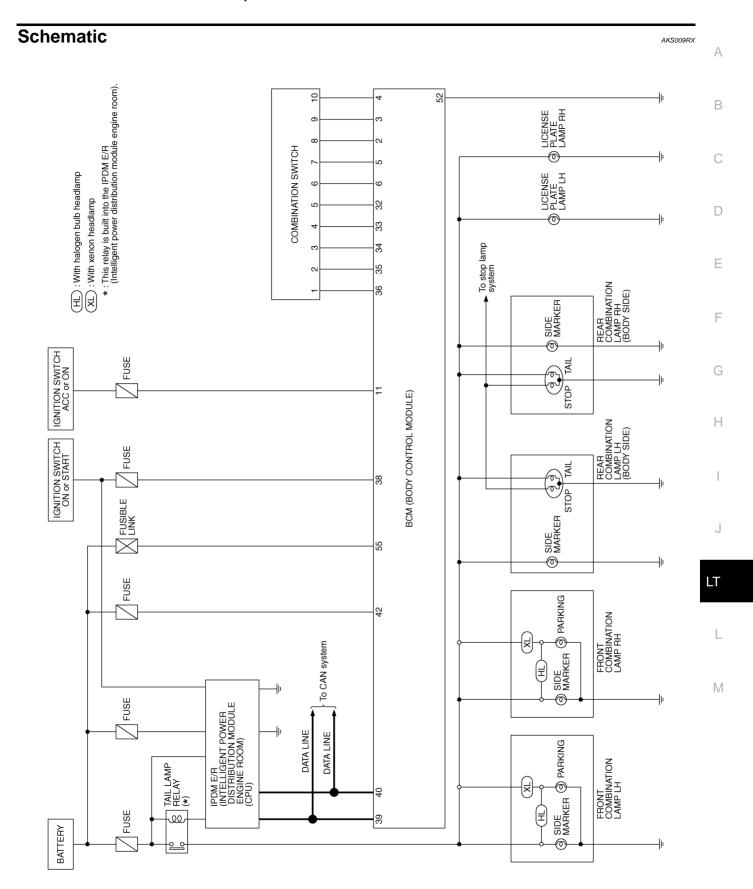
AKS009RV

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

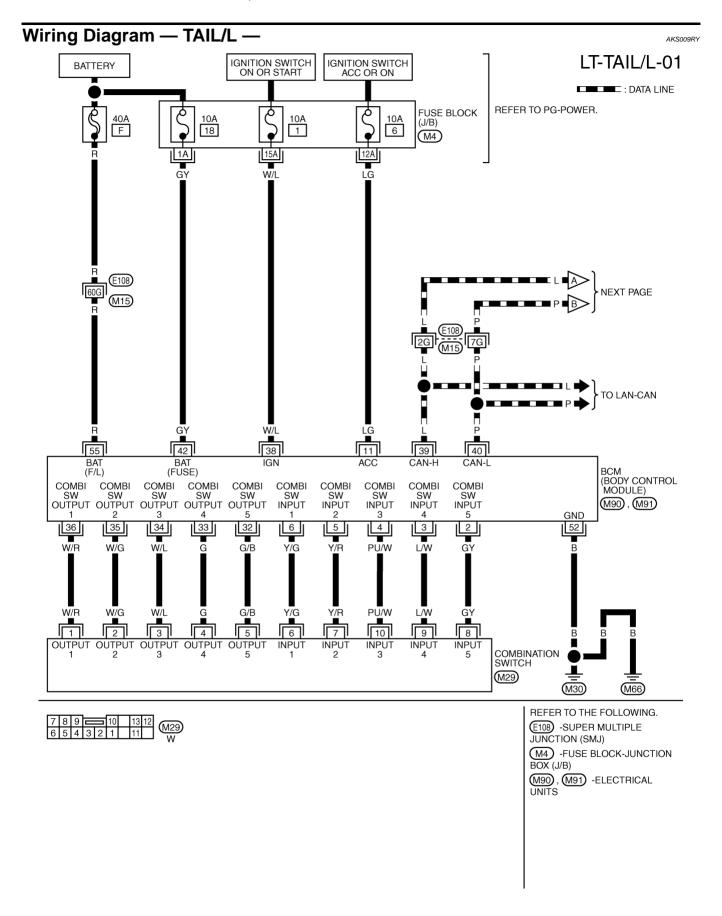
CAN Communication Unit

AKS009RW

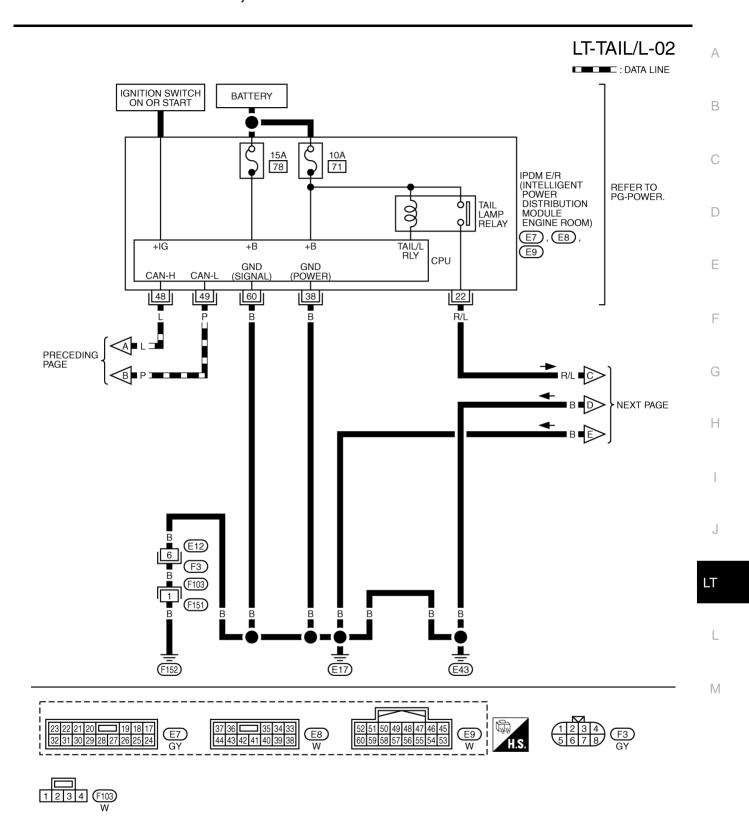
Refer to LAN-5, "CAN Communication Unit" .



TKWT1810E



TKWT1811E



TKWT1812E

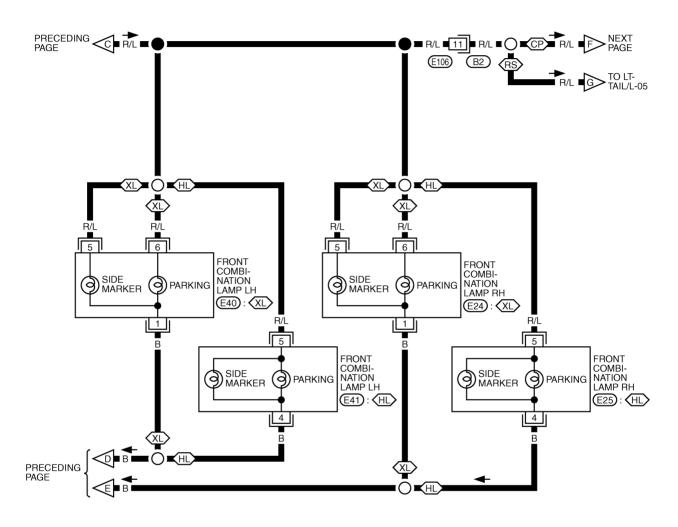
LT-TAIL/L-03

(CP): COUPE MODELS

(RS): ROADSTER MODELS

HL: WITH HALOGEN BULB HEADLAMP

(XL): WITH XENON HEADLAMP



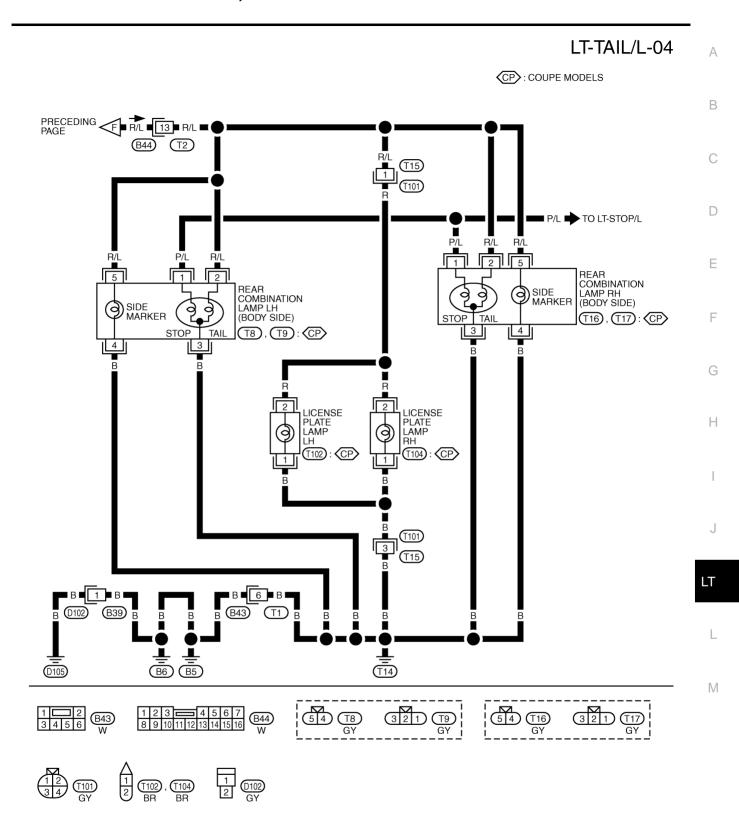






1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

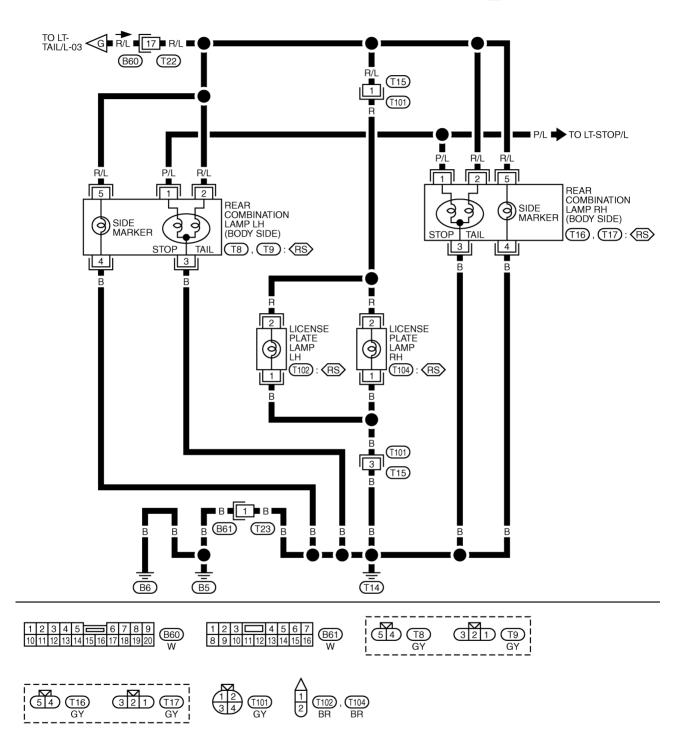
TKWT1813E



TKWT1814E

LT-TAIL/L-05

(RS): ROADSTER MODELS



TKWT1815E

		nd Reference Values			AKS00APD
Terminal	Wire			Measuring condition	
No.	color	Signal name	Ignition switch	Operation or condition	Reference value
2	GY	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 **5ms
3	L/W	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 64 2 0 **-5ms
4	PU/W	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 *** 5ms
5	Y/R	Combination switch input 2			
6	Y/G	Combination switch input 1	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 64 2 0
11	LG	Ignition switch (ACC)	ACC	_	Battery voltage
32	G/B	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 **5ms SKIA5291E
33	G	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 +5ms SKIA5292E
34	W/L	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 **5ms SKIA5291E

Terminal	Wire			Measuring condition	
No.	color	Signal name	Ignition switch	Operation or condition	Reference value
35	W/G	Combination switch output 2			0.0
36	W/R	Combination switch output 1	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 → • 5 ms SKIA5292E
38	W/L	Ignition switch (ON)	ON	_	Battery voltage
39	L	CAN- H	_	_	_
40	Р	CAN- L	_	_	_
42	GY	Battery power supply	OFF	_	Battery voltage
52	В	Ground	ON	_	Approx. 0V
55	R	Battery power supply	OFF		Battery voltage

Terminals and Reference Values for IPDM E/R

AKS009SG

Terminal	l Wire			Measuring con		
No.	color	Signal name	Ignition switch	Conception or condition		Reference value
22	R/L	Parking, license, and tail	ON	Lighting switch	OFF	Approx. 0V
22	IV/L	lamp	ON	1ST position	ON	Battery voltage
38	В	Ground	ON	-	_	Approx. 0V
48	L	CAN- H	_	-	_	_
49	Р	CAN- L	_	-	_	_
60	В	Ground	ON	_		Approx. 0V

How to Proceed With Trouble Diagnosis

AKS009S0

- 1. Confirm the symptom or customer complaint.
- 2. Understand operation description and function description. Refer to LT-184, "System Description".
- 3. Carry out preliminary check. Refer to LT-194, "Preliminary Check".
- 4. Check symptom and repair or replace the cause of malfunction.
- 5. Do parking, license plate and tail lamps operate normally? If YES: GO TO 6. If NO: GO TO 4.
- 6. INSPECTION END

Preliminary Check CHECK POWER SUPPLY AND GROUND CIRCUIT

AKS009S1

1. CHECK FUSES

Check fuses for blown-out.

