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PRECAUTIONS

PRECAUTIONS

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

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

WARNING:

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

Precautions for Battery Service

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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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 connect-• ing 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 eves.
- 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.

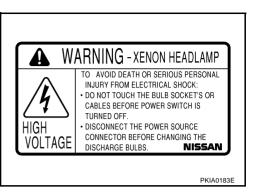
Wiring Diagrams and Trouble Diagnosis

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:

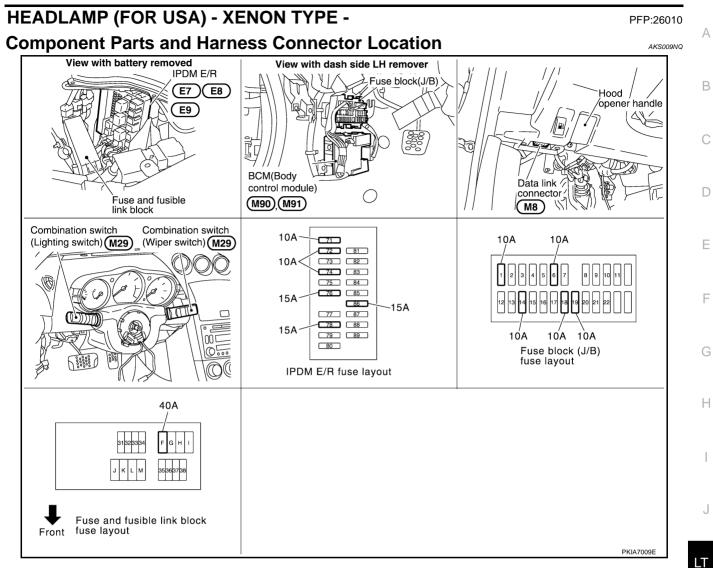
- Refer to GI-11, "HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSES" in GI section.
- Refer to GI-27, "How to Perform Efficient Diagnosis for an Electrical Incident" in GI section.





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System Description

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 engine tion 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)].

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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

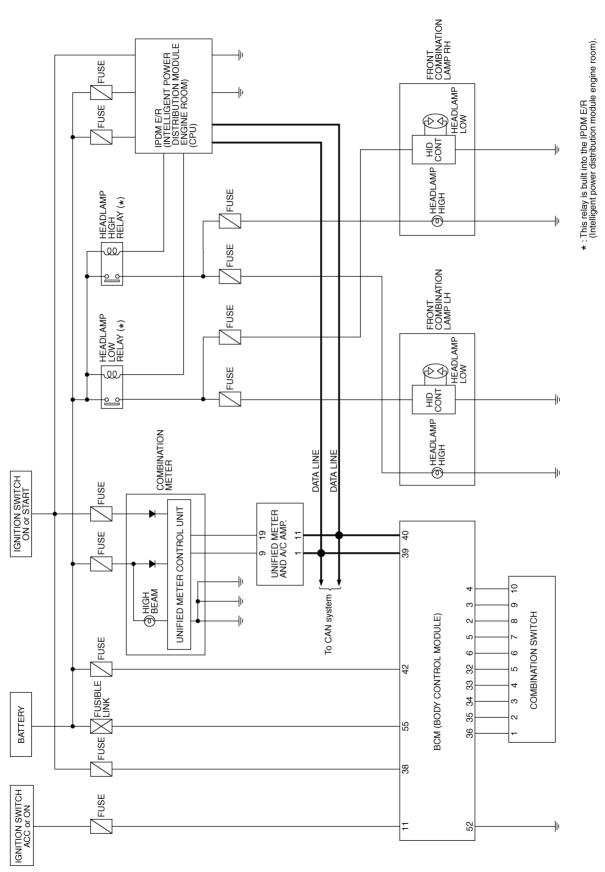
to front combination lamp LH terminal 4 through grounds E17,E43 and F152. With power and ground supplied, high beam headlamps illuminate. Unified meter and A/C amp. receives signal from BCM across CAN communication lines, and then combination meter indicator illuminates high beam. COMBINATION SWITCH 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 ramin 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 BL-129. "VEHICLE SECURITY. (THEFT WARNING) SYSTEM". 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 the new and 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 froatures 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 vehi- le, for added visibility. Power consumption is approximately 25 percent less than halogen headlamps, reducing battery load. 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 electront contro		
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	CAN Communication Unit	

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

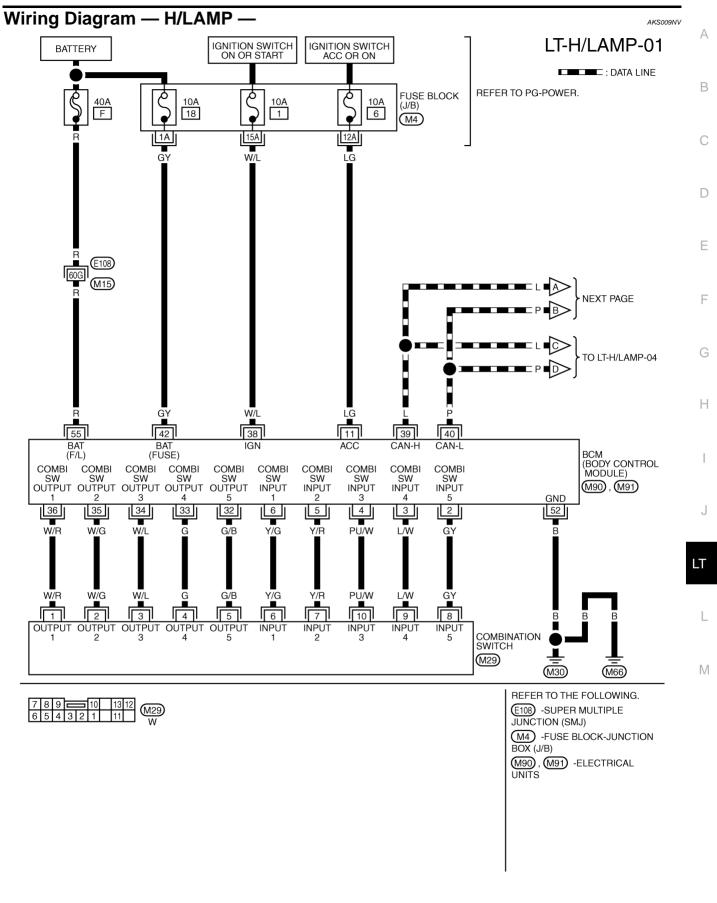
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Schematic

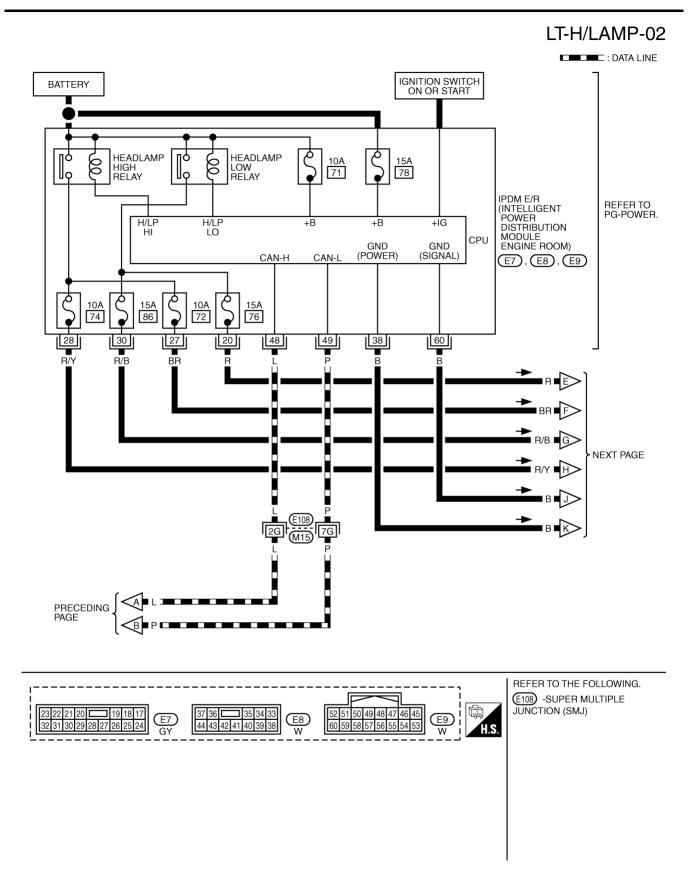




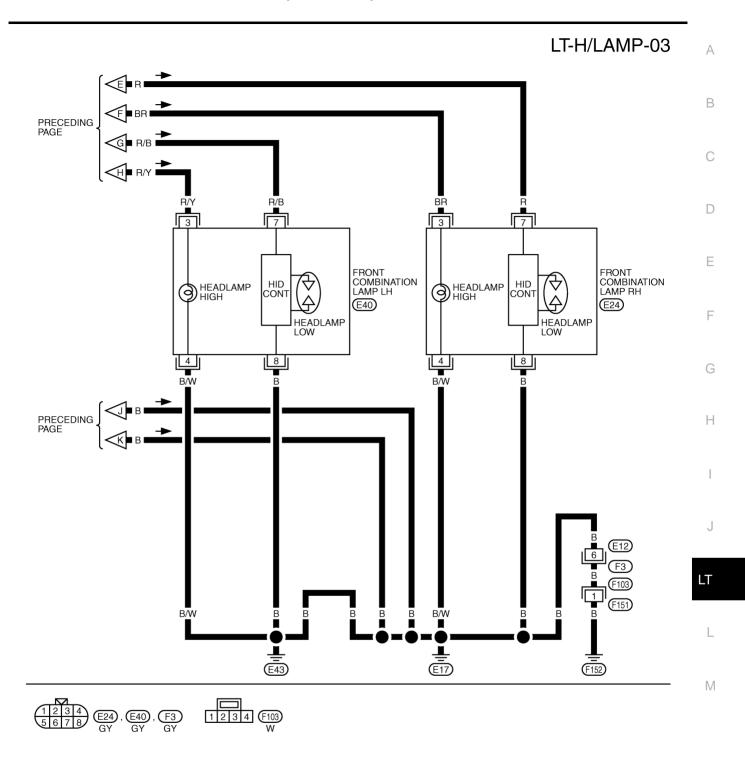
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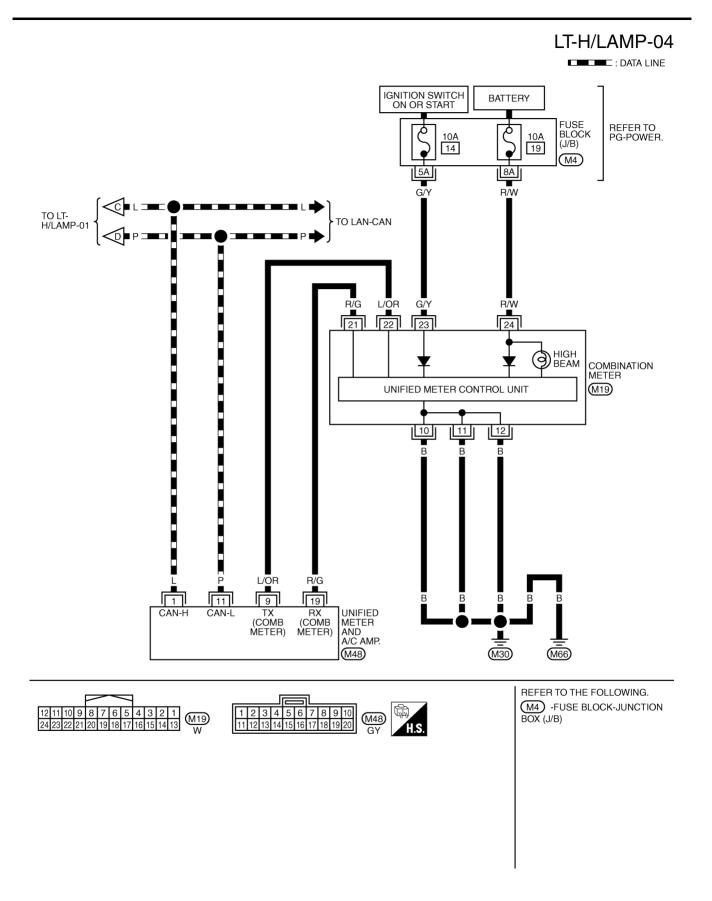
TKWT1767E



TKWT1768E



TKWT1769E



TKWT1728E

Terminals and Reference Values for BCM

				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 2 0 ++5ms SKIA5292E	
4	PU/W	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 2 0 + 5ms SKIA5291E	
5	Y/R	Combination switch input 2				
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	
32	G/B	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 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	

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Terminal	Wire color	Signal name		Measuring condition	
No.			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) 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

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

How to Proceed With Trouble Diagnosis

AKS009QN

AKS009QM

- 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

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	
		72	-
IPDM E/R	Potton/	74	
	Battery	76	
		86	
Combination meter	Battery	19	
	Ignition switch ON or START position	14	

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

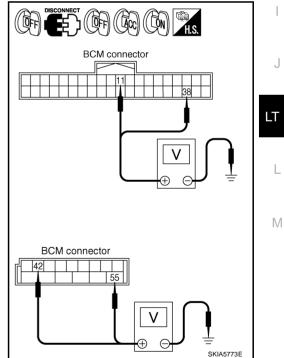
OK or NG

- 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.
- 3. Check voltage between BCM harness connector and ground.

Terminals			Ignition switch position		
(+)					
Connector	Terminal (Wire color)	(-)	OFF	ACC	ON
M90	11 (LG)	0V	Battery voltage	Battery voltage	
Mao	38 (W/L)	Ground	0V	0V	Battery voltage
M91	42 (GY)	Ground	Battery voltage	Battery voltage	Battery voltage
10191	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.

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3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.				
	Continuity			
Connector	Continuity			
M91	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
HEADLAMP DATA MONITOR		WORK SUPPORT	Changes the setting for each function.
		DATA MONITOR	Displays BCM input data in real time.
		ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
	BCM	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.

CONSULT-II BASIC OPERATION

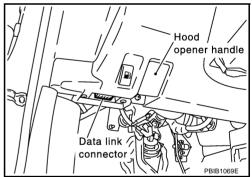
Touch "START (NISSAN BASED VHCL)".

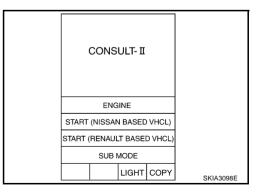
CAUTION:

2.

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.





BCM connector	
	PKIA4900E

AKS009NZ

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

SELECT SYSTEM	SELECT SYSTEM			
ENGINE		A		
A/T				
ABS				
AIR BAG		В		
IPDM E/R				
ВСМ				
		С		
BACK LIGHT COPY	PKIA4849E			
	1	D		
SELECT TEST ITEM				
HEAD LAMP				
WIPER		Е		
FLASHER				
AIR CONDITIONER				
COMB SW		F		
IMMU		1		
Page Up Page Down		~		
BACK LIGHT COPY		G		
	PKIA6100E			

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WORK SUPPORT

Operation Procedure

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

4. 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	
BATTERY SAVER	Exterior lamp battery saver control mode can be changed in this mode.	ON	×	L
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".

- 5. 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".

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 light- ing switch signal.
HEAD LAMP SW 2	"ON/OFF"	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from light- ing 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 - 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

- 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)

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

AKS009QF

Check Item, Diagnosis Mode	Description	Δ
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.	В
ACTIVE TEST	IPDM E/R sends a drive signal to electronic components to check their operation.	

CONSULT-II BASIC OPERATION

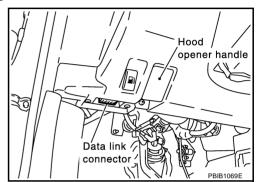
CAUTION:

3.

Circuit".

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.



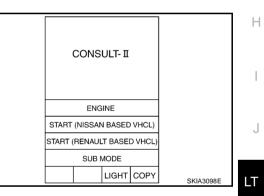
С

D

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F

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



- SELECT SYSTEM

 ENGINE

 A/T

 ABS

 AIR BAG

 IPDM E/R

 BCM

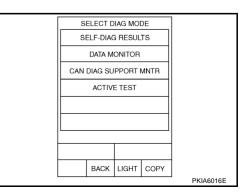
 BACK

 PKIA4849E
- 4. Select the desired part to be diagnosed on the "SELECT DIAG MODE" screen.

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)



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 or unit	Monitor item selection			
Item name	screen display		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" .

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. В DATA MONITOR make sure "HI BEAM SW" turns ON-OFF linked with operation of NO DTC MONITOR liahtina switch. HI BEAM SW ON 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. MODE BACK LIGHT COPY F NG >> Check lighting switch. Refer to LT-170, "Combination PKIA6324E Switch Inspection". 2. HEADLAMP ACTIVE TEST F

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" .
- 2. 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

	elect "IPDM E/R" on CONSULT-II, and select "DATA MONI- OR" on "SELECT DIAG MODE" screen.		ONITOR	
1	OR ON SELECT DIAG MODE SCIECH.	MONITOR		
	lake sure "HL LO REQ" and "HL HI REQ" turns ON when light- ig switch is in HI position.	HL LO REQ HL HI REQ	ON ON	
	When lighting switch is: HL LO REQ ONHIGH BEAM position: HL HI REQ ON			
OK or	NG			
OK	>> Replace IPDM E/R.		Page Down	
			RECORD	
NG	>> Replace BCM. Refer to <u>BCS-17</u> , "Removal and Installa- tion of BCM"	MODE BACK	LIGHT COPY	SKIA5775E

	ACTIV	ETEST			G
LAMPS			OFF		
					H
		F	11		
L	0	FC)G		
MODE	BACK	LIGHT	COPY	SKIA5774E	
				011/10/14L	0

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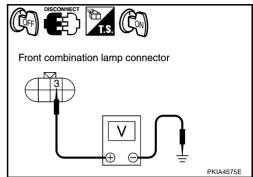
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4. CHECK HEADLAMP INPUT SIGNAL

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.
- 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).



li	Terminals				
	(+)			Voltage	
Conr	nector	Terminal (Wire color)	(-)		
RH	E24	3 (BR)	Ground	Battery voltage	
LH	E40	3 (R/Y)	Gibunu	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" .
- 4. 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)	Giouna	Ballery Vollage

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).

27 (BR) - 3 (BR)

: Continuity should exist.

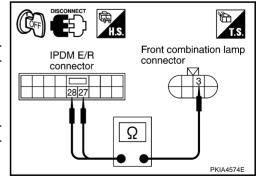
 Check continuity between IPDM E/R harness connector E7 terminal 28 (R/Y) and front combination lamp LH harness connector E40 terminal 3 (R/Y).

28 (R/Y) – 3 (R/Y)

: Continuity should exist.

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Repair harness or connector.



	HECK HEA	DLAMP GROUND			
		uity between front c 4 terminal 4 (B/W) a		n lamp RH harness	
	4 (B/W) –	Ground	: Continui	ity should exist.	Front combination lamp connector
		uity between front o 0 terminal 4 (B/W) a			
	4 (B/W) –	Ground	: Continui	ity should exist.	
OK or	NG				
OK NG		k headlamp bulb. ir harness or connec	tor		PKIA4907E
	•			minate (One Si	
	HECK BUL	-	Not mu		ие) акѕоолом
heck	halogen bi	Ib of lamp which doe	es not illum	inate	
DK or	0				
OK	>> GO T	-			
NG	•	ice headlamp bulb.			
2. CH	HECK HEA	DLAMP INPUT SIGI	NAL		
. Tu	urn ignition s	switch OFF.			
		ont combination lam	o RH or Ll	H connector.	
	urn ignition s				Front combination lamp connector
. Lig		h is turned HIGH BE	•	amp RH or LH har-	
		e between front con			
. Cł		e between front con or and ground.		-	
. Cł					
. Cł		or and ground.		Voltage	
. Cł ne		or and ground. Terminals	(-)	Voltage	
Ch Ch Ch RH	connector E24	Terminals (+) Terminal (Wire color) 3 (BR)			
Carrier Cranter Carrier Cranter Crante	connector E24 E40	Terminals (+) Terminal (Wire color)	(-)	Voltage Battery voltage	V ⊕ PKIA4575E
5. Cr ne Cr RH LH DK or	connector E24 E40 NG	or and ground. Terminals (+) Terminal (Wire color) 3 (BR) 3 (R/Y)	(-)		
Carrier Cranter Cr	connector E24 E40	or and ground. Terminals (+) Terminal (Wire color) 3 (BR) 3 (R/Y) O 4.	(-)		

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.

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.

2. 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 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)

1. CHECK COMBINATION SWITCH INPUT SIGNAL

(B)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.

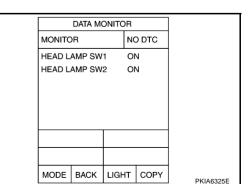
When lighting switch is 2ND: HEAD LAMP SW 1 ONposition: HEAD LAMP SW 2 ON

Without CONSULT-II

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

OK or NG

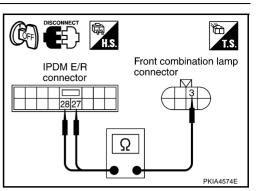
- OK >> GO TO 2.
- NG >> Check lighting switch. Refer to <u>LT-170, "Combination</u> <u>Switch Inspection"</u>.



Front combination lamp connector	
	Ē
	PKIA4907E

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2. HEADLAMP ACTIVE TEST

(B) 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

With CONSULT-II

- 1. 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

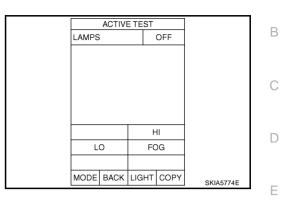
- 1. Start auto active test. Refer to PG-24, "Auto Active Test" .
- 2. Make sure headlamp low beam operation.

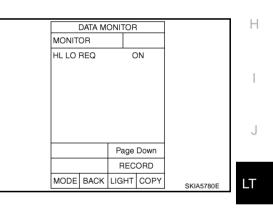
When lighting switch is 2ND : HL LO REQ ON position

OK or NG

OK >> Replace IPDM E/R.

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





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4. CHECK HEADLAMP INPUT SIGNAL

(B)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.
- 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.

Front combination lamp connector
PKIA7010E

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

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.

		(+)	(-)	Voltage
Conr	onnector Terminal (Wire color)			
RH	E24	7 (R)	Ground	Battery voltage
LH	LH E40 7 (R/B)		Gibulia	Dattery 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.
- 3. 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.

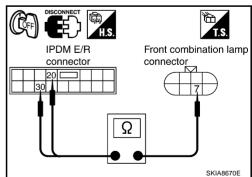
 Check continuity between IPDM E/R harness connector E7 terminal 30 (R/B) and front combination lamp LH harness connector E40 terminal 7 (R/B).

30 (R/B) – 7 (R/B)

: Continuity should exist.

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Repair harness or connector.



6. CHECK HEADLAMP GROUND А 1. Turn ignition switch OFF. 2. Check continuity between front combination lamp RH harness В connector E24 terminal 8 (B) and ground. 8 (B) – Ground : Continuity should exist. Front combination lamp connector 3. Check continuity between front combination lamp LH harness connector E40 terminal 8 (B) and ground. : Continuity should exist. 8 (B) – Ground Ω D OK or NG PKIA4585E OK >> Check headlamp harness and connectors, ballasts (HID control unit), and xenon bulbs. Refer to LT-32, "Xenon Headlamp Trouble Diagnosis" . F NG >> Repair harness or connector. Headlamp Low Beam Does Not Illuminate (One Side) AKS00AOP 1. CHECK BULB F Check ballasts (HID control unit) and xenon bulb of lamp which does not illuminate. Refer to LT-32, "Xenon Headlamp Trouble Diagnosis". G OK or NG OK >> GO TO 2. NG >> Repair malfunctioning part. Н

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2. CHECK HEADLAMP INPUT SIGNAL

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.
- 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.

Front combination lamp connector
PKIA7010E

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

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.

(+)VoltageConnectorTerminal (Wire color)(-)RHE247 (R)LHE407 (R/B)Ground							
Connector Terminal (Wire color) RH E24 7 (R) Ground Battery voltage			(+)	(-)	Voltage		
Ground Battery voltage	Connector		Terminal (Wire color)	(-)			
	RH	E24	7 (R)	Ground	Battony voltago		
	LH	E40	7 (R/B)	Giouna	Ballery Vollage		

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).

20 (R) – 7 (R)

: Continuity should exist.

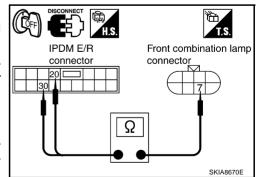
 Check continuity between IPDM E/R harness connector E7 terminal 30 (R/B) and front combination lamp LH harness connector E40 terminal 7 (R/B).

30 (R/B) – 7 (R/B)

: Continuity should exist.

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.

Check continuity between front combination lamp LH harness 2. 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,		DATA MONITOR				
make sure "HEAD LAMP SW 1" and "HEAD LAMP SW 2" turns ON-		MONITOR NC		IO DTC		
OFF linked with operation of lighting switch.		HEAD LAMP SW 1 HEAD LAMP SW 2			OFF	
When lighting switch is OFF : HEAD LAMP SW 1 OFF				2	OFF	
position : HEAD LAMP SW 2 OFF						
OK or NG						
OK >> Replace IPDM E/R.						
NG >> Check lighting switch. Refer to LT-170, "Combination				Page	Down	
Switch Inspection".				RECORD		
		MODE	BACK	LIGHT	COPY	PKIA7011E

MODE BACK

LIGHT COPY

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

L Select "BCM" by CONSULT-II, and perform self-diagnosis for "BCM". SELF-DIAG RESULTS Display of self-diagnosis results DTC RESULTS TIME CAN COMM CIRCUIT NO DTC>> Replace IPDM E/R. PAST [U1000] Μ CAN COMM CIRCUIT>> Refer to BCS-16, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" . FRASE PRINT

Front combination lamp connector Ω

> F AKS00AOQ

> > F

Н

LT

PKIA4585E

А

SKIA1039E

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

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

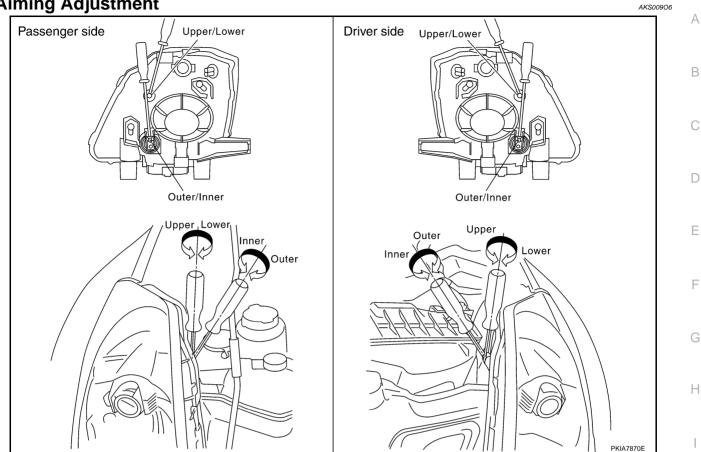
OK >> Malfunction in starter (boosting circuit) in xenon headlamp housing. (Replace xenon headlamp housing assembly)

NG >> INSPECTION END

AKS009RK

AKS009RL

Aiming Adjustment



PREPARATION BEFORE ADJUSTING

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

Before performing aiming adjustment, check the following.

- Keep all tires inflated to correct pressures. 1.
- 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

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

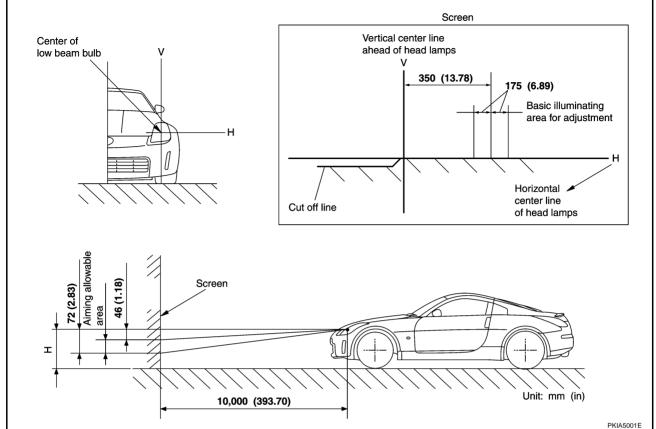
J

LT

L

Μ

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.

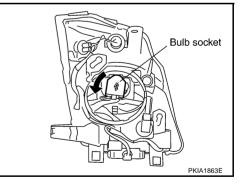
Bulb Replacement HEADLAMP (UPPER) LOW BEAM

- 1. Turn lighting switch OFF.
- 2. Remove headlamp. Refer to LT-36, "Removal and Installation" .
- 3. Turn plastic cap counterclockwise and unlock it.
- 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, perform aiming adjustment. Refer to <u>LT-33</u>, <u>"Aiming Adjustment"</u>.