Unit	Power source	Fuse and fusible link No.
	Pottoni	F
DOM	Battery	18
BCM	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
IDDM E/D	Dettern	71
IPDM E/R	Battery	78

Refer to LT-188, "Wiring Diagram — TAIL/L —".

OK or NG

OK >> GO TO 2.

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

2. CHECK POWER SUPPLY CIRCUIT

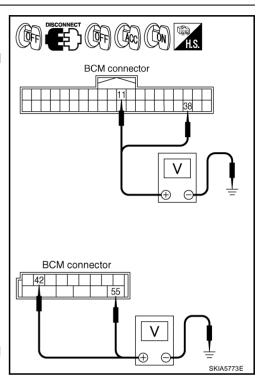
- 1. Turn ignition switch OFF.
- 2. Disconnect BCM connector.
- Check voltage between BCM harness connector terminals and ground.

	Terminals		Ignition switch position		
(+)					
Connector	Terminal (Wire color)	(–)	OFF	ACC	ON
M90	11 (LG)		0V	Battery voltage	Battery voltage
WI90	38 (W/L)	Ground	0V	0V	Battery voltage
M91	42 (GY)	Ground	Battery voltage	Battery voltage	Battery voltage
	55 (R)		Battery voltage	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3.

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



3. CHECK GROUND CIRCUIT

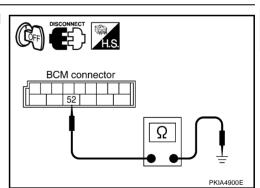
Check continuity between BCM harness connector terminal and ground.

	Terminals				
Connector	Terminal (Wire color)	Continuity			
M91	52 (B)	Ground	Yes		

OK or NG

OK >> INSPECTION END

NG >> Check ground circuit harness.



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CONSULT-II Functions (BCM)

AKS009S2

Refer to LT-18, "CONSULT-II Functions (BCM)" in XENON TYPE (FOR USA).

Refer to LT-49, "CONSULT-II Functions (BCM)" in CONVENTIONAL TYPE (FOR USA).

Refer to LT-83, "CONSULT-II Functions (BCM)" in XENON TYPE (FOR CANADA).

Refer to LT-120, "CONSULT-II Functions (BCM)" in CONVENTIONAL TYPE (FOR CANADA).

CONSULT-II Functions (IPDM E/R)

AKS00ADT

Refer to LT-20, "CONSULT-II Functions (IPDM E/R)" in XENON TYPE (FOR USA).

Refer to LT-51, "CONSULT-II Functions (IPDM E/R)" in CONVENTIONAL TYPE (FOR USA).

Refer to LT-85, "CONSULT-II Functions (IPDM E/R)" in XENON TYPE (FOR CANADA).

Refer to LT-122, "CONSULT-II Functions (IPDM E/R)" in CONVENTIONAL TYPE (FOR CANADA).

Parking, License Plate and Tail Lamps Do Not Illuminate

AKS00AP0

1. CHECK COMBINATION SWITCH INPUT SIGNAL

(P)With CONSULT-II

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

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

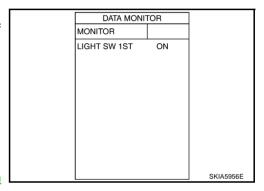
Without CONSULT-II

Refer to LT-170, "Combination Switch Inspection".

OK or NG

OK >> GO TO 2.

NG >> Check lighting switch. Refer to <u>LT-170, "Combination Switch Inspection"</u>.



2. ACTIVE TEST

(P)With CONSULT-II

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

Parking, license plate, side marker and tail lamp should operate.

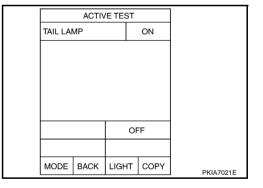
Without CONSULT-II

- Start auto active test. Refer to PG-24, "Auto Active Test".
- 2. Make sure parking, license plate, side marker and tail lamp operation.

Parking, license plate, side marker and tail lamp should operate.

OK or NG

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



3. CHECK IPDM E/R

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

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

OK or NG

OK >> Replace IPDM E/R.

NG >> Replace BCM. Refer to <u>BCS-17</u>, "Removal and Installation of BCM".

		DATA M	ONITOR	7	
	MONIT	OR			
	TAIL&C	LR REC	2 (NC	
-			BEC	ORD	
	MODE	BACK		COPY	
	IVIODE	DACK	гапт	COFT	SKIA5958E

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4. CHECK IPDM E/R

(P)With CONSULT-II

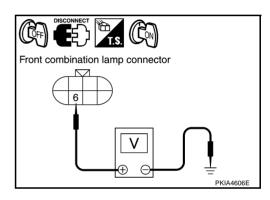
- Turn ignition switch OFF.
- 2. Disconnect front combination lamp, rear combination lamp and license plate lamp connectors.
- 3. Select "IPDM E/R" on CONSULT-II. and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
- 4. Select "TAIL LAMP" on "SELECT TEST ITEM" screen.
- 5. Touch "ON" screen.
- 6.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

With out CONSULT-II

- 1. Turn ignition switch OFF.
- 2. Disconnect front combination lamp, rear combination lamp and license plate lamp connector.
- 3. Start auto active test. Refer to PG-24, "Auto Active Test".
- 4. When tail lamp relay is operating, check voltage between front combination lamp, rear combination lamp and license plate lamp harness connector and ground.

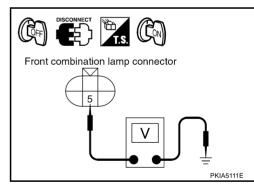
With xenon headlamp

	Terminals					
	Front comb (P	(-)	Voltage			
Conr	nector	Terminal (wire color)				
RH	E24	6 (R/L)	Ground	Battery voltage		
LH	E40	0 (R/L)	Giodila	Ballery Vollage		



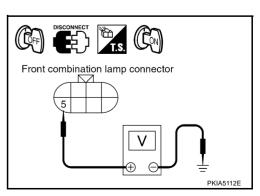
With halogen headlamp

	Terminals				
	Front comb (F	(-)	Voltage		
Conr	Connector Terminal (wire color)				
RH	E25	5 (R/L)	Ground	Battery voltage	
LH	E41	5 (R/L)	Giodila	Battery voltage	

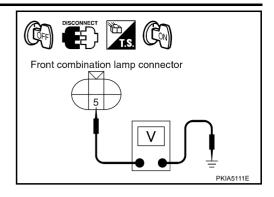


With xenon headlamp

	Terminals					
	Front comb (Sid	(-)	Voltage			
Conr	nector	Terminal (wire color)				
RH	E24	5 (R/L)	Ground	Battery voltage		
LH	E40	J (N/L)	Ground	ballery vollage		



With I	halogen he	adlamp			
	Terminals				
		oination lamp (+) e marker)	(-)	Voltage	
Conr	nector	Terminal (wire color)			
RH	E25	5 (R/L)	Ground	Battery voltage	
LH	E41	J (N/L)	Ground	Dattery Voltage	



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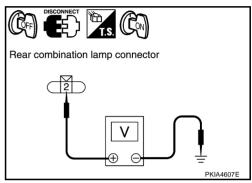
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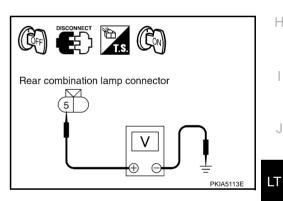
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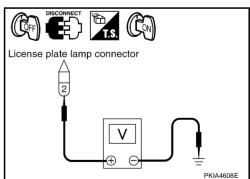
	Rear comb	(-)	Voltage		
Conr	Connector Terminal (wire color)				
RH	T17	2 (R/L)	Ground	Battery voltage	
LH	T9	Z (IVL)	Ground	battery voltage	



	Terminals					
	Rear comb (Sid	(-)	Voltage			
Con	nector	Terminal (wire color)				
RH	T16	5 (R/L)	Ground	Battery voltage		
LH	Т8	5 (R/L)	Giodila	Ballery vollage		



	Terminals					
	License plate lamp (+)					
Coni	Connector Terminal (wire color)		(-)			
RH	T104	2 (R)	Ground	Battery voltage		
LH	T102	Z (K)	Giouria	Ballery Vollage		



OK or NG

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

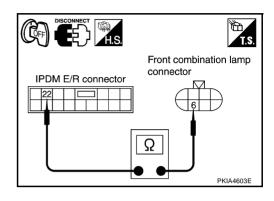
LT-199

5. CHECK BETWEEN IPDM E/R AND PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMPS

- 1. Turn ignition switch OFF.
- 2. Disconnect IPDM E/R connector.
- 3. Check harness continuity between IPDM E/R connector and front combination lamp, rear combination lamp and license plate lamp connectors.

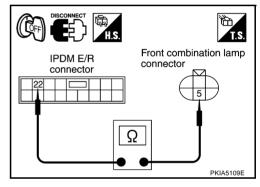
With xenon headlamp

IPD	M E/R	Front combination lamp (Parking)			· ·		Continuity
Connector	Terminal (wire color)	Connector		Terminal (wire color)			
E7	F7 00 (D/L)		E24	6 (R/L)	Yes		
	22 (R/L)	LH	E40	6 (R/L)	165		



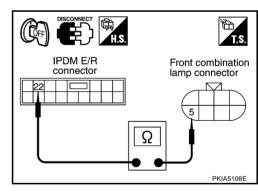
With halogen bulb headlamp

IPD	M E/R	Front combination lamp (Parking)			Continuity
Connector	Terminal (wire color)	Connector		Terminal (wire color)	
F7	22 (R/L)	RH	E25	5 (R/L)	Yes
	22 (IV/L)	LH	E41	5 (R/L)	163



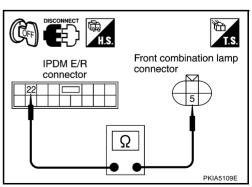
With xenon headlamp

Terminals					
IPD	PDM E/R Front combination (side marker)		•	Continuity	
Connector	Terminal (wire color)	Connector		Terminal (wire color)	
F7	22 (R/L)		E24	5 (R/L)	Yes
E7	22 (IV/L)	LH	E40	5 (R/L)	165

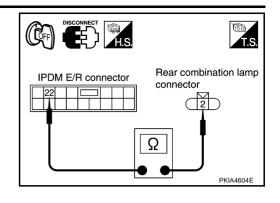


With halogen bulb headlamp

IPD	IPDM E/R Front combination lamp (side marker)		Continuity		
Connector	Terminal (wire color)	Connector		Terminal (wire color)	
E7	22 (R/L)	RH	E25	5 (R/L)	Yes
	22 (IV/L)	LH	E41	5 (R/L)	163



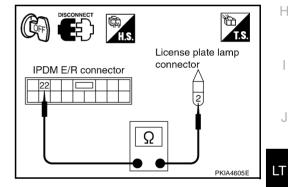
IPD	M E/R	Rear combination lamp (Tail)			Continuity
Connector	Terminal (wire color)	Connector		Terminal (wire color)	
F7	E7 22(R/L)		T17	2 (R/L)	Yes
E7	22(IVL)	LH	Т9	2 (R/L)	163



-					
IPD	M E/R	Rear combination lamp (side marker)			Continuity
Connector	Terminal (wire color)	Connector		Terminal (wire color)	
E7	7 22(R/L)		T16	5 (R/L)	Yes
	22(IV/L)	LH	Т8	5 (R/L)	165

DISCONNECT H.S.	T.S.
IPDM E/R connector	Rear combination lamp connector
	PKIA5110E

Terminals					
IPD	IPDM E/R Licence plat lamp				
Connector	Terminal (wire color)	Connector		Terminal (wire color)	Continuity
F7	22 (D/I)	RH	T104	2 (R)	Yes
⊏/	22 (R/L)	LH	T102	2 (R)	162



OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness or connector.

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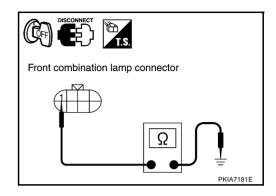
LT-201

6. CHECK GROUND

1. Check harness continuity between front combination lamp, rear combination lamp and license plate lamp connectors and ground.