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



AKS00907

HE	ADLAMP (LOWER) HIGH BEAM				
1.	Turn lighting switch OFF.	А			
2.	Open the driver and front passenger window, and then disconnect the battery negative cable.				
	CAUTION:	D			
	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	В			
	work and the side roof panel may be damaged.				
3.	Remove fender protector (front). Refer to EI-21, "FENDER PROTECTOR" in "EI" section.	С			
4.	Turn plastic cap counterclockwise and unlock it.				
5.	Disconnect bulb socket.				
6.	Unlock retaining spring and remove bulb from headlamp.	D			
7.	Install in reverse order of removal.				
	Headlamp (lower) high beam : 12V - 55W (H7)	Е			
PA	RKING LAMP (CLEARANCE LAMP)				
1.	Turn lighting switch OFF.	_			
2.	Remove fender protector (front). Refer to EI-21, "FENDER PROTECTOR" in "EI" section.	F			
3.	Turn bulb socket counterclockwise and unlock it.				
4.	Remove bulb from its socket.	G			
5.	Install in reverse order of removal.				
	Parking lamp (Clearance lamp) : 12V - 5W	Н			
FR	ONT 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.	J			
	Front turn signal lamp : 12V - 21W				
FR	ONT SIDE MARKER LAMP	LT			
1.	Turn lighting switch OFF.				
2.	Remove fender protector (front). Refer to EI-21, "FENDER PROTECTOR" in "EI" section.				
3.					
4.	Remove bulb from its socket.				
5.	Install in reverse order of removal.	Μ			
	Front side marker lamp : 12V - 5W				

CAUTION:

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

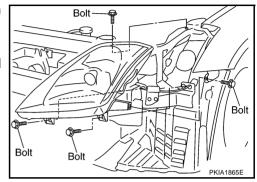
Removal and Installation REMOVAL

AKS00909

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 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

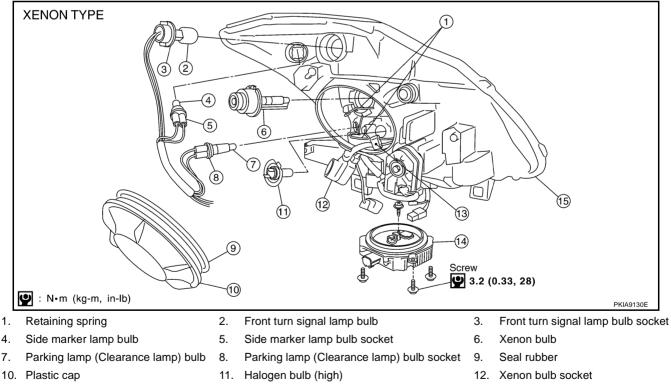
Installation in the reverse order if removal. Be careful of the following.

Headlamp mounting bolt : 6.1 N·m (0.62 kg-m, 54 in-lb) ٢

NOTE:

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

Disassembly and Assembly



- 13. Halogen bulb socket
- 14. HID C/U

15. Headlamp housing assembly

HEADLAMP (FOR USA) - XENON TYPE -

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.
- 5. 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:

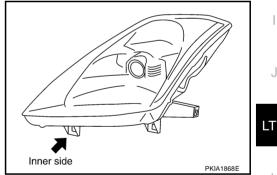
HID control unit mounting screw (): 3.1 N·m (0.32 kg-m, 27 in-lb)

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

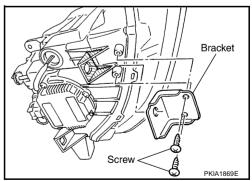
If only installation part as shown in the figure is damaged, and headlamp housing itself is not damaged, repair can be completed easily by installing correction brackets.



INSTALLATION OF HEADLAMP BRACKET

- 1. Remove headlamps. Refer to LT-36, "Removal and Installation" .
- 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



AKS0090A

А

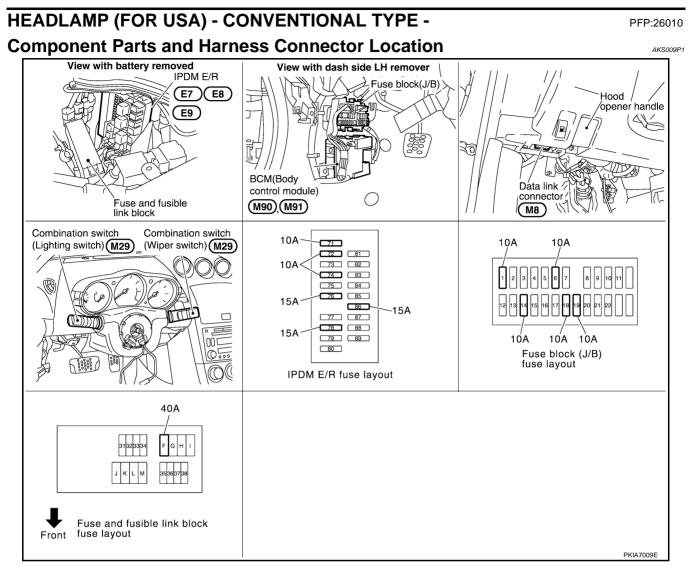
В

F

F

Н

Μ



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 of the adlamp 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)]	А
• 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	В
• to BCM (body control module) terminal 11	
through 10A fuse [No.6, located in fuse block (J/B)].	0
Ground is supplied	С
 to BCM (body control module) terminal 52 	
through grounds M30 and M66	D
• to IPDM E/R (intelligent power distribution module engine room) terminal 38 and 60	
 through grounds E17, E43 and F152. 	
Low Beam Operation	Е
With lighting switch in 2ND position, BCM receives input signal requesting by combination switch reading func- tion (Refer to <u>BCS-3, "COMBINATION SWITCH READING FUNCTION"</u>) 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.	F
 through 15A fuse [No.76, located in IPDM E/R] 	
 through IPDM E/R terminal 20 	G
 to front combination lamp RH terminal 6 	
 through 15A fuse [No.86, located in IPDM E/R] 	
 through IPDM E/R terminal 30 	Н
 to front combination lamp LT terminal 6. 	
Ground is supplied	1
 to front combination lamp RH terminal 3 	1
• through grounds E17, E43 and F152	
• to front combination lamp LH terminal 3	J
 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 request-	LT
ing headlamp high beams to illuminate. This input signal is communicated to IPDM E/R across CAN communi-	
cation lines. CPU in IPDM E/R controls headlamp high relay coil, which when energized, directs power	L
 to 10A fuse [No.72, located in IPDM E/R] through IPDM E/R terminal 27 	
5	
to front combination lamp RH terminal 2 to 100 fuse [No 74, located in IRDM E/R]	Μ
to 10A fuse [No.74, located in IPDM E/R] through IDDM E/R terminel 28	
through IPDM E/R terminal 28 to front combination lamp LH terminal 2	
 to front combination lamp LH terminal 2. Ground is supplied 	
 to front combination lamp RH terminal 3 through grounds E17, E42 and E152 	
through grounds E17, E43 and F152 to front combination lamp LH terminal 3	
 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 combina- tion 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 <u>SECURITY (THEFT WARNING) SYSTEM</u>".

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 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.

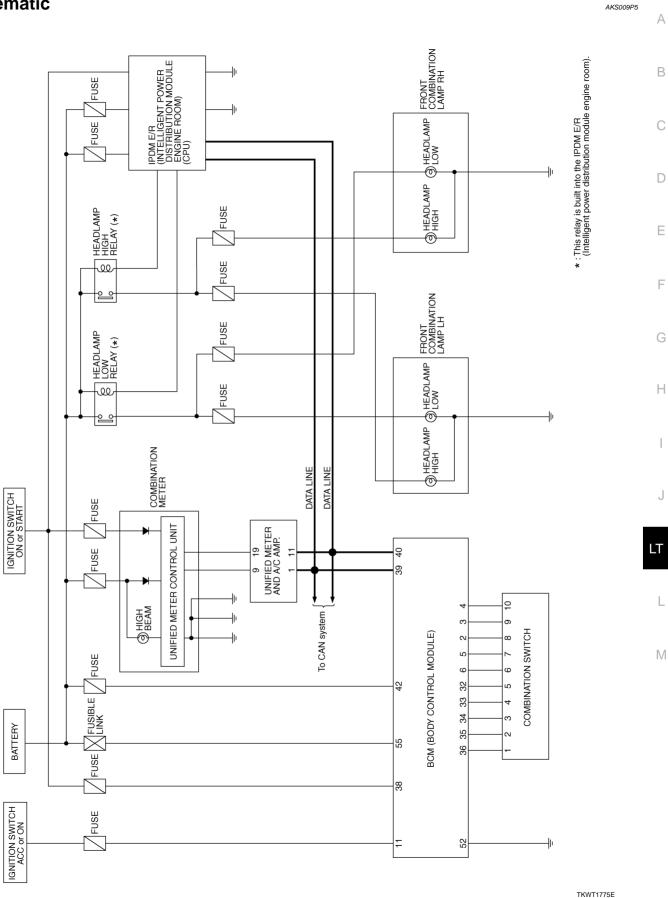
CAN Communication Unit

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

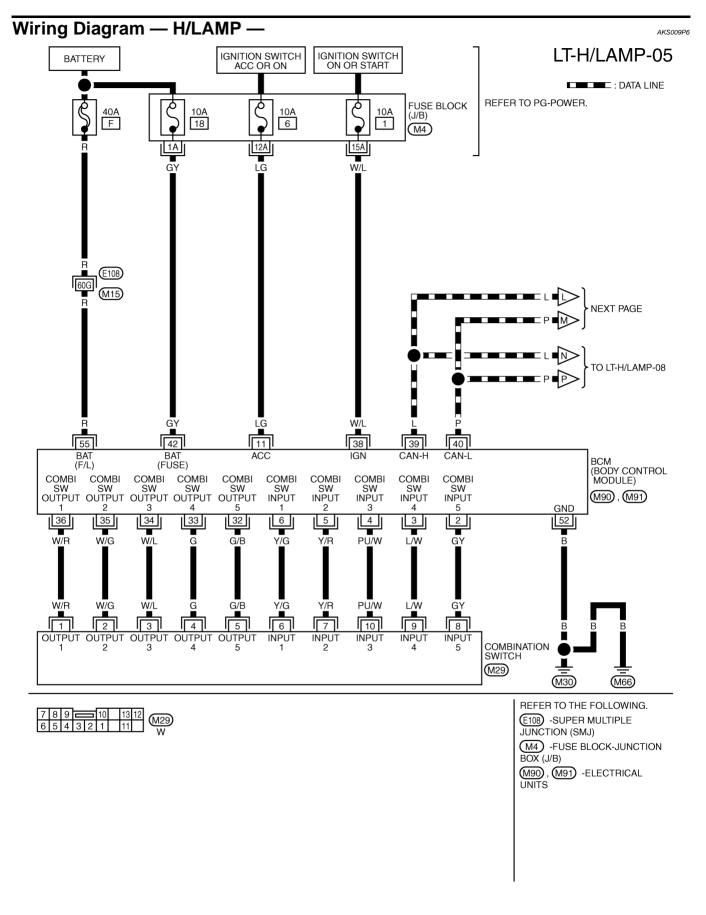
AKS009P4

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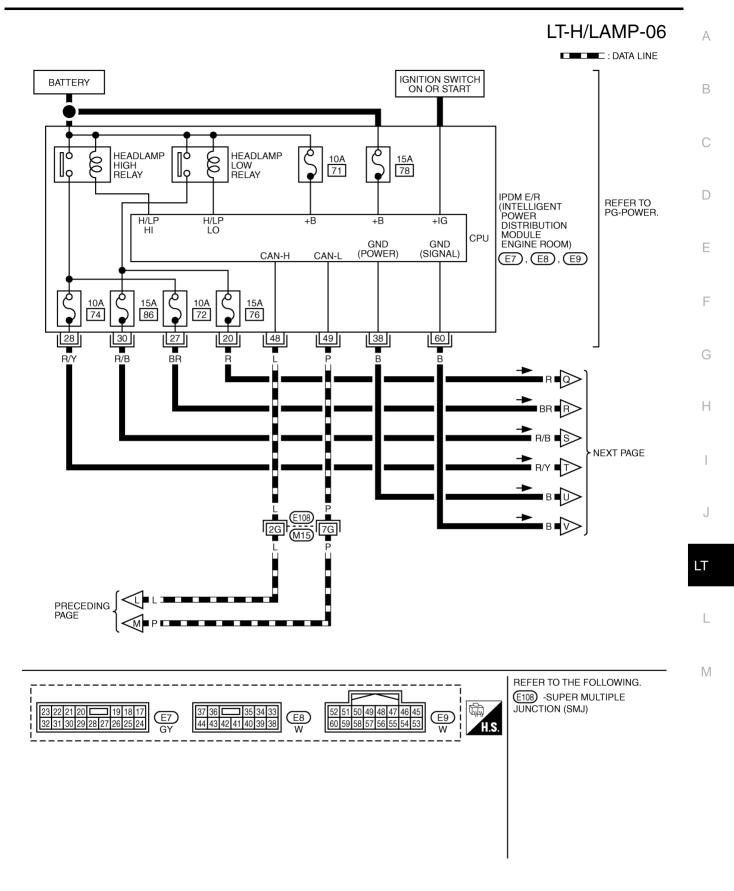
Schematic



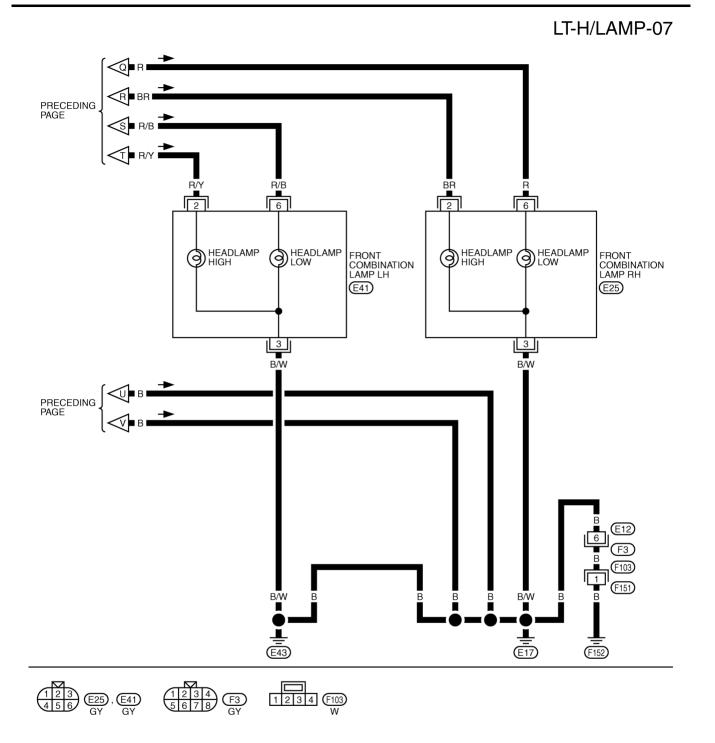
Revision: 2004 December



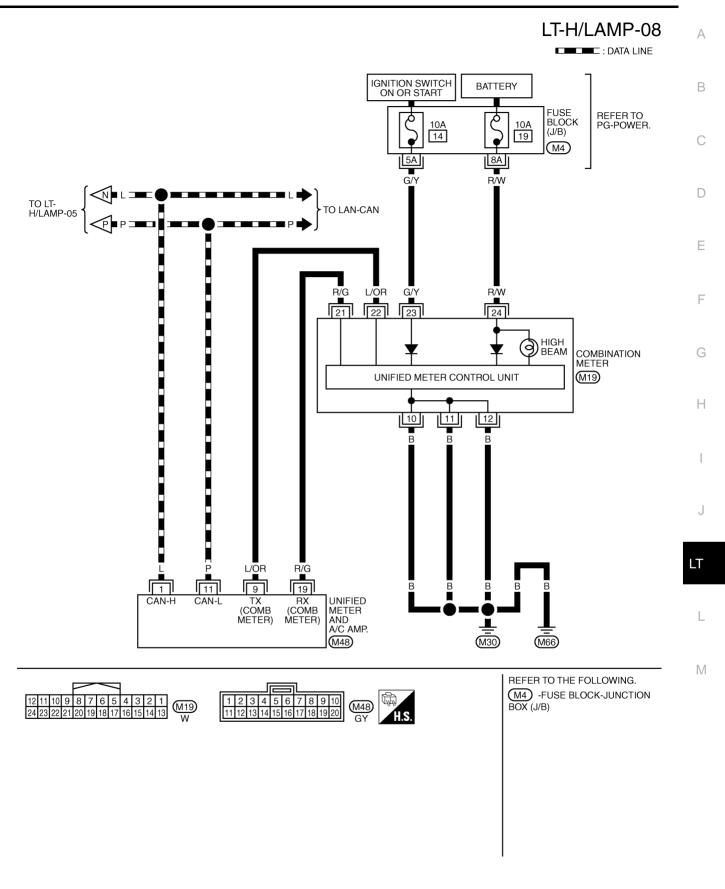
TKWT1776E



TKWT1777E



TKWT1778E



TKWT1779E

Terminals and Reference Values for BCM

	14/			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 SKIA5292E
4	PU/W	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 4 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 •••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 2 0 •••5ms SKIA5291E
33	G	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 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

AKS00AOR

Torminal	Wire			Measuring condition	
Terminal No.	color	Signal name	Ignition switch	Operation or condition	Reference value
35	W/G	Combination switch output 2			(1.0)
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

(lition	Measuring cond			Wire	Terminal
	Reference value	r condition	Operation or	Ignition switch	Signal name	color	No.
	Approx. 0V	OFF	Lighting switch	ON	Hoodlamp low (PH)	R	20
	Battery voltage	ON	2ND position	ON	Headlamp low (RH)	ĸ	20
	Approx. 0V	OFF	Lighting switch				
	Battery voltage	ON	HIGH or PASS position	ON	Headlamp high (RH)	BR	27
	Approx. 0V	OFF	Lighting switch				
	Battery voltage	ON	HIGH or PASS position	ON	Headlamp high (LH)	R/Y	28
	Approx. 0V	OFF	Lighting switch	ON	Hoodlown low (LH)	R/B	30
Ľ	Battery voltage	ON	2ND position	ON	Headlamp low (LH)	R/D	30
	Approx. 0V	-	l	ON	Ground	В	38
	_	-	—	_	CAN– H	L	48
	_	-	—	_	CAN-L	Р	49
	Approx. 0V	-		ON	Ground	В	60

AKS009R9

How to Proceed With Trouble Diagnosis

- 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

- 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
	Detterri	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 <u>PG-</u> <u>4, "POWER SUPPLY ROUTING CIRCUIT"</u>.

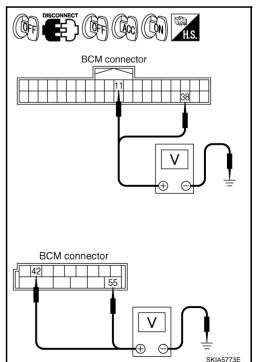
2. CHECK POWER SUPPLY CIRCUIT

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

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



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



AKS009RA

AKS009P9

$\overline{3}$. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.				
		Continuity		
Connector	Continuity			
M91	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 diag	gnosis part	Check item, diagnosis mode	Description	
		WORK SUPPORT	Changes the setting for each function.	F
HEAD	DLAMP	DATA MONITOR	Displays BCM input data in real time.	
		ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.	G
B	СМ	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.	

CONSULT-II BASIC OPERATION

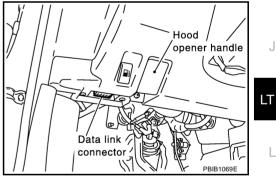
Touch "START (NISSAN BASED VHCL)".

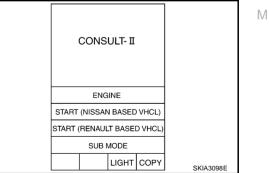
CAUTION:

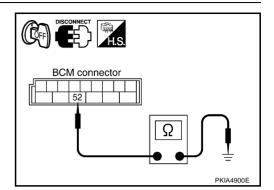
2.

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 1. CONVERTER to data link connector, then turn ignition switch ON.







А

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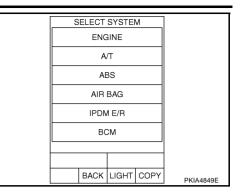
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 Touch "BCM" on "SELECT SYSTEM" screen. If "BCM" is not indicated, refer to <u>GI-39, "CONSULT-II Data Link</u> <u>Connector (DLC) Circuit"</u>.

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



 SELECT TEST ITEM

 HEAD LAMP

 WIPER

 FLASHER

 AIR CONDITIONER

 COMB SW

 IMMU

 Page Up
 Page Down

 BACK
 LIGHT
 COPY

WORK SUPPORT

4.

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 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".

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 light- ing switch signal.	
HEAD LAMP SW 2	"ON/OFF"	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from light- ing 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

- 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)

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.

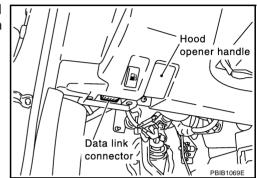
CONSULT-II OPERATION

CAUTION:

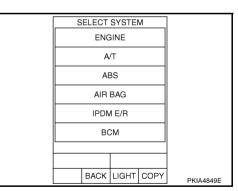
3.

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.



CONSULT- II ENGINE START (NISSAN BASED VHCL) START (RENAULT BASED VHCL) SUB MODE LIGHT COPY SKIA3098E



SELECT DIAG MODE
SELF-DIAG RESULTS
DATA MONITOR
CAN DIAG SUPPORT MNTR
ACTIVE TEST
BACK LIGHT COPY
PKIA6016E

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

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

Touch "IPDM E/R" on "SELECT SYSTEM" screen.

4. 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

			Moni	tor item sele	ction		
Item name	CONSULT-II screen display	Display or unit	ALL SIGNALS	MAIN SIGNALS	SELECT FROM MENU	Description	F
Position lights request	TAIL&CLR REQ	ON/OFF	×	×	×	Signal status input from BCM	G
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	Ц

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

With CONSULT-II Select "BCM" on CONSULT-II. With "HEAD LAMP" data monitor,	DATA MONITOR
make sure "HI BEAM SW" turns ON-OFF linked with operation of	MONITOR NO DTC
lighting switch.	HI BEAM SW ON
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>	MODE BACK LIGHT COPY PKIA6324E

Switch Inspection"

2. HEADLAMP ACTIVE TEST

(B)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).

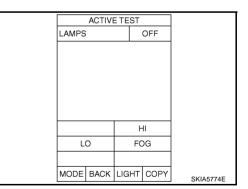
Without CONSULT-II

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

Headlamp high beam should operate.

OK or NG

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



<u> </u>				-	
3. сн		I E/R			
ТО 2. Ма	TOR" on "SELECT DIAG MODE" screen.				MONITOR
0	When ligh		: HL LO I : HL HI R		
<u>OK or N</u> OK NG	>> Repla >> Repla	ice IPDM E/R. ice BCM. Refer to <u>BC</u> f <u>BCM"</u> .	<u>S-17, "Rei</u>	moval and Installa	Page Down RECORD MODE BACK LIGHT COPY SKIA5775E
4. сн	ECK HEA	DLAMP INPUT SIGN	AL		
1. Tui 2. Dis 3. Se on	sconnect fro lect "IPDM "SELECT I	-II switch OFF. ont combination lamp E/R" on CONSULT-II. DIAG MODE" screen. 'S" on "SELECT TEST	and seled	at "ACTIVE TEST	" " " " " " " " " " " " " " " " " " "
5. Tou 6. Wh froi	uch "HI" sci nen headlai nt combina ound (Head		ating, cheo LH harne	ck voltage betweer ss connector and	
		Terminals			
Co	nnector	(+) Terminal (Wire color)	(-)	Voltage	
RH LH	Ground		Ground	Battery voltage	
1. Tui 2. Dis 3. Sta 4. Wh	sconnect fro art auto acti nen headlai	switch OFF. ont combination lamp ive test. Refer to <u>PG-2</u>	24, "Auto A	<u>ctive Test"</u> .	n front combination lamp RH and LH har-
		Terminals			
	(+) (-)			Voltage	

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

1. 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.

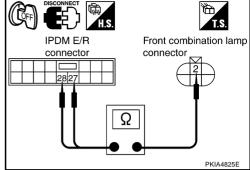
Headlamp High Beam Does Not Illuminate (One Side)

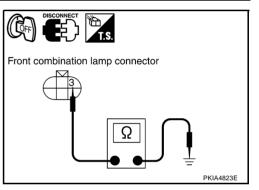
1. CHECK BULB

Check bulb of lamp which does not illuminate. OK or NG

OK >> GO TO 2.

NG >> Replace headlamp bulb.





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$\overline{2}$. 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 HIGH BEAM position.
- 5. Check voltage between front combination lamp RH or LH harness connector and ground.

		(-)	Voltage	
Con	Connector Terminal (Wire color)		(-)	
RH	E25	E25 2 (BR)		Battery voltage
LH	E41	2 (R/Y)	Ground	Dattery voltage



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

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 E25 terminal 2 (BR).

: Continuity should exist.

4. 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.

4. CHECK HEADLAMP GROUND

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

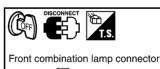
: Continuity should exist.

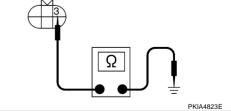
OK or NG

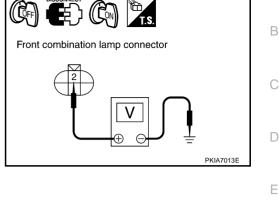
OK >> Check headlamp harness and connector.

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NG >> Repair harness or connector.







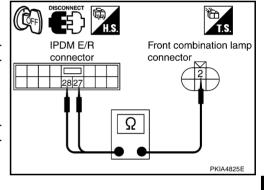
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High Beam Indicator Lamp Does Not Illuminate 1. снеск вицв	AKS00AOL
Check bulb of high beam indicator lamp. <u>OK or NG</u> OK >> Replace combination meter. NG >> Replace indicator bulb. Headlamp Low Beam Does Not Illuminate (Both Sides)	les) акѕооло
1. CHECK COMBINATION SWITCH INPUT SIGNAL	
 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 LT-170, "Combination Switch Inspection". 2. HEADLAMP ACTIVE TEST 	DATA MONITOR MONITOR NO DTC HEAD LAMP SW1 ON HEAD LAMP SW2 ON MODE BACK LIGHT COPY PKIA6325E
 With CONSULT-II Select "IPDM E/R" on CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen. Select "LAMPS" on "SELECT TEST" ITEM screen. Touch "LO" screen. Make sure headlamp low beam operation. Headlamp low beam should operate. 	ACTIVE TEST LAMPS OFF

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.

ACTIVE TEST				
LAMPS			OFF	
		F	11	
LO		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.	DATA MO MONITOR	DNITOR		
	Make sure "HL LO REQ" turns ON when lighting switch is in 2ND position.	HL LO REQ	ON		E
	When lighting switch is 2ND :HL LO REQ ON position				(
OK d	or NG				
OK	>> Replace IPDM E/R.		Page Down		Г
NG		MODE BACK	RECORD	SKIA5780E	

4. CHECK HEADLAMP INPUT SIGNAL

()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.
- 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.

		Terminals		
		(+)	()	Voltage
Conr	nector	Terminal (Wire color)	(-)	
RH	E25	6 (R)	Ground	Battery voltage
LH	E41	6 (R/B)	Gibunu	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" .
- 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	Potton / voltogo							
LH	E41	6 (R/B)	Giouna	Battery voltage							

OK or NG

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

G >> GO TO 5.

Front combination lamp connector



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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 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.

3. 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.

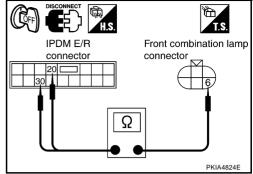
NG >> Repair harness or connector.

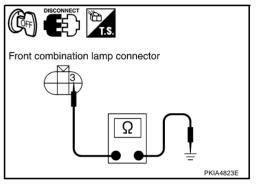
Headlamp Low Beam Does Not Illuminate (One Side)

1. CHECK BULB

Check bulb of lamp which does not illuminate. OK or NG

- OK >> GO TO 2.
- NG >> Repair malfunctioning part.





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2. CHECK HEADLAMP INPUT SIGNAL

(B) 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.
- 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.

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

OK or NG

OK >> GO TO 4.

NG >> GO TO 3.

3. CHECK HEADLAMP CIRCUIT

1. Turn ignition switch OFF.

20(R) - 6(R)

- 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 6 (R).

: Continuity should exist.

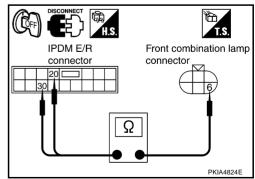
 Check continuity between IPDM E/R harness connector E7 terminal 30 (R/B) and front combination lamp LH harness connector E41 terminal 6 (R/B).

30 (R/B) - 6 (R/B)

: Continuity should exist.

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Repair harness or connector.



Front combination lamp connector

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Revision: 2004 December

4. CHECK HEADLAMP GROUND

1. 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 2. 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

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

LT-62

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)".

	[U1	000]			PASI	
ER/	ASE	-		РН	INT	
MODE	B	ACK	LIGH	IT	COPY	SKIA1039E
						GRIATOSSE

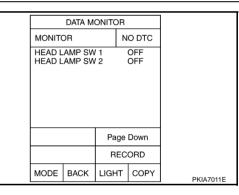
SELF-DIAG RESULTS

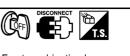
TIME

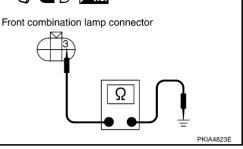
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DTC RESULTS

CAN COMM CIRCUIT

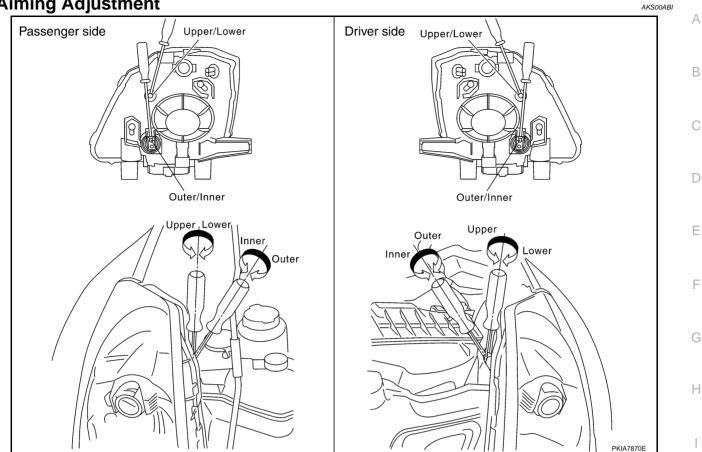






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Aiming Adjustment



PREPARATION BEFORE ADJUSTING

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

Before performing aiming adjustment, check the following.