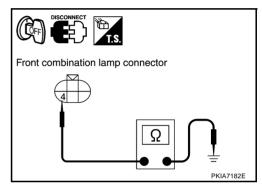
With xenon headlamp

	Front cor (Parking a		Continuity	
Conr	Connector Terminal (wire		Ground	
RH	E24	1 (B)		Yes
LH	E40	1 (D)		165

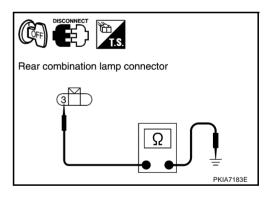


With halogen headlamp

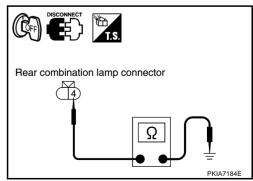
Terminals				
Front combination lamp (Parking and side marker)				Continuity
Connector		Terminal (wire color)	Ground	
RH	E25	4 (B)		Yes
LH	E41			163



Terminals				
Rear combination lamp (Tail)				Continuity
Connector		Terminal (wire color)	Ground	
RH	T17	3 (B)		Yes
LH	Т9			163



Terminals				
	Rear cor (Sid	Ground	Continuity	
Connector				Terminal (wire color)
RH	T16	4 (B)		Yes
LH	T8			165



		Terminals		
	License plate lamp			Continuity
Coni	nector	Terminal (wire color)	Ground	l
RH	T104	1 (B)	Giodila	Yes
LH	T102			165

License plate lamp connector Ω PKIA7185E

OK or NG

OK >> Check bulb.

NG >> Repair harness or connector.

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

1. CHECK IPDM E/R

- 1. Turn ignition switch ON. Place combination switch (lighting switch) in the ON position. Turn ignition switch OFF.
- 2. Make sure parking, license plate, and tail lamps turn OFF after approximately 10 minutes.

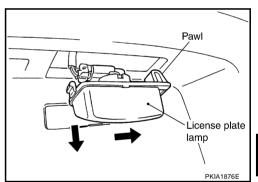
OK or NG

OK >> INSPECTION END.

NG >> Ignition relay malfunction. Refer to PG-19, "Function of Detecting Ignition Relay Malfunction" .

License Plate Lamp BULB REPLACEMENT, REMOVAL AND INSTALLATION

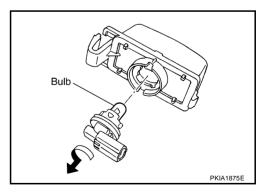
- 1. While pressing license plate lamp to right side, pull left side of it and remove.
- Disconnect license plate lamp connector.



- 3. Turn bulb socket counterclockwise and unlock it.
- 4. Remove bulb from it's socket.

License plate lamp : 12V - 5W

5. Install in the reverse order of removal.



Front Parking (Clearance) Lamp BULB REPLACEMENT

For bulb replacement, refer to LT-34, "Bulb Replacement" in "HEAD LAMP (FOR USA)".

REMOVAL AND INSTALLATION

For front parking (clearance) lamp removal and installation procedures, refer to <u>LT-36</u>, "Removal and Installation" in "HEAD LAMP (FOR USA)".

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Tail Lamp BULB REPLACEMENT

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For bulb replacement, refer to LT-205, "Bulb Replacement" in "REAR COMBINATION LAMP".

REMOVAL AND INSTALLATION

For tail lamp removal and installation procedures, refer to <u>LT-206, "Removal and Installation"</u> in "REAR COMBINATION LAMP".

REAR COMBINATION LAMP

REAR COMBINATION LAMP

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Bulb Replacement

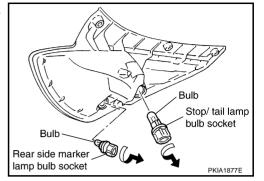
REAR FENDER SIDE (STOP & TAIL LAMP BULB, REAR SIDE MARKER LAMP BULB)

1. Remove rear combination lamp. Refer to <u>LT-206, "Removal and Installation"</u>

- 2. Turn bulb socket counterclockwise and unlock it.
- 3. Remove bulb.
- Install in the reverse order of removal.

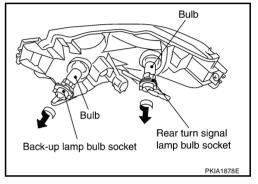
Stop/tail lamp (rear fender side) : 12V - 21/5W

Rear side marker lamp (rear fender side) : 12V - 5W



REAR BUMPER SIDE (BACK-UP LAMP BULB, REAR TURN SIGNAL LAMP BULB)

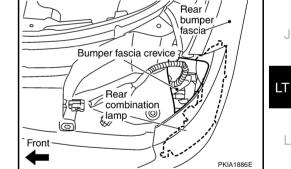
- 1. Remove rear combination lamp. Refer to <u>LT-206, "Removal and Installation"</u>
- 2. Turn bulb socket counterclockwise and unlock it through bumper fascia crevice.



- Remove bulb.
- Install in the reverse order of removal.

Rear turn signal lamp (rear bumper side) : 12V - 21W (umber bulb)

Back-up lamp (rear bumper side) : 12V - 21W



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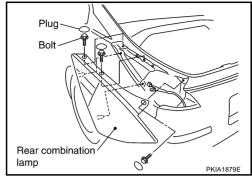
REAR COMBINATION LAMP

Removal and Installation REMOVAL

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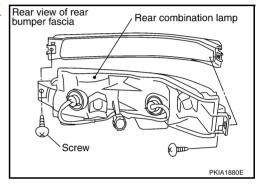
Rear Fender Side

- 1. Remove plugs and remove rear combination lamp mounting bolts.
- 2. Pull rear combination lamp toward side of the vehicle and remove from the vehicle.
- 3. Disconnect rear combination lamp connector.



Rear Bumper Side

- 1. Remove rear bumper fascia. Refer to <u>EI-17, "REAR BUMPER"</u> in "EI" section.
- 2. Disconnect rear combination lamp connector.
- 3. Remove rear combination lamp mounting screws.
- 4. Remove rear combination lamp from rear bumper fascia.



INSTALLATION

Install in the reverse order of removal. Be careful of the following:

Rear combination lamp mounting bolt: (Rear fender side)

: 5.2 N·m (0.53 kg-m, 45 in-lb)

Rear combination lamp mounting screw: (Rear bumper side)

: 3.1 N·m (0.32 kg-m, 27 in-lb)

VANITY MIRROR LAMP

VANITY MIRROR LAMP

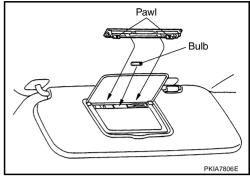
Bulb Replacement

1. Insert a thin screwdriver in the lens end and remove lens.

2. Remove bulb.

Vanity mirror lamp : 12V - 1.32W

3. Install in the reverse order of removal.



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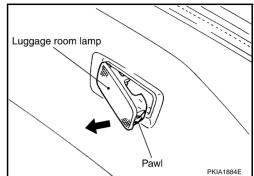
TRUNK ROOM LAMP

PFP:26470

Bulb Replacement, Removal and Installation of Luggage Room Lamp (Coupe Models)

1. Pull out luggage room lamp in direction shown by the arrow in the figure.

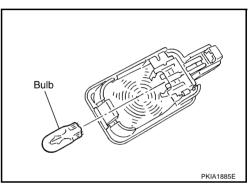
2. Disconnect luggage room lamp connector.



3. Remove bulb.

Luggage room lamp : 12V - 5W

4. Install in the reverse order of removal.

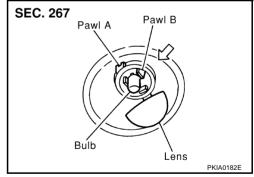


Bulb Replacement, Removal and Installation of Trunk Room Lamp (Roadster Models)

1. Unfold pawl A and remove lens.

- 2. Remove trunk room lamp while pressing pawl B in the direction of the arrow.
- 3. Disconnect trunk room lamp connector.

Trunk room lamp : 12V - 3.4W



REAR FLOOR BOX LAMP

REAR FLOOR BOX LAMP

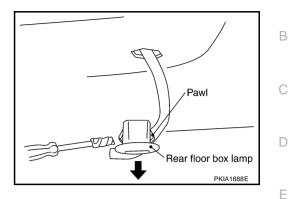
PFP:68520

AKS003MW

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Bulb Replacement, Removal and Installation

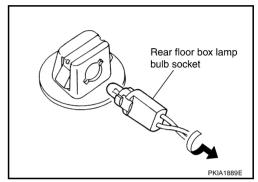
1. Pull out rear floor box lamp using screwdriver or similar tool.



2. Turn bulb socket counterclockwise to release lock and remove it.

Rear floor box lamp : 12V - 1.4W

3. Install in the reverse order of removal.



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ASHTRAY ILLUMINATION

ASHTRAY ILLUMINATION

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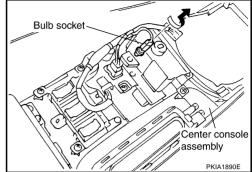
Bulb Replacement, Removal and Installation

AKS000VY

- 1. Remove center console assembly. Refer to <u>IP-10, "INSTRU-MENT PANEL ASSEMBLY"</u> in "IP" section.
- Turn bulb socket counterclockwise to undo lock and remove bulb socket.

Ashtray illumination : 12V - 1.4W

3. Install in the reverse order of removal.

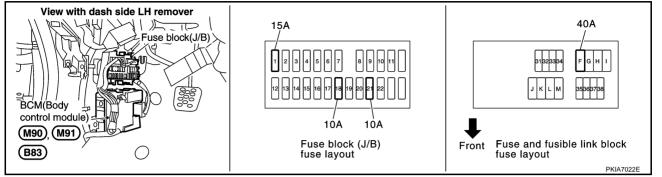


PFP:26410

Component Parts and Harness Connector Location

AKS00ADS

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System Description

S000W0

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When map lamp switch is in DOOR position, map lamp ON/OFF is controlled by timer according to signals from switches including key switch, door switch driver side and assist side, unlock and lock signal from key fob, door lock and unlock switch, key cylinder lock and unlock switch, ignition switch.

When map lamp turns ON, there is a gradual brightening over 1 second. When map lamp turns OFF, there is a gradual dimming over 1 second.

map lamp timer is controlled by BCM (body control module).

Map lamp timer control settings can be changed with CONSULT-II.

POWER SUPPLY AND GROUND

Power is supplied at all times

- through 10A fuse [No.21, located in fuse block (J/B)]
- to key switch terminal 2
- through 10A fuse [No.18, located in fuse block (J/B)]
- to BCM (body control module) terminal 42
- through 40A fusible link [letter F, located in fuse and fusible link block]
- to BCM (body control module) terminal 55.

When key is removed from ignition key cylinder, power is interrupted

- through key switch terminal 1
- to BCM (body control module) terminal 37.

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

- through 10A fuse [No.1, located in fuse block (J/B)]
- to BCM (body control module) terminal 38.

When room lamp and vanity mirror lamp power is supplied at times

- through BCM (body control module) terminal 41
- to map lamp terminal 3 (Coupe models)
- to map lamp terminal 2 (Roadster models)
- to luggage room lamp terminal 1 (Coupe models)
- to trunk room lamp terminal 1 (Roadster models)
- to vanity mirror lamp LH and RH terminal 1.

Ground is supplied

- to BCM (body control module) terminal 52
- through grounds M30 and M66.

When driver side door is opened, ground is supplied

- through case ground of driver side door switch
- to BCM (body control module) terminal 62.

When passenger side door is opened, ground is supplied

• through case ground of passenger side door switch

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to BCM (body control module) terminal 12.

When back door is opened, ground is supplied (Coupe models)

- through grounds B5, B6, D105 and T14
- to back door switch terminal 3
- from back door switch terminal 1
- to BCM (body control module) terminal 58.

When trunk hood is opened, ground is supplied (Roadster models)

- through grounds B5, B6 and T14
- to trunk room lamp switch terminal 2
- from trunk room lamp switch terminal 1
- to BCM (body control module) terminal 57.

When driver side door or passenger side door is unlocked by door lock and unlock switch, BCM (body control module) receives unlock signal with power window serial link

- through grounds M30 and M66
- to power window main switch (door lock and unlock switch) terminal 15 or power window sub switch (door lock and unlock switch) terminal 11
- from power window main switch (door lock and unlock switch) terminal 12 and power window sub switch (door lock and unlock switch) terminal 16
- to BCM (body control module) terminal 22.

When driver side door is unlocked by door key cylinder switch, BCM (body control module) receives information by communicating with power window main switch

- through grounds M30 and M66
- to door key cylinder switch terminal 2
- from door key cylinder switch terminal 1
- to power window main switch terminal 7
- from power window main switch (door lock and unlock switch) terminal 12
- to BCM (body control module) terminal 22.

When a signal, or combination of signals is received by BCM (body control module), ground is supplied

- through BCM (body control module) terminal 48
- to map lamp terminal 2 (Coupe models)
- to map lamp terminal 3 (Roadster models).

With power and ground are supplied, map lamp illuminates.

SWITCH OPERATION

When map lamp switch is ON, ground is supplied

- to map lamp terminal 1
- through grounds M30 and M66.

And power is supplied

- from BCM terminal 41
- to map lamp terminal 3 (Coupe models)
- to map lamp terminals 2 (Roadster models).

When vanity mirror lamp (LH and RH) is ON, ground is supplied

- to vanity mirror lamp terminal 2
- through grounds M30 and M66.

And power is supplied

- from BCM terminal 41
- to vanity mirror lamp terminal 1.

MAP LAMP TIMER OPERATION

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

In addition, when map lamp turns ON or OFF there is gradual brightening or dimming over 1 second. Power is supplied

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

When all doors are closed (all door switches OFF) and key is removed from key cylinder (key switch OFF), power will not be supplied to BCM terminal 37.

Ground is supplied

- from BCM terminal 22
- to power window main switch (door lock and unlock switch) terminal 12.