- Keep all tires inflated to correct pressures. 1.
- 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

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

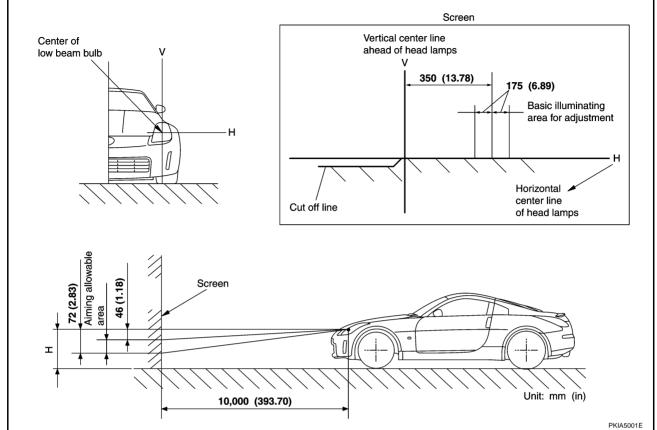
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ADJUSTMENT USING AN ADJUSTMENT SCREEN (LIGHT/DARK BORDERLINE)



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

AKS00ABJ

- 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 reverse order of removal.

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

		٨
1.	Turn lighting switch OFF.	А
2. 3.	Remove fender protector (front). Refer to <u>EI-21, "FENDER PROTECTOR"</u> in "EI" section. Turn plastic cap counterclockwise and unlock it.	
3. 4.	Disconnect bulb terminal.	В
5.	Unlock retaining spring and remove bulb from headlamp.	
6.	Install in the reverse order of removal.	0
	Headlamp (lower) high beam/Fog lamp :12V - 55W (H1)	С
PA	RKING LAMPS (CLEARANCE LAMPS)	
1.	Turn lighting switch OFF.	D
2.	Remove fender protector (front). Refer to EI-21, "FENDER PROTECTOR" in "EI" section.	
3.	Turn bulb socket counterclockwise and unlock it.	Е
4.	Remove bulb from its socket.	
5.	Install in the reverse order of removal.	_
	Parking lamps (Clearance lamps) : 12V - 5W	F
FR	ONT TURN SIGNAL LAMP	
1.	Turn lighting switch OFF.	G
2.	Remove fender protector (front). Refer to <u>EI-21, "FENDER PROTECTOR"</u> in "EI" section.	
3.	Turn bulb socket counterclockwise and unlock it.	Н
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 watertight- ness.	J
FR	ONT SIDE MARKER LAMP	J
1.	Turn lighting switch OFF.	
2.	Remove fender protector (front). Refer to EI-21, "FENDER PROTECTOR" in "EI" section.	LT
3.	Turn bulb socket counterclockwise and unlock it.	
4.	Remove bulb from its socket.	1
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.	M
	emoval and Installation AKSOOABK	
1.	Remove front bumper. Refer to <u>EI-14, "FRONT BUMPER"</u> in <u>Bolt</u> "	
2.	Remove headlamp mounting bolts.	
3.	Pull headlamp toward vehicle front, disconnect connector, and remove headlamp.	
	Bolt Bolt PKIA1865E	

INSTALLATION

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

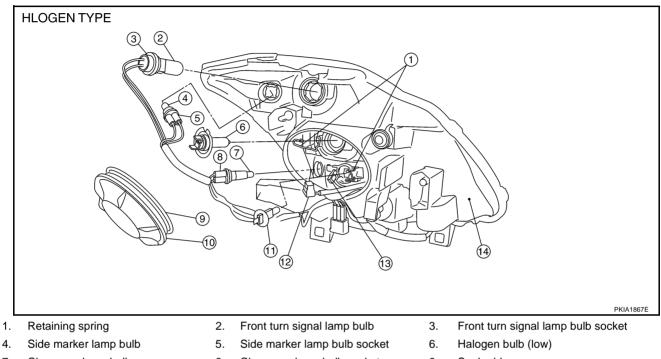
Headlamp mounting bolt:

• : 6.1 N·m (0.62 kg-m, 54 in-lb)

NOTE:

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

Disassembly and Assembly



- 7. Clearance lamp bulb
- 8. Clearance lamp bulb socket

- 10. Plastic cap
- 13. Halogen bulb socket (high)
- Clearance lamp bulb so
 Halogen bulb (high)
- 14. Headlamp bousing
 - 14. Headlamp housing assembly
- 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:

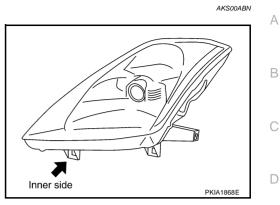
CAUTION:

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

AKS00ABL

Servicing to Replace Headlamps When Damaged

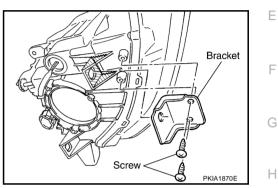
If only installation part as shown in the figure is damaged, and headlamp housing itself is not damaged, repair can be completed easily by installing correction brackets.



INSTALLATION OF HEADLAMP BRACKET

- 1. Remove headlamps. Refer to LT-65, "Removal and Installation" .
- 2. 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

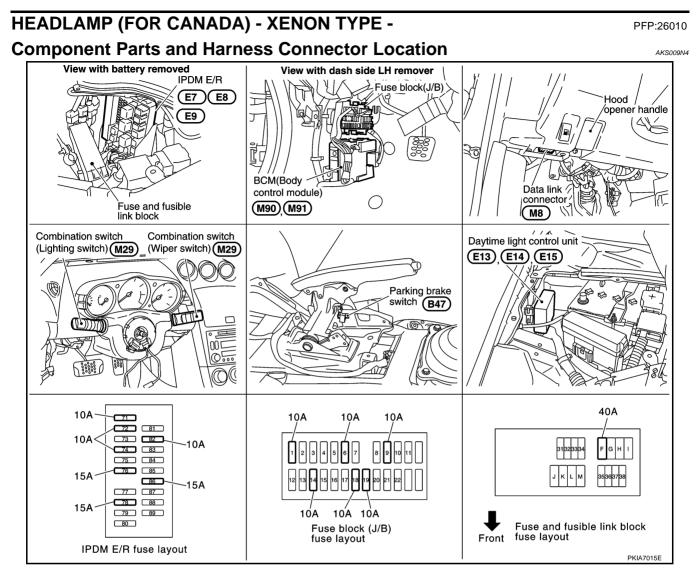


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HEADLAMP (FOR CANADA) - XENON TYPE -



System Description

AKS009N5

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)]

LT-68

HEADLAMP (FOR CANADA) - XENON TYPE -

to daytime light control unit terminal 3	
 through 10A fuse [No. 1, located in fuse block (J/B)] 	А
 to BCM (body control module) terminal 38. 	
With ignition switch in ACC or ON position, power is supplied	D
 through 10A fuse [No. 6, located in fuse block (J/B)] 	В
 to BCM (body control module) terminal 11. 	
With ignition switch in START position, power is supplied	С
 through 10A fuse [No. 9, located in fuse block (J/B)] 	0
 to daytime light control unit terminal 2. 	
Ground is supplied	D
 to daytime light control unit terminals 14 and 16 	
 through groundsE17, E43 and F152 	
 to IPDM E/R (intelligent power distribution module engine room) terminals 38 and 60 	E
 through grounds E17, E43 and F152 	
 to BCM (body control module) terminal 52 	F
 through grounds M30 and M66. 	Г
HEADLAMP OPERATION	
Low Beam Operation	G
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	1
through 15A fuse [No. 86, located in IPDM E/R]	
through IPDM E/R terminal 30	J
to front combination lamp LH terminal 7. Cround is supplied at all times	
Ground is supplied at all times	
• to front combination lamp RH terminal 8	LT
through grounds E17, E43 and F152, and to front combination lown LU terminel 9	
• to front combination lamp LH terminal 8 • through grounds E17 E12 and E152	
 through grounds E17, E43 and F152. With power and ground supplied, low beam headlamps illuminate. 	L
High Beam Operation (When Engine Stopped) /Flash-to-Pass Operation	Μ

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

- 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.

Enç	jine	With engine stopped												With e	ngine	runnin	ning							
Lighting switch			OFF			1ST			2ND			OFF			1ST		2ND							
		Hi	Lo	Ρ	Hi	Lo	Ρ	Hi	Lo	Ρ	Hi	Lo	Р	Hi	Lo	Р	Hi	Lo	Р					
Head- lamp	High beam	_	_	_	_	_	×	×	_	×	•*	•*	×	•*	•*	×	×	_	×					
	Low beam	_	_	_	_	_	×	×	×	×	_	_	×	_	_	×	×	×	×					

HEADLAMP (FOR CANADA) - XENON TYPE -

Engine		With engine stopped									With engine running								
Lighting quitch		OFF	OFF 1ST				2ND			OFF				1ST			/		
Lighting switch	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	_	_	_	×	×	×	×	×	×	_	_	_	×	×	×	×	×	×	

• 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 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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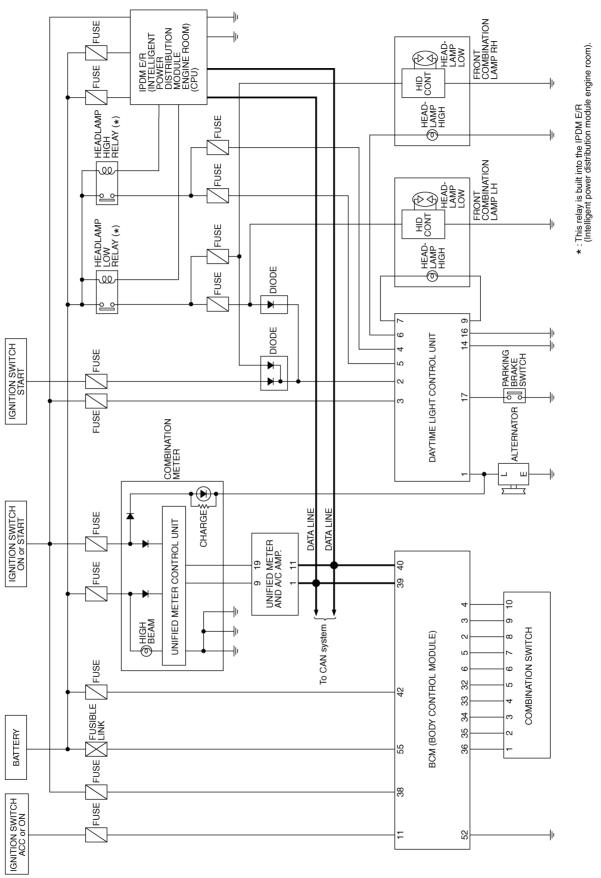
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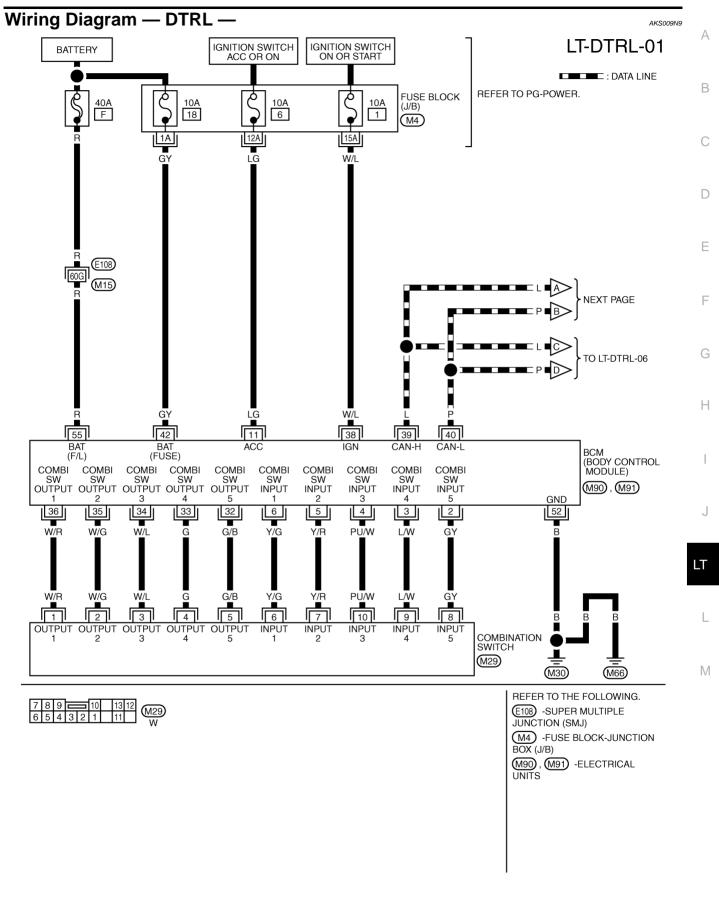
HEADLAMP (FOR CANADA) - XENON TYPE -