At this time, BCM detects that driver door is unlocked. It determines that map lamp timer operation conditions are met, and turns map lamp ON for 30 seconds.

When all doors are closed (all door switches OFF) and key is in key cylinder (key switch ON), Power is supplied

- through key switch terminal 1
- to BCM terminal 37.

When key is removed from key switch (key switch OFF), power supply to BCM terminal 37 is terminated. BCM detects that key has been removed. It determines that map lamp timer conditions are met, and turns map lamp ON for 30 seconds.

When driver door opens \rightarrow closes, and key is not inserted in key switch (key switch OFF), BCM terminal 62 changes between 0V (door open) \rightarrow 5V (door closed). BCM determines that conditions for spot lamp operation are met and turns interior lamp ON for 30 seconds.

Timer control is canceled under the following conditions.

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

INTERIOR LAMP BATTERY SAVER CONTROL

If room lamp remains illuminated by door switch open signal, or if room lamp switch is in ON position for more than 30 minutes after ignition switch is turned to OFF position, BCM will automatically turn off map lamp, step lamp, and/or personal lamp and vanity mirror lamp.

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

- signal from key fob, or door lock and unlock switch, or key cylinder is locked or unlocked.
- door is opened or closed,
- key is removed from ignition key cylinder or inserted in ignition key cylinder.

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

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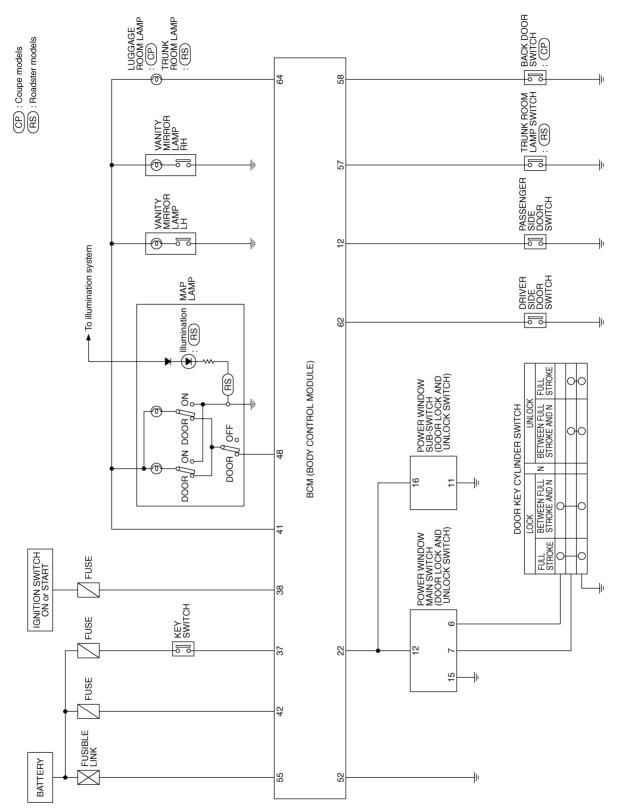
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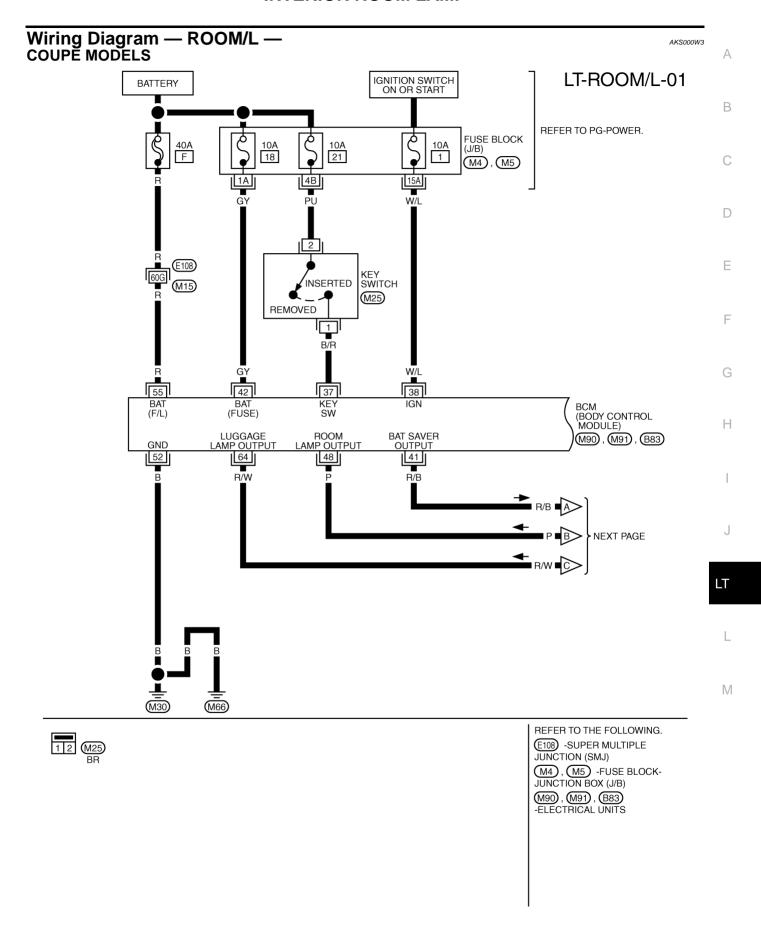
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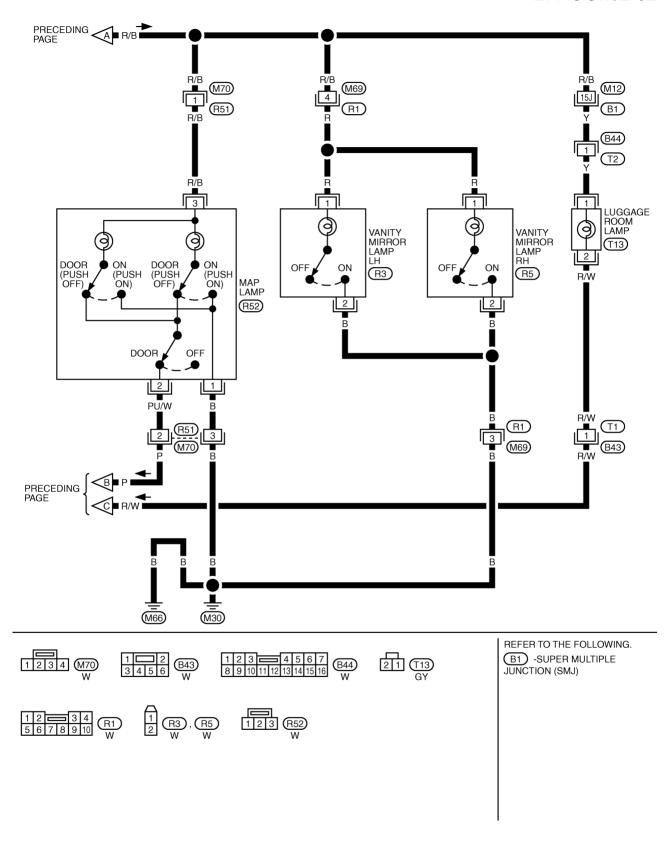
Schematic AKS000W2





TKWT1817E

LT-ROOM/L-02



TKWT1818E

LT-ROOM/L-03

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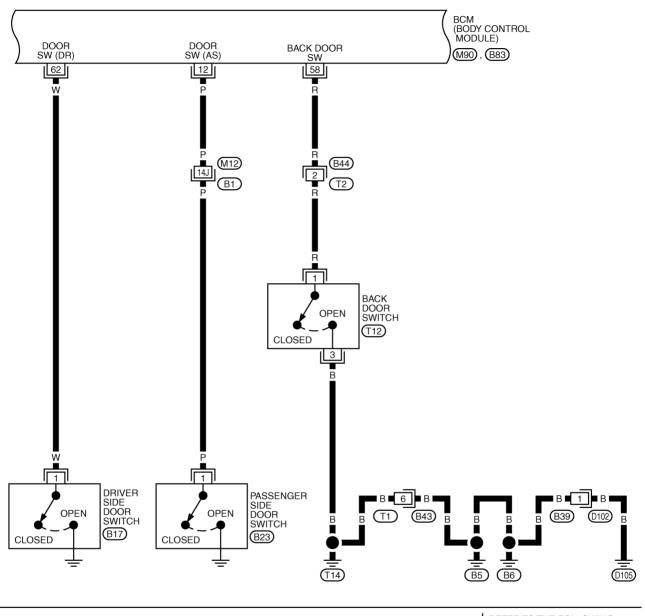
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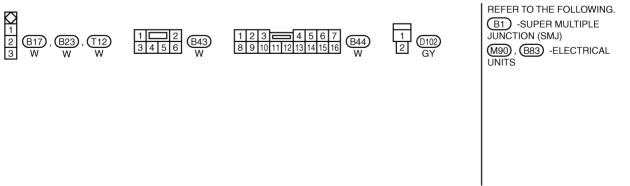
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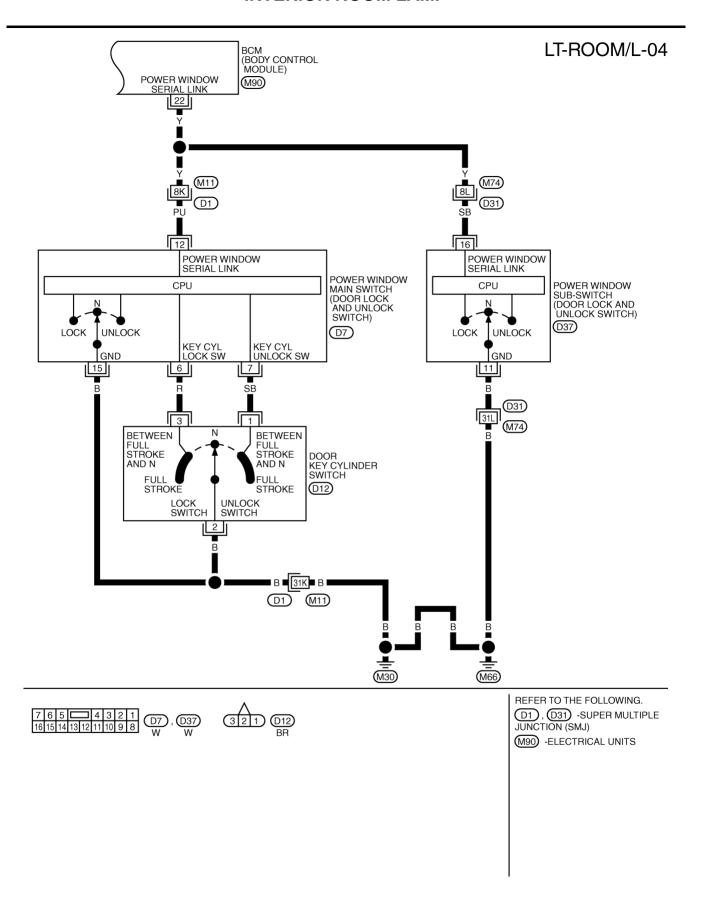
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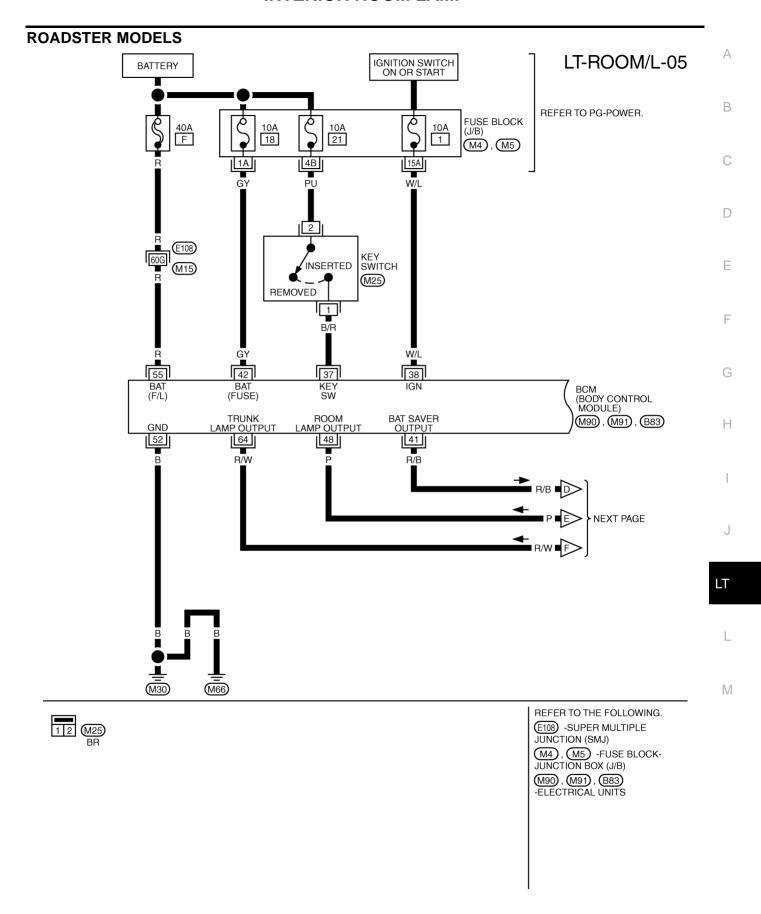




TKWT1819E

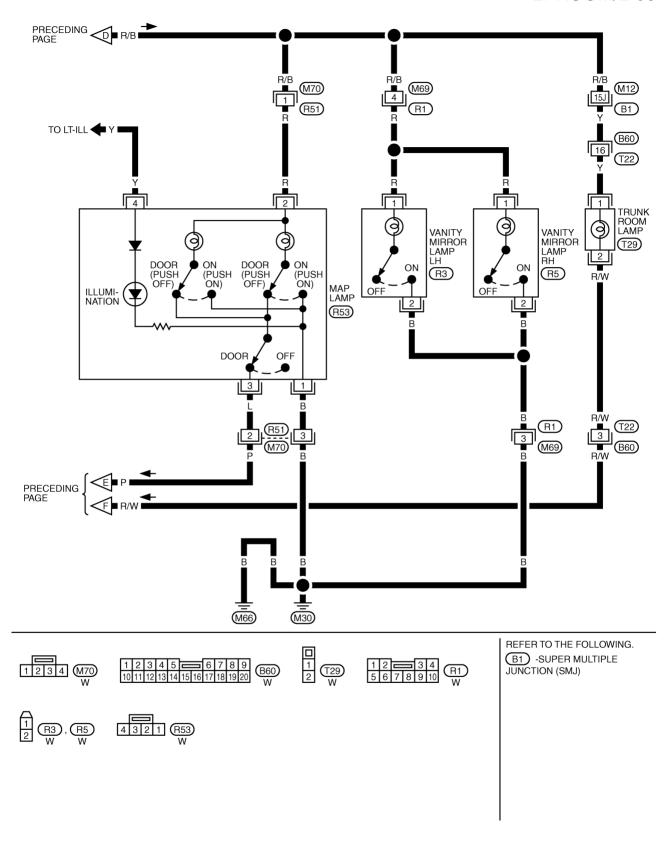


TKWT1820E



TKWT1821E

LT-ROOM/L-06



TKWT1822E

LT-ROOM/L-07

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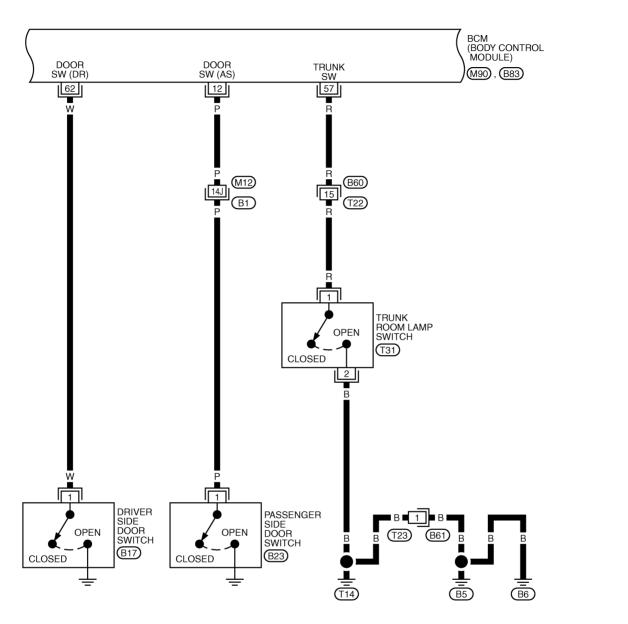
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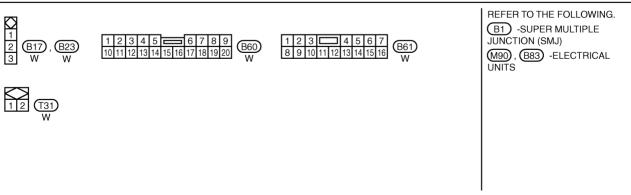
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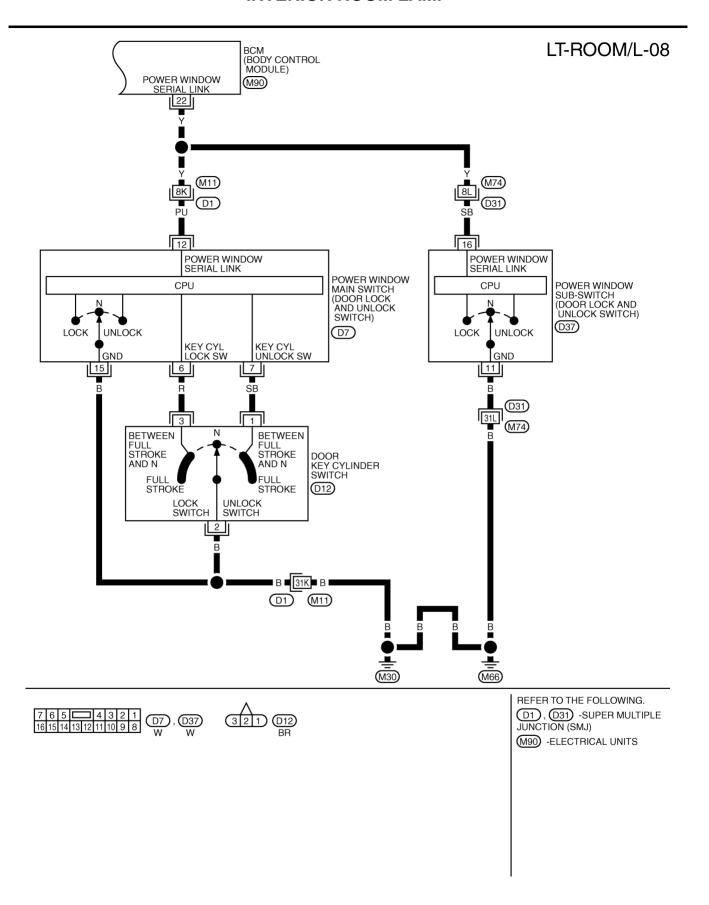
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TKWT1823E



TKWT1824E

Iermi	nais	and Reference Valu	es tor	BCM			AKS00APE	
T	146			Measuring cond	dition			
Terminal No.	Wire color	Signal name	Ignition switch	Operation or condition			Reference value	
12	Р	Front door switch AS signal	OFF	Front door switch ON (open)		Front door switch ON (open)		Approx. 0V
12	Г	FIGHT GOOD SWITCH AS SIGNAL	OFF	AS	OFF (c	osed)	Battery voltage	
22	Y	Power window switch serial link	ON	_		(V) 15 10 5 0 20ms		
37	B/R	Key-in detection switch signal	OFF	Vehicle key is remo	oved.		Approx. 0V	
31	D/IX	Ney-in detection switch signal	OH	Vehicle key is inserted.			Battery voltage	
38	W/L	Ignition power supply	ON	_	_		Battery voltage	
41	R/B	Battery saver output signal	OFF	30 minutes after ignition switch is turned to OFF.			Approx. 0V	
			ON	_			Battery voltage	
42	GY	Battery power supply	OFF	_	_		Battery voltage	
48	Р	Interior room lamp, map lamp	Interior room lamp, map lamp and front door inside handle	OFF	Interior door switch:	Any	ON (open)	Approx. 0V
40	•	illumination output signal	011	DOOR position	switch	OFF (closed)	Battery voltage	
52	В	Ground	ON	_	_		Approx. 0V	
55	R	Battery power supply	OFF	_	_		Battery voltage	
57* ¹	R	Trunk room lamp switch signal	OFF	Trunk room lamp	ON (op	en)	Approx. 0V	
JI		Traint room lamp ownor signar	011	switch	OFF (c	osed)	Battery voltage	
58* ²	R	Back door switch signal	OFF	Luggage room ON (open)		en)	Approx. 0V	
50				lamp switch	OFF (closed)		Battery voltage	
62	w	Front door switch DR signal	OFF	Front door switch	ON (op		Approx. 0V	
- -	-			DR	OFF (closed)		Battery voltage	
		Trunk room lamp*1 or back		Trunk room	ON (open)		Approx. 0V	
64	R/W	door* ² switch signal	OFF	lamp* ¹ or back door* ² switch	OFF (c	osed)	Battery voltage	

^{*1:} Roadster models, *2: Coupe models

How to Proceed with Trouble Diagnosis

AKS000W5

- 1. Confirm the symptom or customer complaint.
- 2. Understand operation description and function description. Refer to LT-211, "System Description" .
- 3. Perform preliminary check. Refer to LT-224, "Preliminary Check".
- 4. Check symptom and repair or replace the cause of malfunction.
- 5. Does interior room lamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
- 6. INSPECTION END

Preliminary Check CHECK POWER SUPPLY AND GROUND CIRCUIT

AKS000W6

1. CHECK FUSES

Check for blown BCM fuses.

Unit	Power source	Fuse and fusible link No.
		F
BCM	Battery	18
BCIVI		21
	Ignition switch ON or START position	1

Refer to LT-215, "Wiring Diagram — ROOM/L —" .

OK or NG

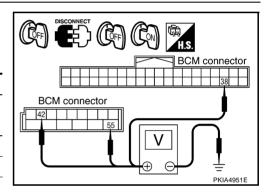
OK >> GO TO 2.

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

2. CHECK POWER SUPPLY CIRCUIT

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

	Terminals		Ignition switch position		
	(+)	(-)	OFF	ON	
Connector	Terminal (Wire color)	(-)	OH		
M91	42 (GY)		Battery voltage	Battery voltage	
IVIST	55 (R)	Ground	Battery voltage	Battery voltage	
M90	38 (W/L)		0V	Battery voltage	



OK or NG

OK >> GO TO 3.

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

3. CHECK GROUND CIRCUIT

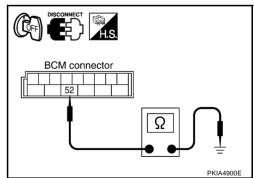
Check continuity between BCM and ground.

	Terminals				
Connector	Terminal (Wire color)	Continuity			
M91	52 (B)	Ground	Yes		

OK or NG

OK >> INSPECTION END

NG >> Check harness ground circuit.



CONSULT-II Functions

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CONSULT-II has a display function for work support, self-diagnosis, data monitor, and active test for each part by combining data receiving and sending via communication line from BCM.

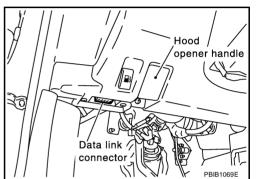
BCM diagnosis part	Check item, diagnosis mode	Description
_	WORK SUPPORT	Changes the setting for each function.
INTERIOR LAMP	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending driving signal to them.

CONSULT-II BASIC OPERATION

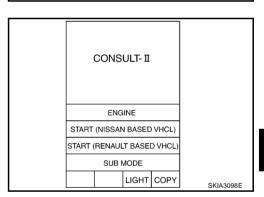
CAUTION:

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.

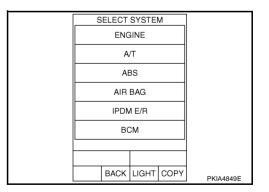
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



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



 Touch "BCM" on "SELECT SYSTEM" screen.
 If "BCM" is not indicated, refer to GI-39, "CONSULT-II Data Link Connector (DLC) Circuit".



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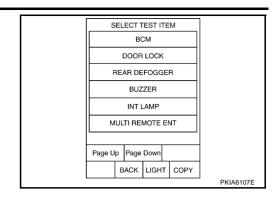
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4. Touch "INT LAMP" on "SELECT TEST ITEM" screen.



WORK SUPPORT

Operation Procedure

- 1. Touch "INT LAMP" on "SELECT TEST ITEM" screen.
- 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 glowing function interior room lamps and ignition keyhole illumination can be selected when driver door is released (unlocked).	ON/OFF
ROOM LAMP ON TIME SET	The time in order to escalate illumination can be adjusted when interior room lamps and ignition keyhole illumination is turned on.	MODE 1 – 7
ROOM LAMP OFF TIME SET	The time in order to diminish illumination can be adjusted when interior room lamps and 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 "DATA MONITOR" screen.

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

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

Display Item List

Monitor item		Contents			
IGN ON SW "ON/OFF"		Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from ignition switch signal.			
KEY ON SW	"ON/OFF"	Displays "Key inserted (ON)/key removed (OFF)" status judged from key switch signal.			

Monitor iter	n	Contents
DOOR SW - DR	"ON/OFF"	Displays status of driver door as judged from driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - AS	"ON/OFF"	Displays "Door open (ON)/Door closed (OFF)" status, determined from passenger door switch signal.
DOOR SW - RR ^{NOTE}	"OFF"	_
DOOR SW - RLNOTE	"OFF"	_
BACK DOOR SW	"ON/OFF"	 Displays status of back door as judged from back door switch signal. (Coupe models) Displays status of rear trunk hood as judged from trunk lamp switch signal. (Roadster models)
KEY CYL LK - SW	"ON/OFF"	Displays "Door locked (ON) status, determined from key cylinder lock switch in driver door.
KEY CYL UN - SW	"ON/OFF"	Displays "Door unlocked (OFF) status, determined from key cylinder lock switch in driver door.
CDL LOCK SW	"ON/OFF"	Displays "Door locked (ON)/Door unlocked (OFF) status, determined from locking detection switch in driver door.
CDL UNLOCK SW	"ON/OFF"	Displays "Door unlocked (OFF)" status, determined from locking detection switch in passenger door.
KEYLESS LOCK	"ON/OFF"	Displays "Locked (ON)/Other (OFF)" status, determined from lock signal.
KEYLESS UNLOCK	"ON/OFF"	Displays "Unlocked (ON)/Other (OFF)" status, determined from unlock signal.