Schematic

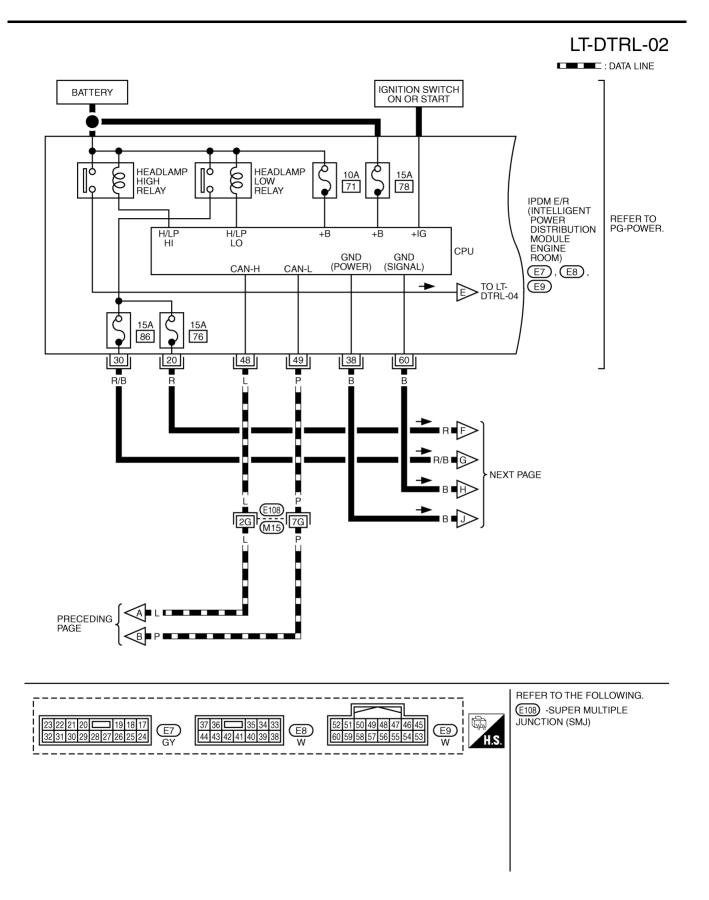


TKWT1780E

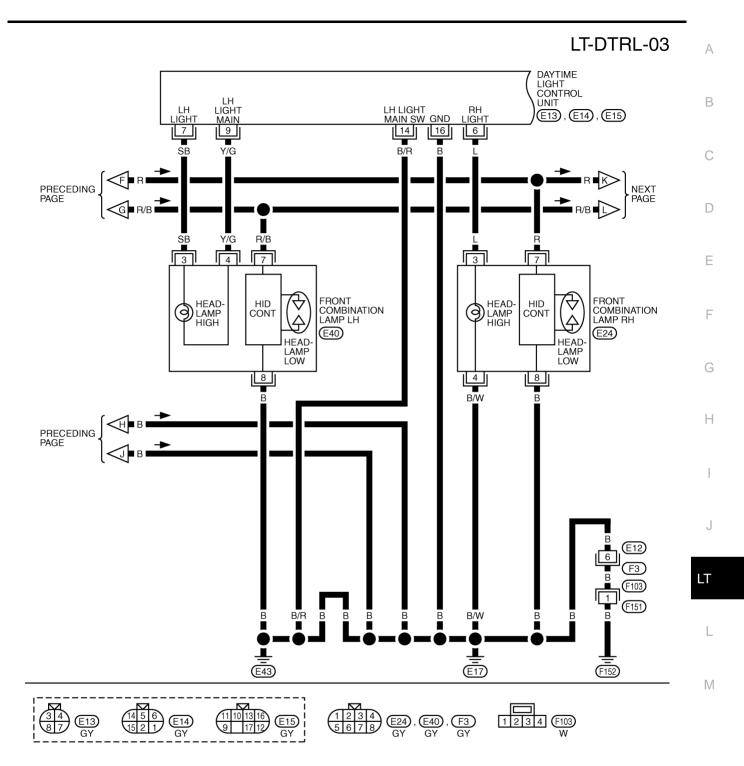
AKS009N8



TKWT1781E

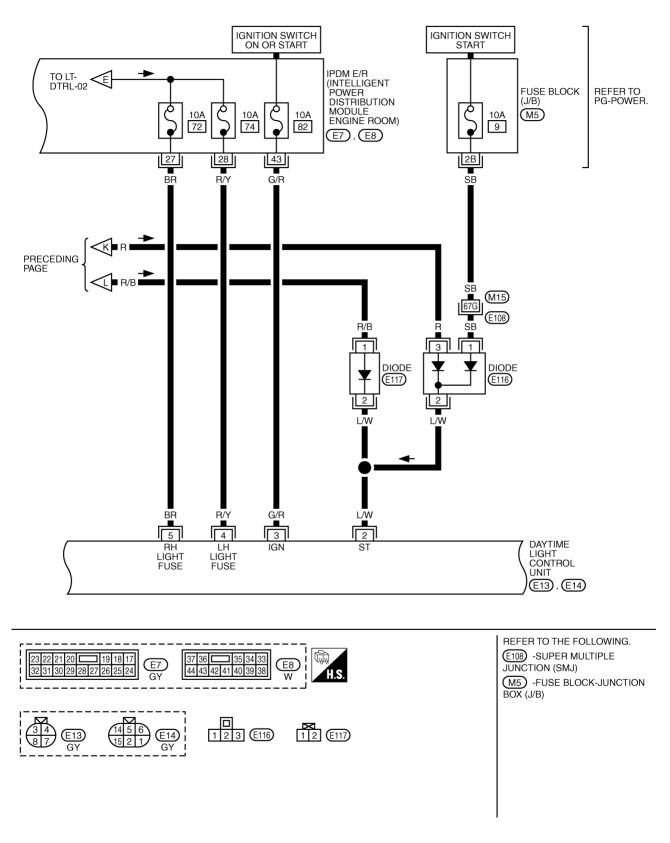


TKWT1782E

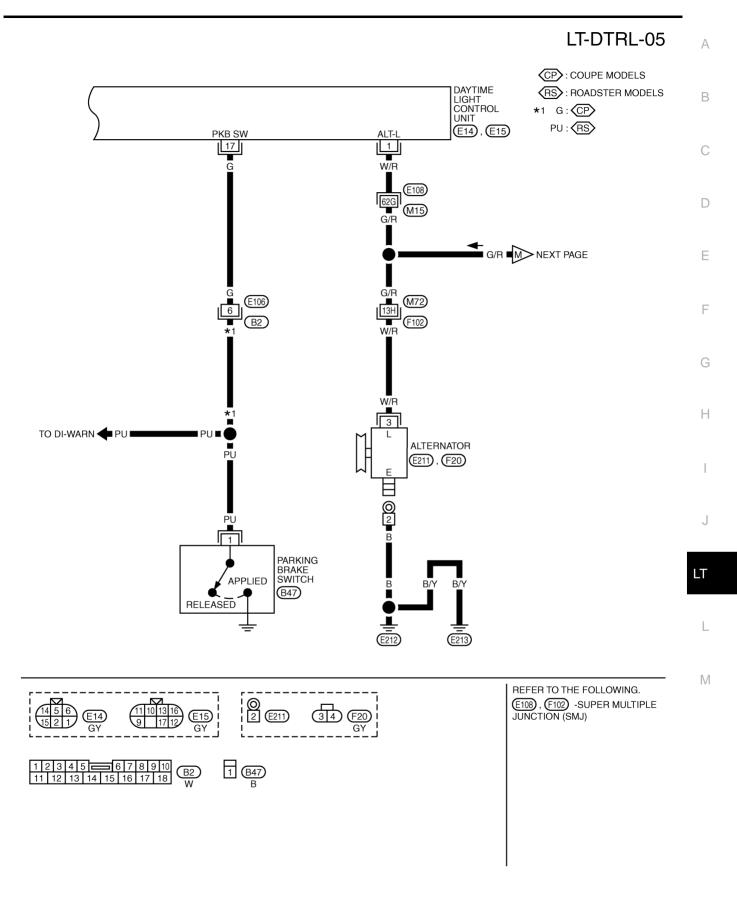


TKWT1783E

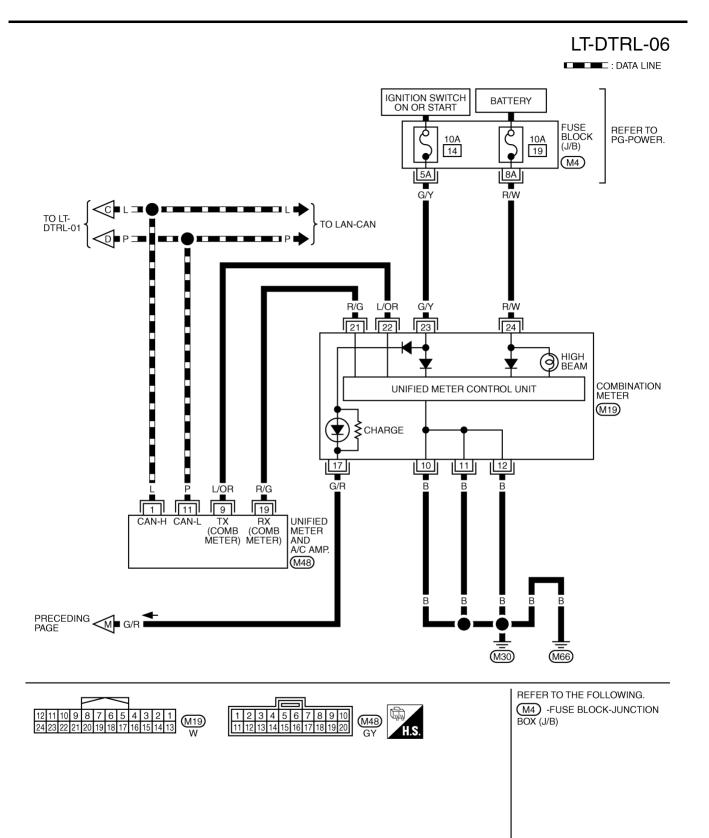
LT-DTRL-04



TKWT1784E



TKWT1589E



TKWT1730E

Terminals and Reference Values for BCM

				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 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 SKIA5292E
4	PU/W	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 2 0 + 5ms SKIA5291E
5	Y/R	Combination switch input 2			
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
32	G/B	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 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 0 •••5ms SKIA5291E

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Tarrainal	Wire		Measuring condition		
Terminal No.	color	Signal name Ignition Switch Operation or condition		Reference value	
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 + 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

Measuring condition Terminal Wire Reference value Signal name Ignition color No. Operation or condition switch OFF Approx. 0V Lighting switch 2ND 20 R Headlamp low (RH) ON position ON Battery voltage OFF Approx. 0V Lighting switch HIGH or 27 BR Headlamp high (RH) ON PASS position ON Battery voltage OFF Approx. 0V Lighting switch HIGH or R/Y ON 28 Headlamp high (LH) PASS position ON Battery voltage OFF Approx. 0V Lighting switch 2ND 30 R/B ON Headlamp low (LH) position ON Battery voltage 38 В Ground ON Approx. 0V ____ 43 G/R Ignition switch (ON) ON Battery voltage 48 L CAN-H ____ ____ Ρ CAN-L 49 ____ ____ ____ в 60 Ground ON Approx. 0V ____

AKS009QR

Terminals and Reference Value for Daytime Light Control Unit

Terminal No.	Wire color	ltem	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	Derking broke evitati	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

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- 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

AKS00AOZ

1. CHECK FUSES

• Check for blown fuses.

UNIT	POWER SOURCE	Fuse and fusible link No.
	Detterri	F
BCM	Battery	18
BCM	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
		72
	Dettern	74
IPDM E/R	Battery	76
		86
	Ignition switch ON or START	82
AYTIME 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 <u>PG-</u> <u>4, "POWER SUPPLY ROUTING CIRCUIT"</u>.

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
M90	38 (W/L)		0V	0V	Battery voltage
M91	42 (GY)	Glound	Battery voltage	Battery voltage	Battery voltage
10191	55 (R)		Battery voltage	Battery voltage	Battery voltage

BCM connector

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.			
Terminals			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.	F
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.	G
BCM	CAN DIAG SUPPORT MNTR	The result transmit/receive diagnosis of CAN communication can be read.	

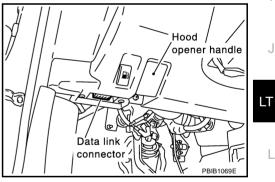
CONSULT-II BASIC OPERATION

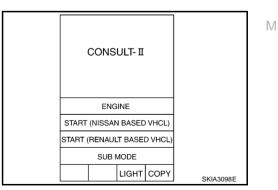
CAUTION:

2.

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.

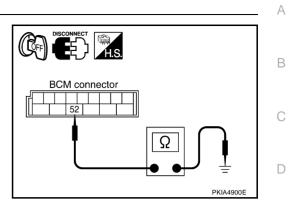
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.





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

Touch "START(NISSAN BASED VHCL)".

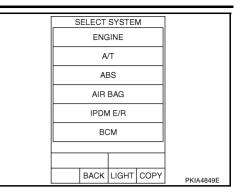


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If "BCM" is not indicated, refer to <u>GI-39, "CONSULT-II Data Link</u> <u>Connector (DLC) Circuit"</u>.



 SELECT TEST ITEM

 HEAD LAMP

 WIPER

 FLASHER

 AIR CONDITIONER

 COMB SW

 IMMU

 Page Up
 Page Down

 BACK
 LIGHT
 COPY

WORK SUPPORT

4.

Operation Procedure

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

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
BATTERY SAVER SET	Exterior lamp battery saver control mode can be changed in this mode.	ON	×
DATTERT SAVER SET	lects 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 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".

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 light- ing switch signal.
HEAD LAMP SW 2	"ON/OFF"	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from light- ing 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"	_
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)
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 SWNOTE	"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)

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

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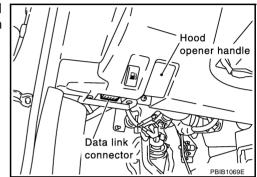
Check Item, Diagnosis Mode	Description
SELF-DIAGNOSTIC RESULTS	IPDM E/R performs self-diagnosis of CAN communication.
DATA MONITOR	The input/output data of IPDM E/R is displayed in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST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

CONSULT-II BASIC OPERATION

CAUTION:

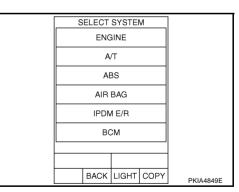
If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carry out CAN communication.

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



CONSULT- II

ENGINE
START (NISSAN BASED VHCL)
START (RENAULT BASED VHCL)
SUB MODE
LIGHT COPY
SKIA3098E



 SELECT DIAG MODE

 SELF-DIAG RESULTS

 DATA MONITOR

 CAN DIAG SUPPORT MNTR

 ACTIVE TEST

 BACK

 LIGHT
 COPY

2. 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 <u>GI-39</u>, "CONSULT-II Data Link Connector (DLC) <u>Circuit"</u>.

4. 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

			М	onitor item s	election		
Item name	CONSULT-II screen display	Display or unit	ALL SIG- NALS	MAIN SIGNALS	SELECTION FROM MENU	Description	F
Position lights request	TAIL&CLR REQ	ON/OFF	×	×	×	Signal status input from BCM	G
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	Ц

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" .

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.

3 (G/R) – Ground : Battery voltage should exist.

OK or NG

OK >> GO TO 2.

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

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.

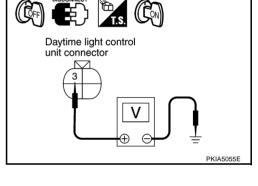
2. Check continuity between daytime light control unit harness connector E15 terminal 16 (B) and ground.

16 (B) – Ground

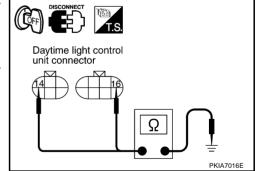
: Continuity should exist.

OK or NG

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



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Daytime light control unit connector

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

- 1. Turn ignition switch OFF.
- 2. 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

>> GO TO 4. OK

NG >> Repair harness or connector.

4. CHECK PARKING BRAKE SWITCH

- 1. Connect daytime light control unit connector and parking brake switch connector.
- 2 Turn ignition switch ON.
- 3. 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 ter-4. minal 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

- Turn ignition switch OFF. 1.
- 2. Disconnect daytime light control unit connector.
- 3. 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

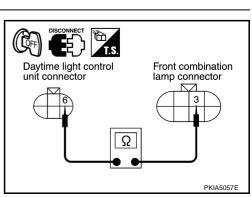
- Turn ignition switch OFF. 1.
- 2. Disconnect daytime light control unit connector and front combination lamp RH connector.
- Check harness continuity between daytime light control unit 3. harness connector E14 terminal 6 (L) and front combination lamp RH harness connector E24 terminal 3 (L).

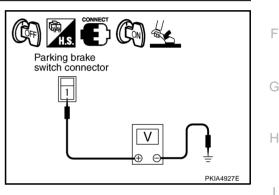
6 (L) – 3 (L)

: Continuity should exist.

OK or NG

- OK >> Replace daytime light control unit.
- NG >> Repair harness or connector.





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Parking brake switch connector

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PKIA5056E

Headlamp High Beam Does Not Illuminate (Both Sides)

1. CHECK COMBINATION SWITCH INPUT SIGNAL

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> <u>Switch Inspection"</u>.

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" .
- 2. Make sure headlamp high beam operation.

Headlamp high beam should operate.

OK or NG

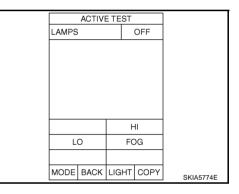
OK >> GO TO 3. NG >> GO TO 4.