NOTE

This item is displayed, but cannot monitor it.

ACTIVE TEST

Operation Procedure

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

Display Item List

Test item	Description				
INT LAMP	Map lamp can be operated by any ON-OFF operations.				
IGN ILLUM ^{NOTE}	_				
STEM LAMP TEST NOTE	_				
LUGGAGE LAMP TEST	Luggage room lamp can be operated by any ON-OFF operations. (Coupe models)				
LOGGAGE LAWIF 1E31	Trunk room lamp can be operated by any ON-OFF operations. (Roadster models)				

NOTE:

This item is displayed, but cannot monitor it.

Map Lamp Control Does Not Operate (Coupe models)

1. CHECK BETWEEN EACH SWITCH AND BCM

Select BCM on CONSULT-II. Use "INT LAMP" data monitor to make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-226, "Display Item List" for switches and their functions.

OK or NG

OK >> GO TO 2.

NG >> Inspect malfunctioning switch system.

	DATA M	ONITO	R			
MONITO	OR		N	O DTC		
DOOR :		•		ON ON		
		RE	EC	ORD		
MODE	BACK	LIGH.	Т	COPY	PKIA7024E	
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$\overline{2}$. CHECK BETWEEN BCM AND MAP LAMP

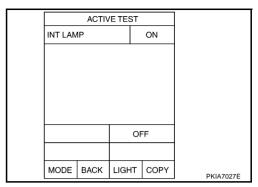
- 1. Select "BCM" on CONSULT-II. Select "INT LAMP" active test.
- 2. When map lamp switch is in DOOR position, use active test to make sure room lamp operates.

Map lamp should operate.

OK or NG

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

NG >> GO TO 3.



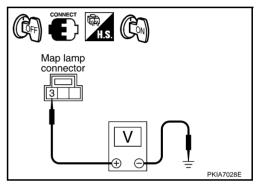
3. CHECK POWER SUPPLY CIRCUIT

- 1. Turn ignition switch ON.
- 2. Check voltage between map lamp harness connector R52 terminal 3 (R/B) and ground.

3 (R/B) - Ground : Battery voltage should exist.

OK or NG

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



4. CHECK MAP LAMP CIRCUIT

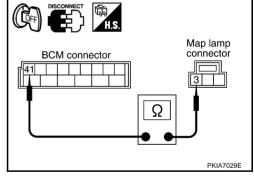
- 1. Disconnect BCM connector and map lamp connector.
- 2. Check continuity between BCM harness connector M91 terminal 41 (R/B) and map lamp harness connector R52 terminal 3 (R/B).

41 (R/B) – 3 (R/B) : Continuity should exist.

OK or NO

OK >> GO TO 5.

NG >> Repair harness or connector.



5. CHECK SHORT CIRCUIT

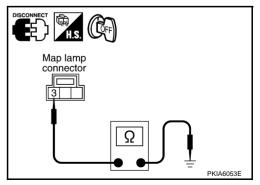
Check continuity between map lamp harness connector R52 terminal 3 (R/B) and ground.

3 (R/B) – Ground : Continuity should not exist.

OK or NG

OK >> Replace BCM if map lamp does not work after setting the connector again. Refer to BCS-17, "Removal and Installation of BCM".

NG >> After repairing harness, be sure to disconnect battery negative cable, and then reconnect it.



6. CHECK MAP LAMP

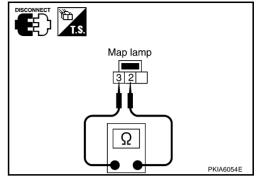
- 1. Disconnect map lamp connector.
- 2. Check continuity between map lamp.

Terminal		Condition	Continuity	
Map lamp		Condition		
2	2	Map lamp switch is DOOR.	Yes	
3		Map lamp switch is OFF.	No	

OK or NG

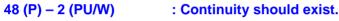
>> GO TO 7. OK

NG >> Replace map lamp



7. CHECK MAP LAMP CIRCUIT

- Disconnect BCM connector. 1.
- Check continuity between BCM harness connector M91 terminal 48 (P) and map lamp harness connector R52 terminal 2 (PU/W).

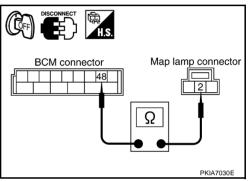


OK or NO

OK

>> Replace BCM if map lamp does not work after setting the connector again. Refer to BCS-17, "Removal and Installation of BCM"

NG >> Repair harness or connector.



Map Lamp Control Does Not Operate (Roadster models)

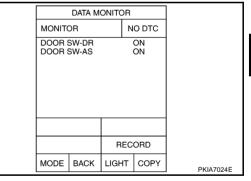
1. CHECK BETWEEN EACH SWITCH AND BCM

Select BCM on CONSULT-II. Use "INT LAMP" data monitor to check that switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-226, "Display Item List" for switches and their functions.

OK or NG

OK >> GO TO 2.

NG >> Inspect malfunctioning switch system.



2. CHECK BETWEEN BCM AND MAP LAMP

- Select "BCM" on CONSULT-II. Select "INT LAMP" active test.
- When map lamp switch is in DOOR position, use active test to 2. make sure map lamp operates.

Map lamp should operate.

OK or NG

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

NG >> GO TO 3.

	ACTIV	/E TEST	
INT LAM	IP		ON
		•	
OFF			
MODE	BACK	LIGHT	COPY

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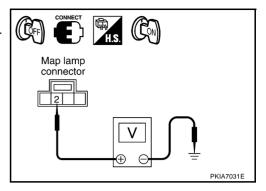
$\overline{3}$. CHECK BETWEEN BCM AND MAP LAMP

- 1. Turn ignition switch ON.
- 2. Check voltage between map lamp harness connector R53 terminal 2 (R) and ground.

2 (R) – Ground : Battery voltage should exist.

OK or NG

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



4. CHECK POWER SUPPLY CIRCUIT

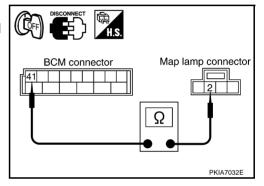
- 1. Disconnect BCM connector and map lamp connector.
- 2. Check continuity between BCM harness connector M91 terminal 41 (R/B) and map lamp harness connector R53 terminal 2 (R).

41 (R/B) – 2 (R) : Continuity should exist.

OK or NO

OK >> GO TO 5.

NG >> Repair harness or connector.



5. CHECK SHORT CIRCUIT

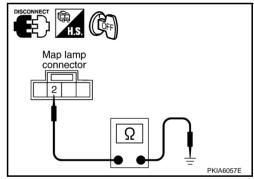
Check continuity between map lamp harness connector R53 terminal 2 (R) and ground.

2 (R) – Ground : Continuity should not exist.

OK or NG

OK >> Replace BCM if map lamp does not work after setting the connector again. Refer to BCS-17, "Removal and Installation of BCM".

NG >> After repairing harness, be sure to disconnect battery negative cable, and then reconnect it.



6. CHECK MAP LAMP

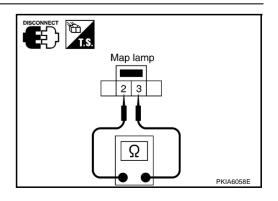
- 1. Disconnect map lamp connector.
- 2. Check continuity between map lamp.

Terminal		Condition	Continuity	
Map lamp		Condition		
2	3	Map lamp switch is DOOR.	Yes	
2		Map lamp switch is OFF.	No	

OK or NG

OK >> GO TO 7.

NG >> Replace map lamp



7. CHECK MAP LAMP CIRCUIT

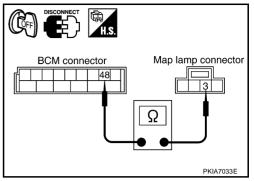
- Disconnect BCM connector.
- 2. Check continuity between BCM harness connector M91 terminal 48 (P) and map lamp harness connector R53 terminal 3 (L).

OK or NO

OK

>> Replace BCM if map lamp does not work after setting the connector again. Refer to <u>BCS-17</u>, "Removal and <u>Installation of BCM"</u>.

NG >> Repair harness or connector.



Luggage Room Lamp Does Not Illuminate (Coupe Models)

1. CHECK BULB

Inspect bulb of luggage room lamp.

OK or NG

OK >> GO TO 2.

NG >> Replace bulb of luggage room lamp.

2. CHECK BETWEEN BACK DOOR SWITCH AND BCM

Select BCM on CONSULT-II. Use "INT LAMP" data monitor to make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-226, "Display Item List" for switches and their functions.

OK or NG

OK >> GO TO 3.

NG >> Inspect malfunctioning switch system.

			_			_
DATA MONITOR				ĺ		
MONITOR			N	O DTC		ĺ
BACK D	K DOOR SW		(ON		
						I
						I
						I
R		RE	EC	ORD		Ì
MODE	BACK	LIGH	т	COPY	PKIA7035E	
			_		 	4

3. CHECK BETWEEN BCM AND LUGGAGE ROOM LAMP

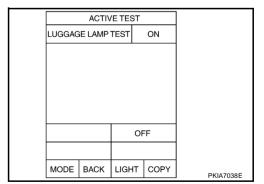
- Select "BCM" on CONSULT-II. Select "LAGGUAGE LAMP TEST" active test.
- 2. Make sure luggage room lamp operates.

Luggage room lamp should operate.

OK or NG

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

NG >> GO TO 4.



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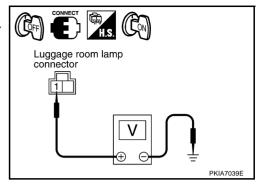
4. CHECK POWER SUPPLY CIRCUIT

- 1. Turn ignition switch ON.
- 2. Check voltage between luggage room lamp harness connector T13 terminal 1 (Y) and ground.

1 (Y) – Ground : Battery voltage should exist.

OK or NG

OK >> GO TO 7. NG >> GO TO 5.



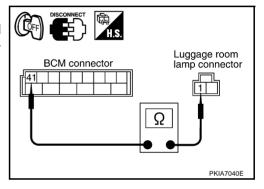
5. CHECK LUGGAGE ROOM LAMP CIRCUIT

- 1. Disconnect BCM connector and luggage room lamp connector.
- Check continuity between BCM harness connector M91 terminal 41 (R/B) and luggage room lamp harness connector T13 terminal 1 (Y).

OK or NO

OK >> GO TO 6.

NG >> Repair harness or connector.



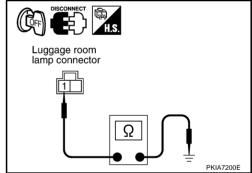
6. CHECK SHORT CIRCUIT

Check continuity between luggage room lamp harness connector T13 terminal 1 (Y) and ground.

OK or NG

OK >> Replace BCM if luggage room lamp does not work after setting the connector again. Refer to <u>BCS-17</u>, "Removal and Installation of BCM".

NG >> After repairing harness, be sure to disconnect battery negative cable, and then reconnect it.



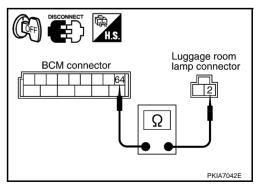
7. CHECK LUGGAGE ROOM LAMP CIRCUIT

- Disconnect BCM connector.
- 2. Check continuity between BCM harness connector B83 terminal 64 (R/W) and luggage room lamp harness connector T13 terminal 2 (R/W).

OK or NO

OK >> Replace BCM if luggage room lamp does not work after setting the connector again. Refer to <u>BCS-17</u>, "Removal and Installation of BCM".

NG >> Repair harness or connector.



Trunk Room Lamp Does Not Illuminate (Roadster Models)

1. CHECK BULB

Inspect bulb of trunk room lamp.

OK or NG

OK >> GO TO 2.

NG >> Replace map lamp

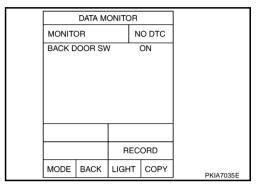
2. CHECK BETWEEN BACK DOOR SWITCH AND BCM

Select BCM on CONSULT-II. Use "INT LAMP" data monitor to check that switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-226, "Display Item List" for switches and their functions.

OK or NG

OK >> GO TO 3.

NG >> Inspect malfunctioning switch system.



3. CHECK BETWEEN BCM AND TRUNK ROOM LAMP

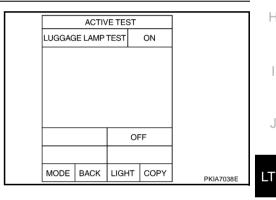
- Select "BCM" on CONSULT-II. Select "LUGGAGE LAMP TEST" active test.
- Make sure trunk room lamp operates.

Trunk room lamp should operate.

OK or NG

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

NG >> GO TO 4.



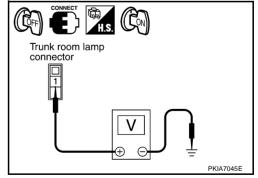
4. CHECK POWER SUPPLY CIRCUIT

- Turn ignition switch ON.
- Check voltage between trunk room lamp harness connector T29 terminal 1 (Y) and ground.

1 (Y) - Ground : Battery voltage should exist.