3. CHECK IPDM E/R

1. Select "IPDM E/R" on CONSULT-II, and select "DATA MONI- TOR" on "SELECT DIAG MODE" screen.	DATA MONITOR MONITOR
2. Make sure "HL LO REQ" and "HL HI REQ" turns ON when light- ing switch is in HIGH BEAM position.	HL LO REQ ON HL HI REQ ON
When lighting switch is: HL LO REQ ONHIGH BEAM position: HL HI REQ ON	
OK or NG	
OK >> Replace IPDM E/R.	Page Down RECORD

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

		DATA M				
мог	VITC	R	I	NC	DTC	
ні в	HI BEAM SW			٥N	1	
мо	DE	BACK	LIGHT	г	COPY	PKIA6324E



MODE BACK LIGHT COPY

SKIA5775E

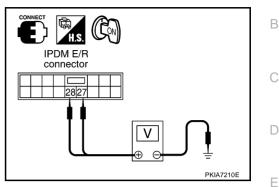
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4. CHECK HEADLAMP INPUT SIGNAL

(B)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. 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	Connector Terminal (Wire color)			
E7	27 (BR)	Ground	Batton voltago	
	28 (R/Y)	Giouna	Battery voltage	



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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)	(-)		
F7	27 (BR)	Ground	Battory voltago	
L/	28 (R/Y)	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 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.

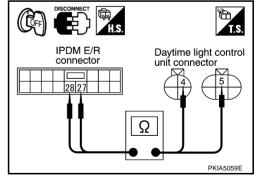
: Continuity should exist.

4. 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)

OK or NG

- OK >> Replace daytime light control unit.
- NG >> Repair harness or connector.



RH High Beam Does Not Illuminate But RH Low Beam Illuminates

Inspect bulb of lamp.

OK or NG

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

2. CHECK HEADLAMP INPUT SIGNAL

()With CONSULT-II

- 1. Connect 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.
- 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).

3 (L) – Ground

: 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 RH harness connector E24 terminal 3 (L) and ground.

3 (L) – Ground

: Battery voltage should exist.

OK or NG

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

3. CHECK DAYTIME LIGHT CONTROL CIRCUIT

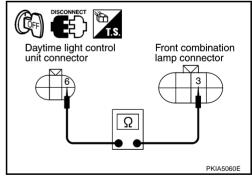
- 1. Disconnect daytime light control unit connector and front combination lamp RH connector.
- 2. Check continuity between daytime light control unit harness connector E14 terminal 6 (L) and front combination lamp RH harness connector E24 terminal 3 (L).

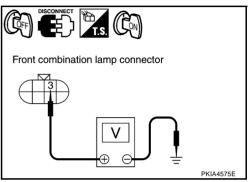
6 (L) – 3 (L)

: Continuity should exist.

OK or NG

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





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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" 2. on "SELECT DIAG MODE" screen.
- Touch "HI" screen. 3
- 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 PG-24, "Auto Active Test" . 1.
- 2. When headlamp high beam is operating, check voltage between daytime light control unit harness connector E14 terminal 5 (BR) and ground.

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

OK or NG

- OK >> Replace daytime light control unit.
- NG >> GO TO 5.

5. CHECK IPDM E/R CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect IPDM E/R connector. 2.
- 3 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 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.

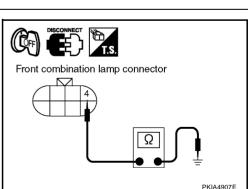
4 (B/W) – Ground

Revision: 2004 December

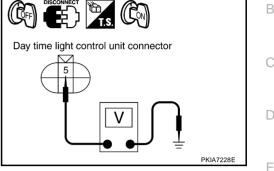
: Continuity should exist.

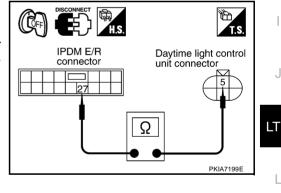
OK or NG

- 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

Inspect bulb of lamp.

OK or NG

OK >> GO TO 2. NG >> Replace bulb of lamp.

2. CHECK HEADLAMP INPUT SIGNAL

()With CONSULT-II

- 1. Connect 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.
- 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).

3 (SB) – Ground

: Battery voltage should exist.

Without CONSULT-II

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

3 (SB) – Ground

: Battery voltage should exist.

OK or NG

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

3. CHECK DAYTIME LIGHT CONTROL UNIT CIRCUIT

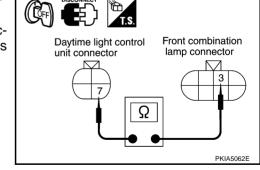
- 1. Disconnect daytime light control unit connector and front combination lamp LH connector.
- Check continuity between daytime light control harness connector E13 terminal 7 (SB) and front combination lamp LH harness connector E40 terminal 3 (SB).

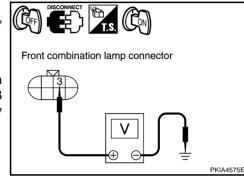
7 (SB) – 3 (SB)

: Continuity should exist.

OK or NG

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





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4. CHECK DAYTIME LIGHT CONTROL UNIT INPUT SIGNAL

(B) With CONSULT-II

- 1. 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 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.

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 daytime light control unit harness connector E13 terminal 4 (R/Y) and ground.

E)

IPDM E/R

connector

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.
- 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.

6. CHECK DAYTIME LIGHT CONTROL UNIT CIRCUIT

- 1. Disconnect daytime light control unit connector.
- 2. 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).

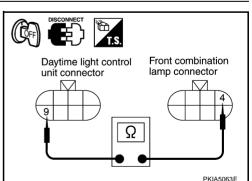
9 (Y/G) – 4 (Y/G)

: Continuity should exist.

OK or NG

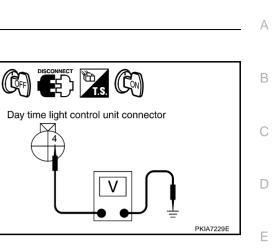
OK >> GO TO 7.

NG >> Repair harness or connector.



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Daytime light control

PKIA7198F

unit connector

7. CHECK DAYTIME LIGHT CONTROL UNIT GROUND

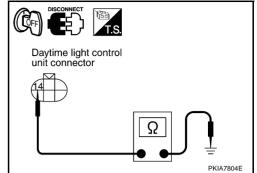
Check continuity between daytime light control unit harness connector E14 terminal 14 (B/R) and ground.

14 (B/R) – Ground

Fround : 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

(B)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 2ND position

: HEAD LAMP SW 1 ON : 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> <u>Switch Inspection"</u>.

2. HEADLAMP ACTIVE TEST

(B)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.

	ACTIVE	ETE	ST		
LAMPS				OFF	
			F	11	
L	LO FOG				
MODE	BACK	LIG	ΗТ	COPY	SKI45774E

DATA MONITOR					
MONITO	ONITOR NO DTC			DTC	
HEAD L	AMP SW	1	10	N	
HEAD L	AMP SW2		2 ON		
	-				
MODE	BACK	LIGH	т	COPY	PKIA6325
			_		1 11140323

AKS00ABP

3. CHECK IPDM E/R

					. Α
	elect "IPDM E/R" on CONSULT-II and select "DATA MONI- OR" on "SELECT DIAG MODE" screen.	DATA M MONITOR			
	ake sure "HL LO REQ" turns ON when lighting switch is in ND position.	HL LO REQ	ON		В
	When lighting switch is 2ND :HL LO REQ ON position				С
<u>OK or</u> OK	>> Replace IPDM E/R.		Page Down RECORD		D
NG	>> Replace BCM. Refer to <u>BCS-17, "Removal and Installa-</u> tion of BCM".	MODE BACK	LIGHT COPY	SKIA5780E	

4. CHECK HEADLAMP INPUT SIGNAL

(P)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. 4.
- 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	E24	7 (R)	Ground	Battery voltage	
LH	E40	7 (R/B)	Ground	Dattery voltage	

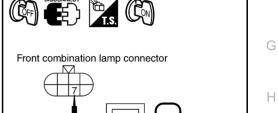
Without CONSULT-II

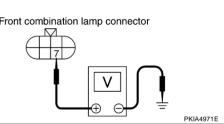
- 1. Turn ignition switch OFF.
- Disconnect front combination lamp RH and LH connector. 2.
- Start auto active test. Refer to PG-24, "Auto Active Test" . 3.
- 4. When headlamp low beam is operating, check voltage between front combination lamp RH and LH harness connector and ground.

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

OK or NG

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





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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).

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.

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

Headlamp Low Beam Does Not Illuminate (One Side)

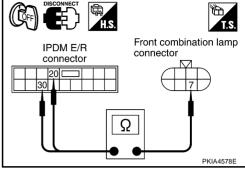
1. CHECK BULB

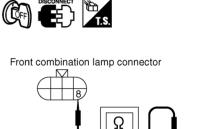
Check ballasts (HID control unit) and xenon bulb of lamp which does not illuminate. Refer to <u>LT-32, "Xenon</u> <u>Headlamp Trouble Diagnosis"</u>.

OK or NG

OK >> GO TO 2.

NG >> Repair malfunctioning part.







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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.
- 5. 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)	Giouna			

OK or NG

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

3. CHECK HEADLAMP CIRCUIT

- 1. Disconnect IPDM E/R connector and front combination lamp RH or LH connector.
- 2. 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.

3. 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

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

8 (B) – Ground

: Continuity should exist.

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

8 (B) - Ground

: Continuity should exist.

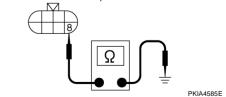
OK or NG

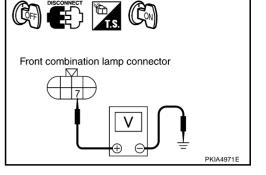
- OK >> Check headlamp harness and connectors.
- NG >> Repair harness or connector.





Front combination lamp connector





- Front combination lamp IPDM E/R connector connector 120 Ω PKIA4578E
- LT

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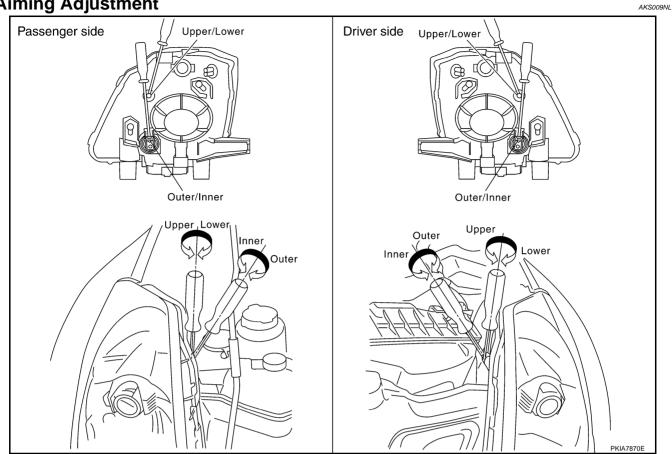
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Aiming Adjustment



PREPARATION BEFORE ADJUSTING

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

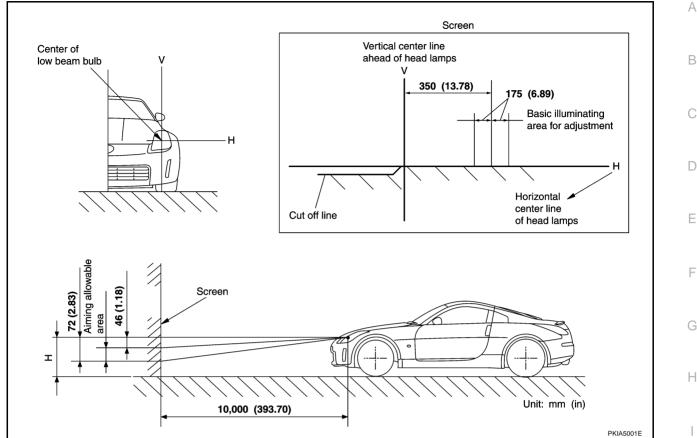
Before performing aiming adjustment, check the following.

- 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

- Turn headlamp low beam on. 1.
- 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.

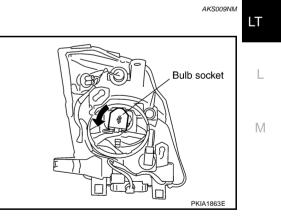
Bulb Replacement HEADLAMP (UPPER) LOW BEAM

- 1. Turn lighting switch OFF.
- 2. Remove headlamp. Refer to LT-103, "Removal and Installation"
- 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 <u>LT-100, "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 <u>EI-21, "FENDER PROTECTOR"</u> 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 <u>EI-21, "FENDER PROTECTOR"</u> 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:

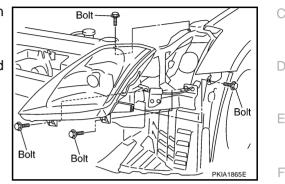
After installing bulb, be sure to install plastic cap and bulb socket securely to insure watertightness.

Removal and Installation REMOVAL

1. 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.

- 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.



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INSTALLATION

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

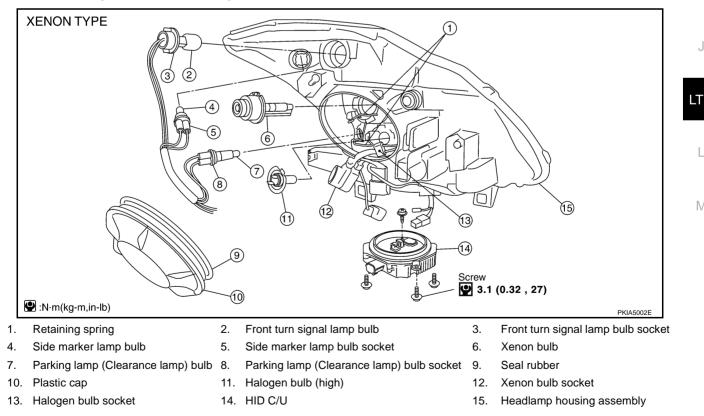
Headlamp mounting bolt:

: 6.1N·m (0.62 kg-m, 54 in lb) U

NOTE:

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

Disassembly and Assembly



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.
- 5. 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:

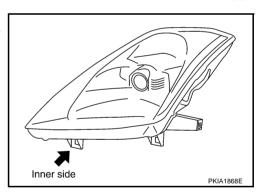
• : 3.1 N·m (0.32 kg-m, 27 in-lb)

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

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.