OK or NG

OK >> GO TO 7. NG >> GO TO 5.



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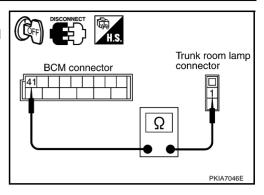
5. CHECK TRUNK ROOM LAMP CIRCUIT

- 1. Disconnect BCM connector and trunk room lamp connector.
- 2. Check continuity between BCM harness connector M91 terminal 41 (R/B) and trunk room lamp harness connector T29 terminal 1 (Y).

OK or NO

OK >> GO TO 6.

NG >> Repair harness or connector.



6. CHECK SHORT CIRCUIT

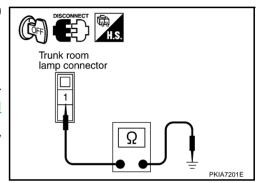
Check continuity between trunk room lamp harness connector T29 terminal 1 (Y) and ground.

OK or NG

OK >> Replace BCM if trunk room lamp does not work after setting the connector again. Refer to BCS-17, "Removal

and Installation of BCM".

NG >> After repairing harness, be sure to disconnect battery negative cable, and then reconnect it.



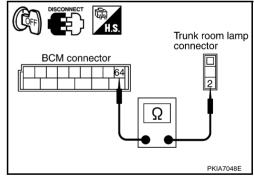
7. CHECK TRUNK ROOM LAMP CIRCUIT

- 1. Disconnect BCM connector.
- 2. Check continuity between BCM harness connector B83 terminal 64 (R/W) and trunk room lamp harness connector T29 terminal 2 (R/W).

OK or NO

OK >> Replace BCM if trunk room lamp does not work after setting the connector again. Refer to <u>BCS-17</u>, "Removal and Installation of BCM".

NG >> Repair harness or connector.



Bulb Replacement COUPE MODELS

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1. Open driver and passenger window, and then disconnect battery negative cable.

CAUTION:

After battery cables are disconnected, do not open/close driver and/or passenger door with the window in the full up position. Automatic window adjusting function will not work and side roof panel may be damaged.

- 2. Remove lens using clip driver or suitable tool.
- 3. Remove bulb.

Map lamp :12V - 8 W

4. Install in the reverse order of removal.

ROADSTER MODELS

1. Open driver and passenger window, and then disconnect battery negative cable.

CAUTION:

After battery cables are disconnected, do not open/close driver and/or passenger door with the window in the full up position. Automatic window adjusting function will not work and side roof panel may be damaged.

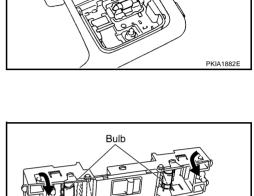
- 2. Remove lens using clip driver or suitable tool.
- 3. Remove bulb.

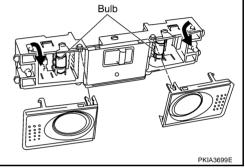
Map lamp :12V - 8 W

4. Install in the reverse order of removal.

Removal and Installation REMOVAL (COUPE MODELS)

- Insert a clip driver or suitable tool and disengage pawl fittings of map lamp.
- 2. Disconnect map lamp connector and remove map lamp.





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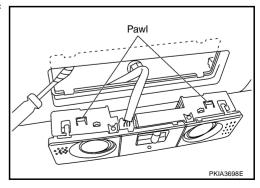
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REMOVAL (ROADSTER MODELS)

- 1. Insert a clip driver or suitable tool and disengage pawl fittings of map lamp.
- 2. Disconnect map lamp connector and remove map lamp.



INSTALLATION

Install in the reverse order of removal.



ILLUMINATION PFP:27545

System Description

AKS009QH

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

Power is supplied at all times

- through 10A fuse [No.71, located in IPDM E/R (intelligent power distribution module engine room)]
- to tail lamp relay [located in IPDM E/R (intelligent power distribution module engine room)]
- through 15A fuse [No.78, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)].

Power is also supplied at all times

- through 40A fusible link (letter F, located in fuse and fusible link block)
- to BCM (body control module) terminal 55
- through 10A fuse [No.18, located in fuse block (J/B)]
- to BCM (body control module) terminal 42
- through 10A fuse [No.19, located in fuse block (J/B)]
- to unified meter and A/C amp. terminal 21
- through 10A fuse [No.19, located in fuse block (J/B)]
- to combination meter terminal 24.

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

- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)]
- to BCM (body control module) terminal 38
- through 10A fuse [No.1, located in fuse block (J/B)]
- through 10A fuse [No.12, located in fuse block (J/B)]
- to unified meter and A/C amp. terminal 22.

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

- to BCM (body control module) terminal 11
- through 10A fuse [No.6, located in fuse block (J/B)].

Ground is supplied

- to BCM (body control module) terminal 52
- through grounds M30 and M66
- to IPDM E/R (intelligent power distribution module engine room) terminals 38 and 60
- through grounds E17, E43 and F152
- to unified meter and A/C amp. terminals 29 and 30
- through grounds M30 and M66.

ILLUMINATION OPERATION BY LIGHTING SWITCH

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

- through terminal 22 of IPDM E/R
- to NAVI control unit terminal 9 (With navigation system),
- to NAVI switch terminal 2 (With navigation system),
- to VDC off switch (illumination) terminal 3 (with VDC),
- to TCS off switch (illumination) terminal 3 (with TCS),
- to A/T device A/T illumination terminal 3 (With A/T),
- to hazard switch (illumination) terminal 3.

- to map lamp (illumination) terminal 4 (Roadster models)
- to ashtray illumination terminal 1 (With ashtray),
- to heated seat switch (driver side) (illumination) terminal 5 (With heated seat),
- to heated seat switch (passenger side) (illumination) terminal 5 (With heated seat),
- to luggage floor box lamp terminal 1,
- to soft top switch (illumination) terminal 5 (Roadster model),
- to audio unit terminal 8.

Ground is supplied at all times

- to luggage floor box lamp terminal 2,
- through grounds D105, B5, B6, and T14 (Coupe model),
- through grounds B5, B6 and T14 (Roadster model),
- to ashtray illumination terminal 2 (With ashtray),
- to map lamp (illumination) terminal 1 (Roadster models),
- through grounds M30 and M66
- to soft top switch (illumination) terminal 6 (Roadster models),
- to hazard switch (illumination) terminal 4,
- to VDC off switch (illumination) terminal 4 (With VDC),
- to TCS off switch (illumination) terminal 4 (With TCS),
- to A/T device (A/T illumination) terminal 5 (With A/T),
- to NAVI switch terminal 3 (With navigation system),
- to audio unit terminal 7,
- to heated seat switch (driver side) (illumination) terminal 6 (With heated seat),
- to heated seat switch (passenger side) (illumination) terminal 6,
- through combination meter terminal 18,
- to combination meter terminals 10, 11 and 12,
- through grounds M30 and M66.

With power and ground supplied, illumination lamps illuminate.

EXTERIOR LAMP BATTERY SAVER CONTROL

When combination switch (lighting switch) is in the 1ST or 2ND position, and ignition switch is turned from ON or ACC to OFF, battery saver control function is activated.

Under this condition, illumination lamps remain illuminated for 5 minutes, then illumination lamps are turned off.

When lighting switch is turned from OFF to 1ST or 2ND position after illumination lamps are turned off by battery saver control, and illumination lamps illuminate again.

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

CAN Communication System Description

AKS009QI

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Unit

AKS009QJ

Refer to LAN-5, "CAN Communication Unit".

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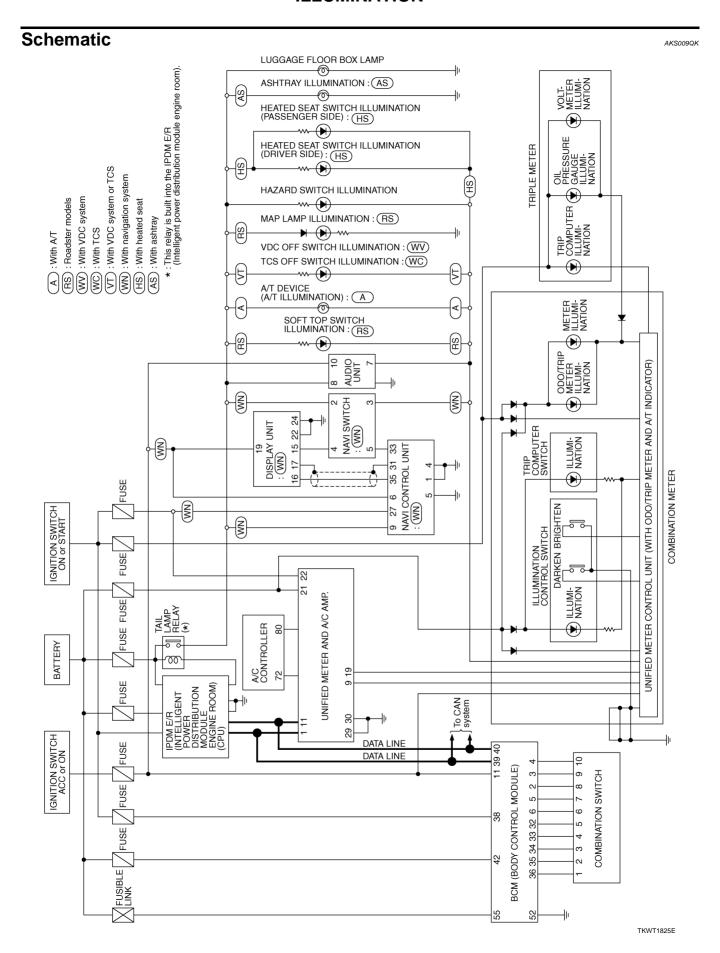
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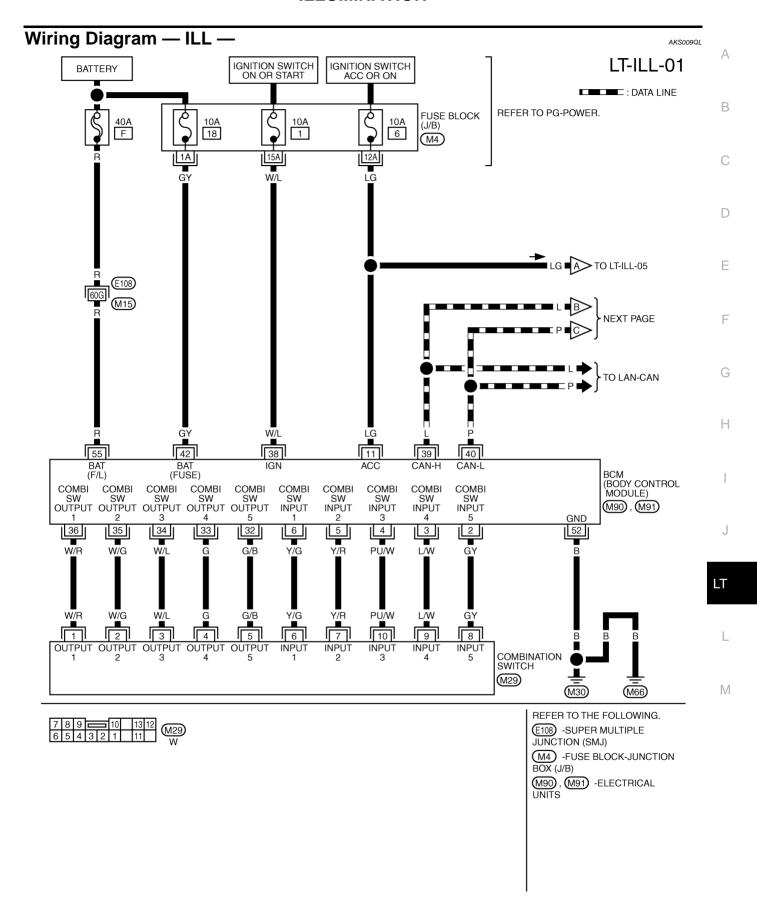
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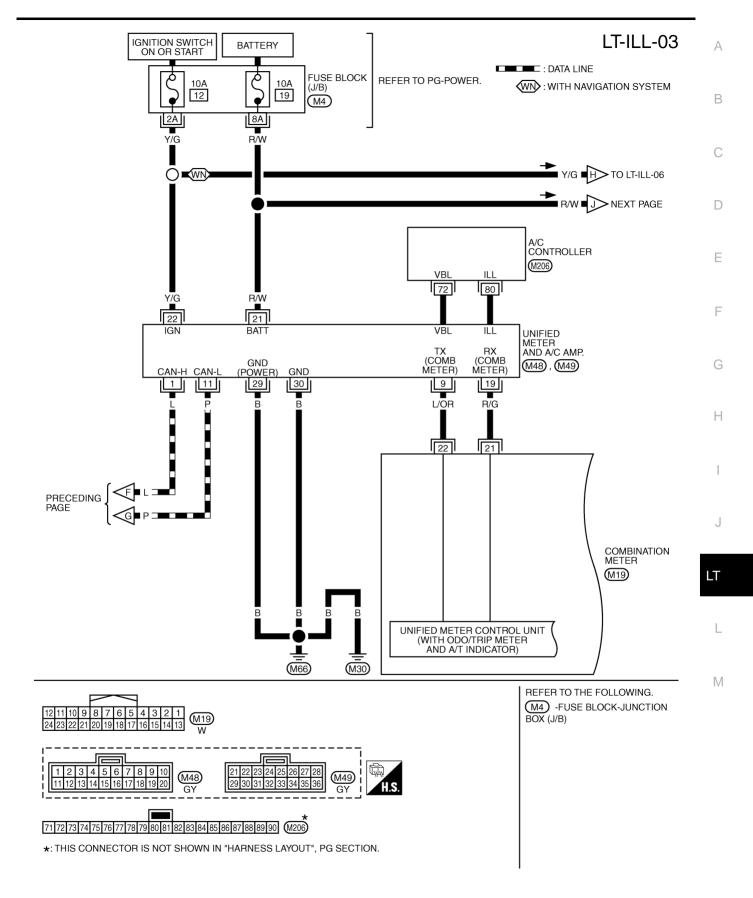


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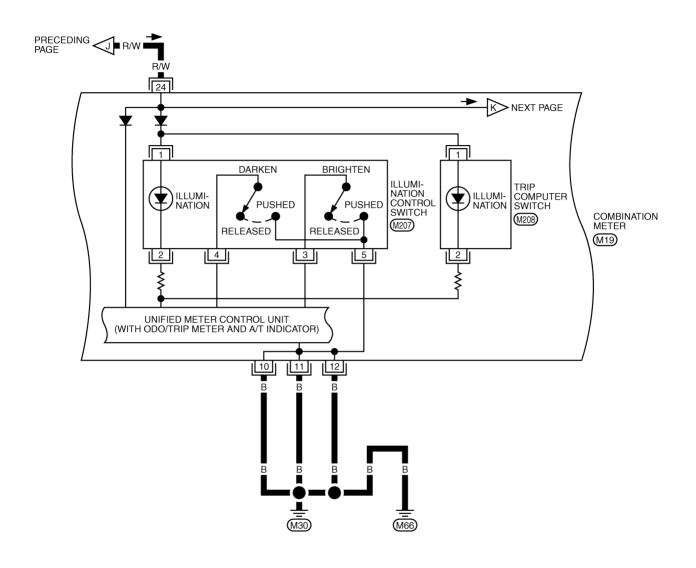
: DATA LINE IGNITION SWITCH ON OR START BATTERY 15A 78 10A 71 IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) REFER TO PG-POWER. TAIL LAMP RELAY 9 E7 , E8 , TAIL/L RLY +B +B +IG (E9) CPU GND GND (SIGNAL) (POWER) CAN-H CAN-L 49 60 48 38 22 R/L В P/L D TO LT-ILL-09 R/L 4G E12 ► R/L ■ E TO LT-ILL-06 (F151) ㅗ PRECEDING PAGE **NEXT PAGE** REFER TO THE FOLLOWING. © -SUPER MULTIPLE JUNCTION (SMJ) (E8)

TKWT1827E

LT-ILL-02



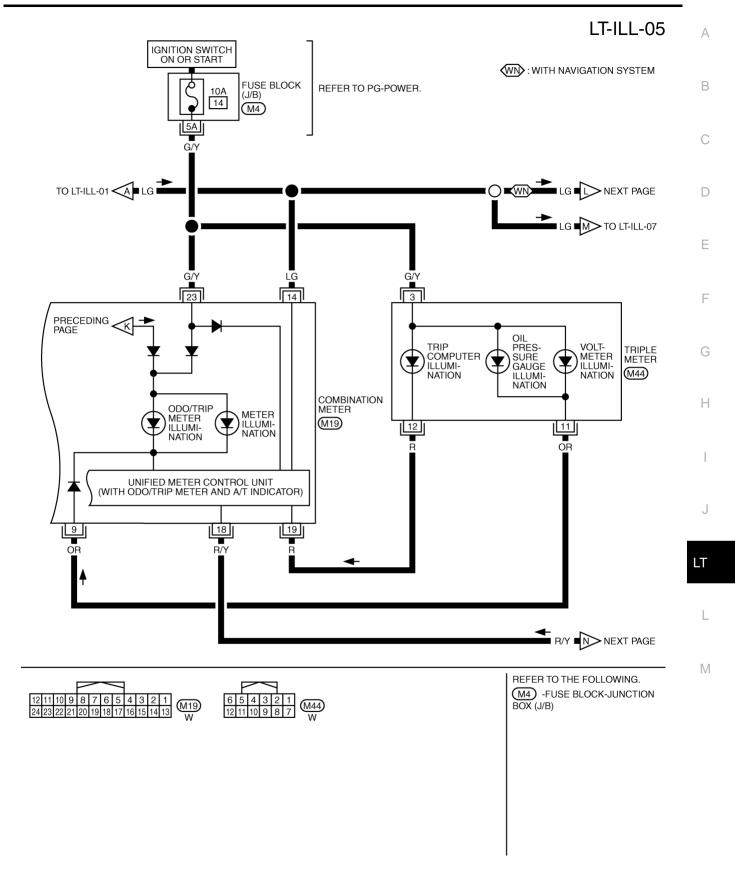
TKWT1828E



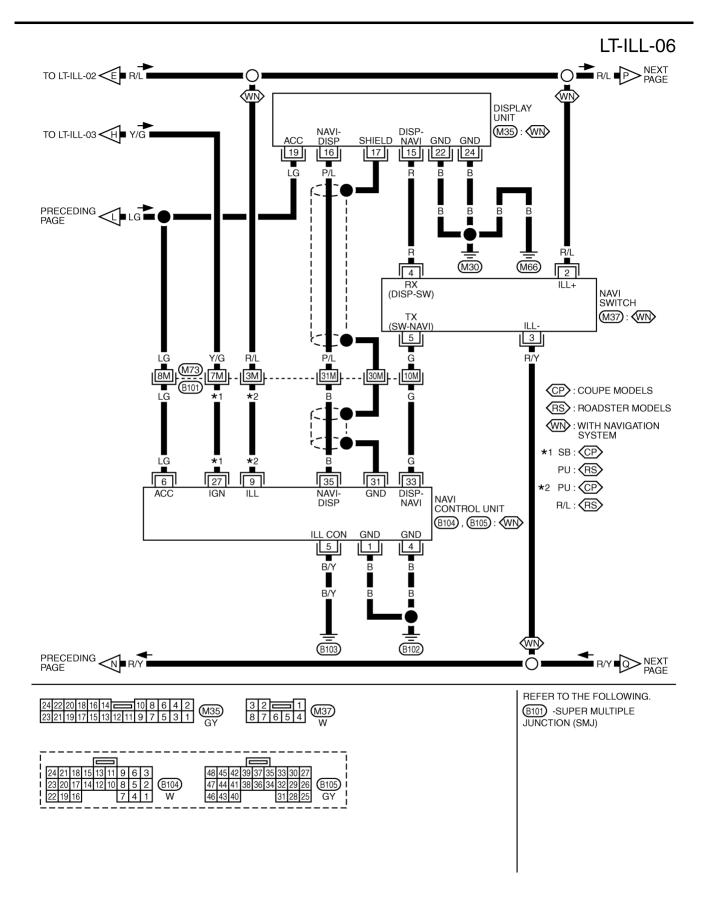


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

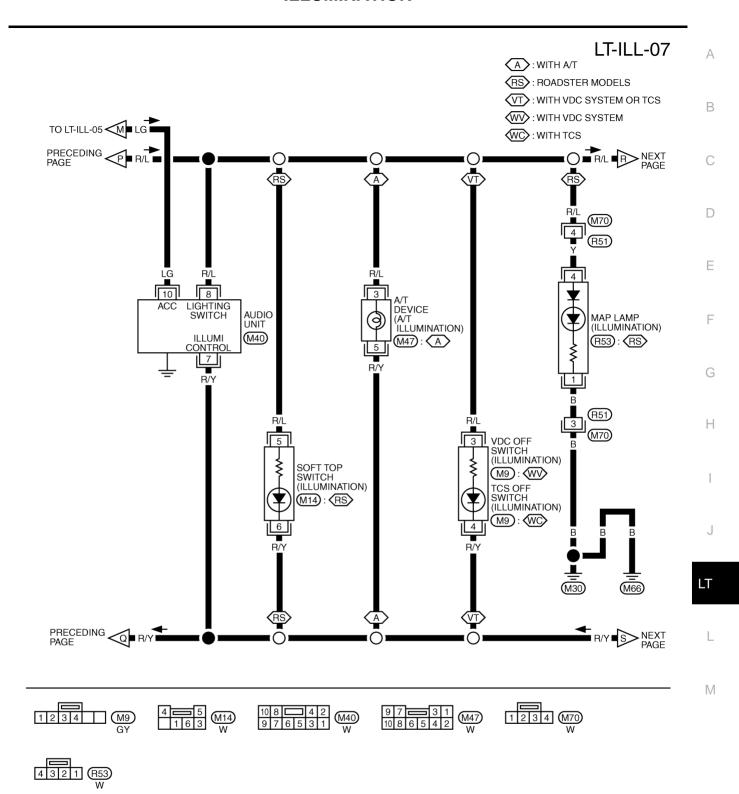
TKWT1829E



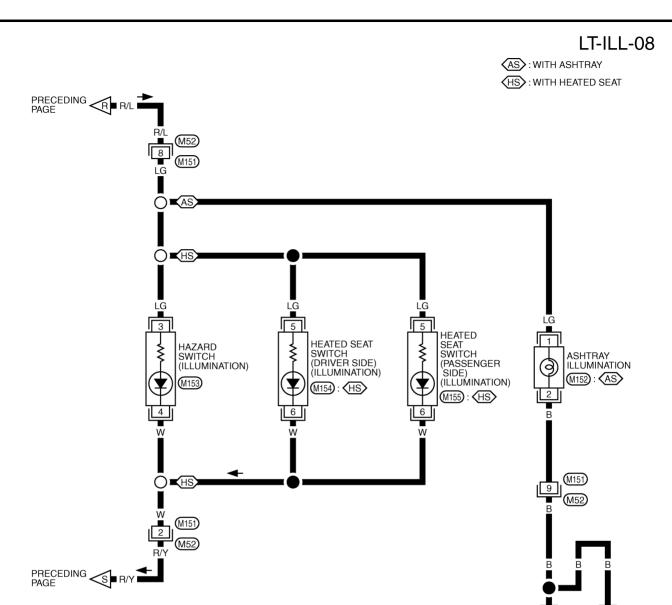
TKWT1830E



TKWT1831E



TKWT1832E

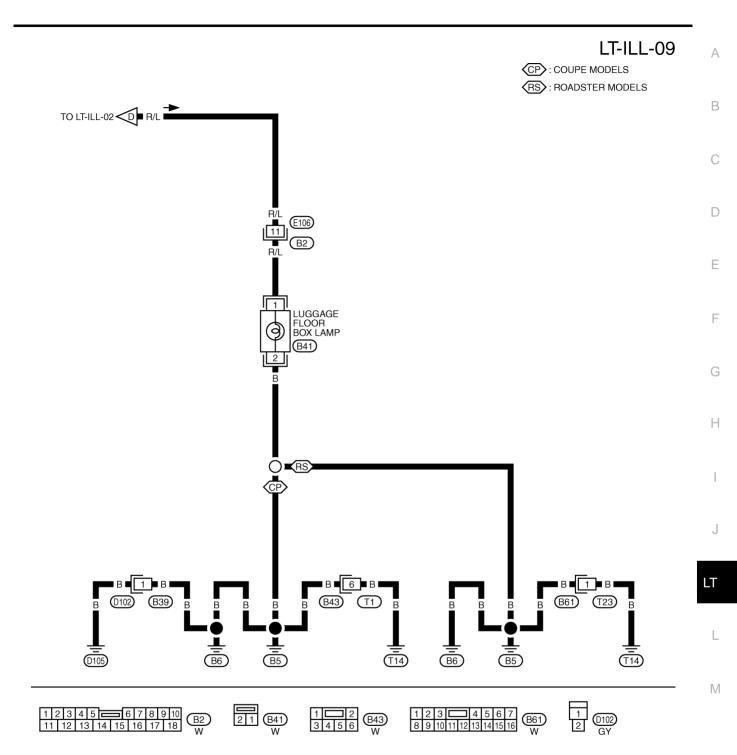




TKWT1833E

(M30)

(M66)



TKWT1834E

BULB SPECIFICATIONS

BULB SPECIFICATION	ONS	PFP:26297			
Headlamp		AKS000W			
	Item	Wattage (W)			
Low (Halogen type)		55 (H7)			
Low (Xenon type)		35 (D2R)			
High (Halogen type)		55 (H1)			
High (Xenon type)		55 (H7)			
Exterior Lamp		AKS000W			
	Item	Wattage (W)			
	Front Turn signal lamp	21 (amber)			
Front combination lamp	Parking lamp	5			
	Front side marker lamp	5			
	Stop/Tail lamp	21/5			
Door combination lamp	Rear Turn signal lamp	21			
Rear combination lamp	Back-up lamp	21			
	Rear side marker lamp	5			
License plate lamp		5			
High-mounted stop lamp (back d	oor mount)	LED			
Interior Lamp/Illumii	nation	AKS000W.			
		Wattage (W)			
Rear floor box lamp		1.4			
Ashtray illumination lamp		1.4			
Map lamp		8			
Luggage room lamp		5			
Trunk room lamp		3.4			
Vanity mirror lamp		1.32			