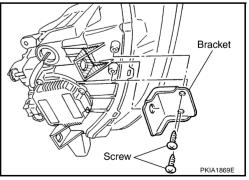
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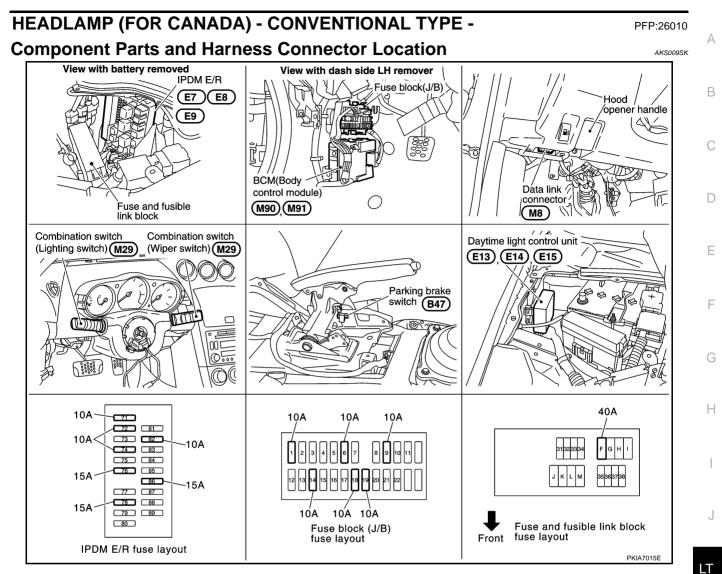
INSTALLATION OF HEADLAMP BRACKET

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

RH headlamp	Innei				
LH headlamp	Inne				

nner side nner side 26040 CD000 26090 CD000





System Description

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)]



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- 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

HEADLAMP (FOR CANADA) - CONVENTIONAL TYPE -

through 10 A fuse [No. 72, located in IPDM E/R]	
through IPDM E/R terminal 27	А
• to daytime light control unit terminal 5.	
Ground is supplied	
 to front combination lamp LH terminal 3 	В
 through daytime light control unit terminal 9 	
 to daytime light control unit terminal 14 	С
 through grounds E17,E43 and F152 	0
 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 combina- tion meter indicator illuminates high beam.	
	E
COMBINATION SWITCH READING FUNCTION	
Refer to BCS-3, "COMBINATION SWITCH READING FUNCTION".	F
EXTERIOR LAMP BATTERY SAVER CONTROL	Г
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.	G
Exterior lamp battery saver control mode can be changed by the 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	Н
 through daytime light control unit terminal 7 	
 to front combination lamp LH terminal 2 	1
	I
 through front combination lamp LH terminal 3 to daytime light control unit terminal 9 	
 through daytime light control unit terminal 6 	J
 to front combination lamp RH terminal 2. 	
Ground is supplied	
 to front combination lamp RH terminal 3 	LT
 through grounds E17, E43 and F152, and 	
 to daytime light control unit terminal 14 	
 through grounds E17, E43 and F152. 	L
Because high beam headlamps are now wired in series, they operate at half illumination.	
If lighting switch is in the 2nd position, daytime light operation is canceled.	M
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HEADLAMP (FOR CANADA) - CONVENTIONAL TYPE -

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.

Engine		With engine stopped										With engine running								
Lighting switch		OFF			1ST			2ND			OFF		1ST			2ND				
		Hi	Lo	Ρ	Hi	Lo	Р	Hi	Lo	Ρ	Hi	Lo	Р	Hi	Lo	Ρ	Hi	Lo	Р	
Head- lamp	High beam	_	_	-	_	-	×	×	-	×	•*	•*	×	•*	•*	×	×	_	×	
	Low beam	_	_	I	_	-	×	×	×	×	_	-	×	_	-	×	×	×	×	
Tail lamp		_	-	-	×	×	×	×	×	×	_	-	-	×	×	×	×	×	×	
License and instru- ment illumination lamp		_	_	_	×	×	×	×	×	×	_	_	_	×	×	×	×	×	×	

- Hi: "HIGH BEAM" position
- Lo: "LOW BEAM" position
- P: "FLASH TO PASS" position
- ×: Lamp "ON"
- –: Lamp "OFF"
- •: Lamp dims. (Added functions)
- *: When starting 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

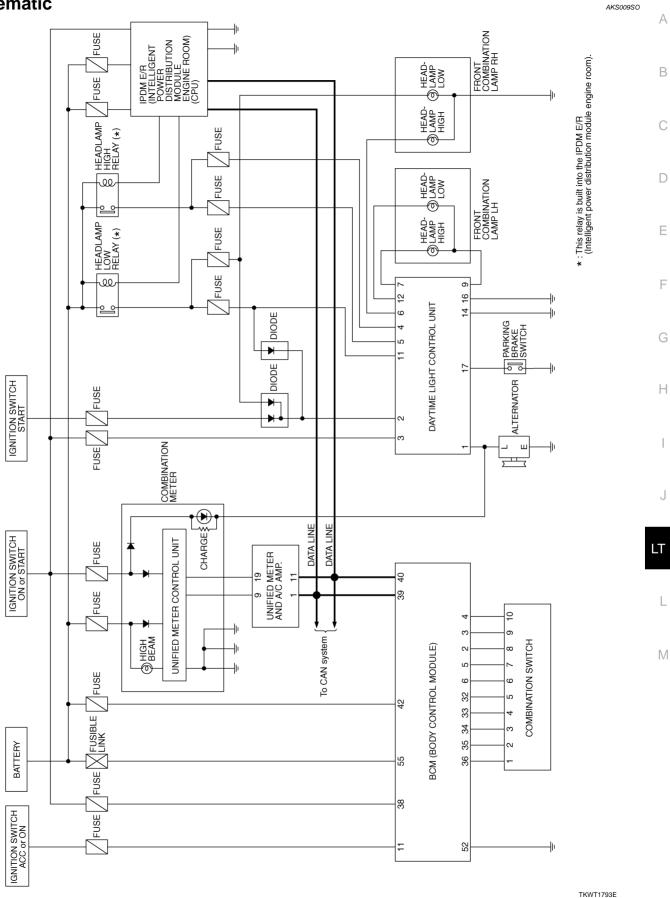
CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information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

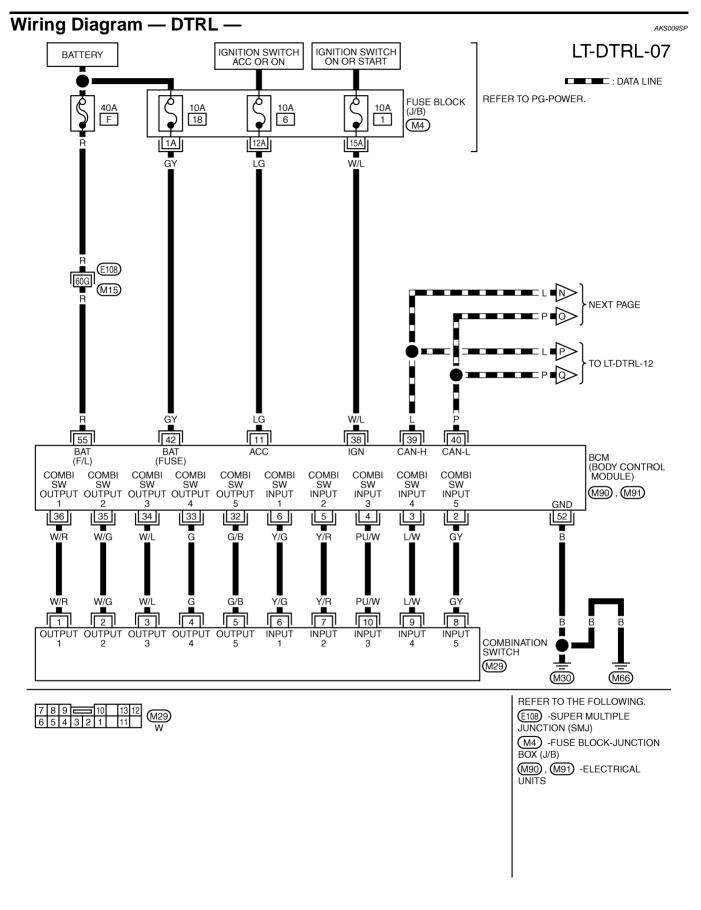
Refer to LAN-5, "CAN Communication Unit" .

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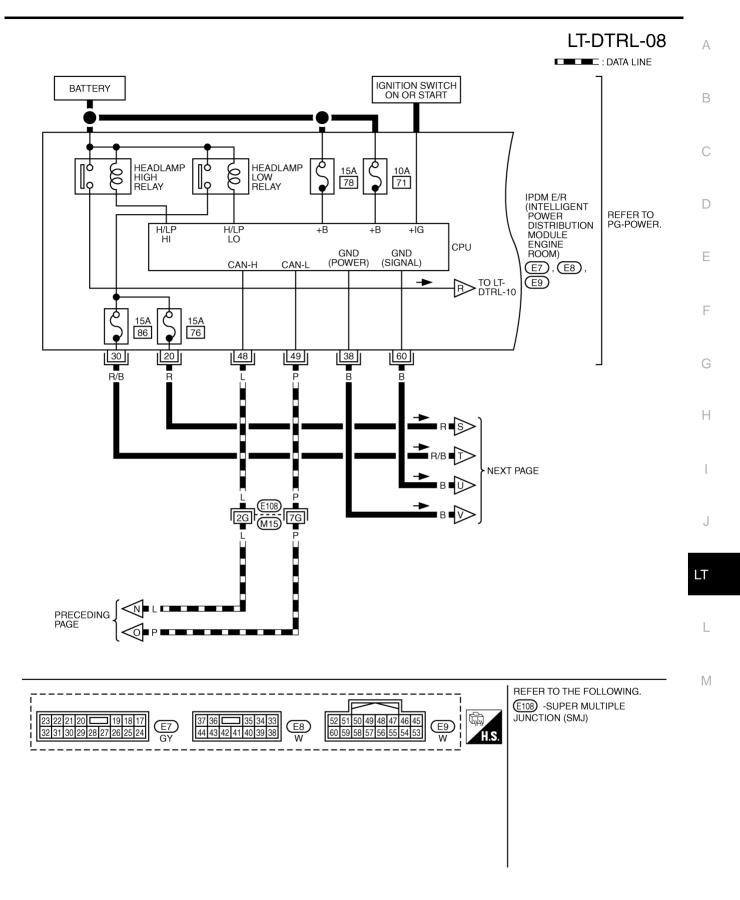
Schematic



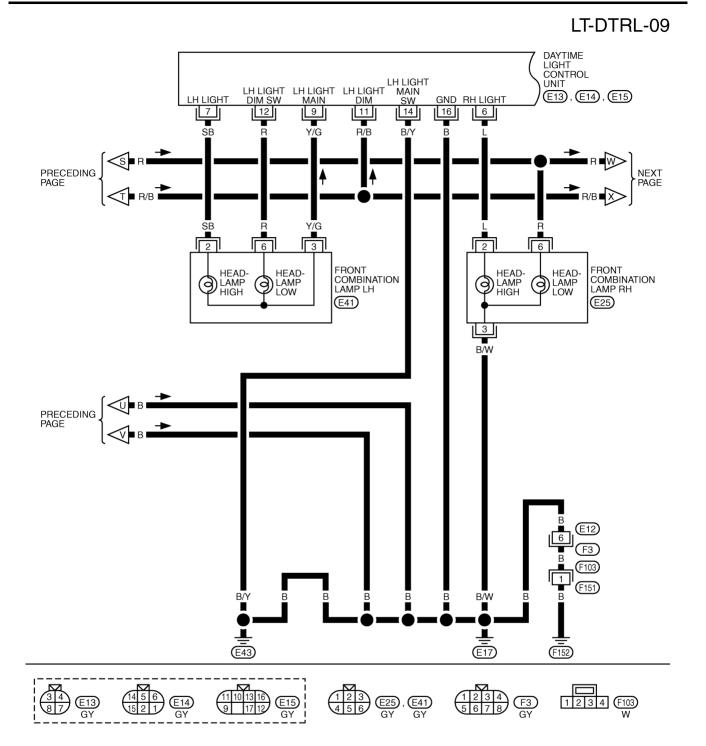
Revision: 2004 December



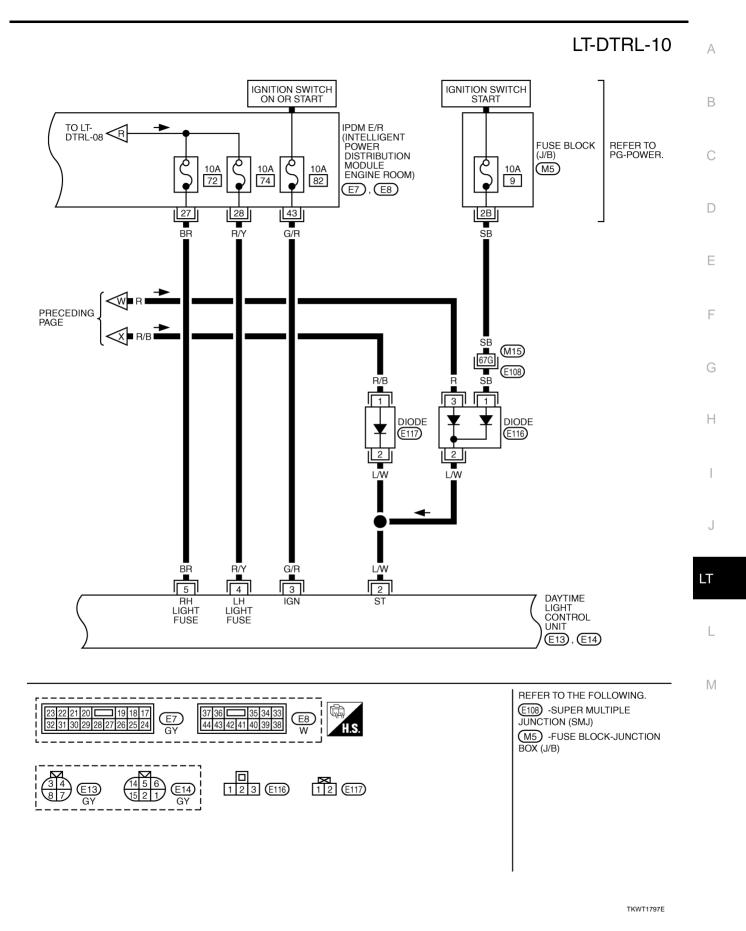
TKWT1794E



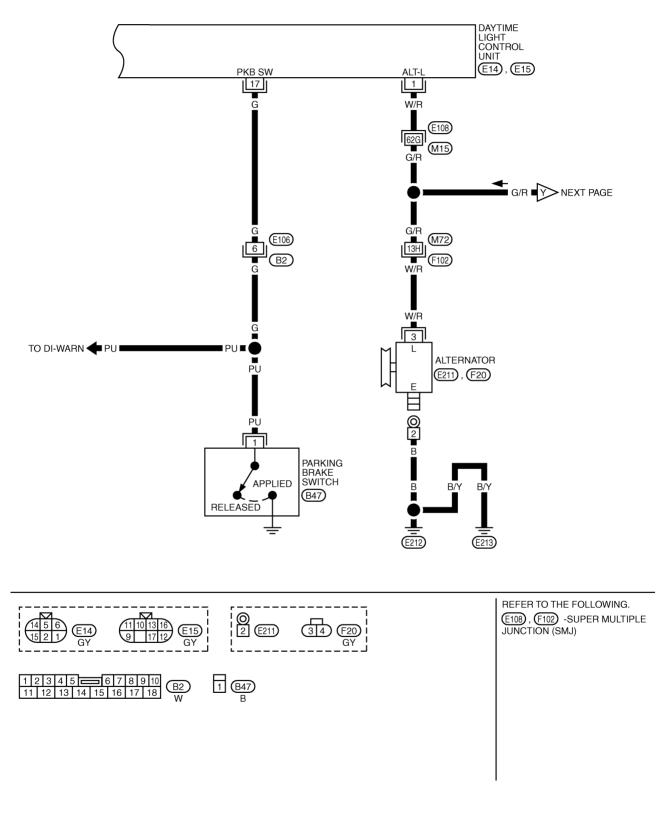
TKWT1795E



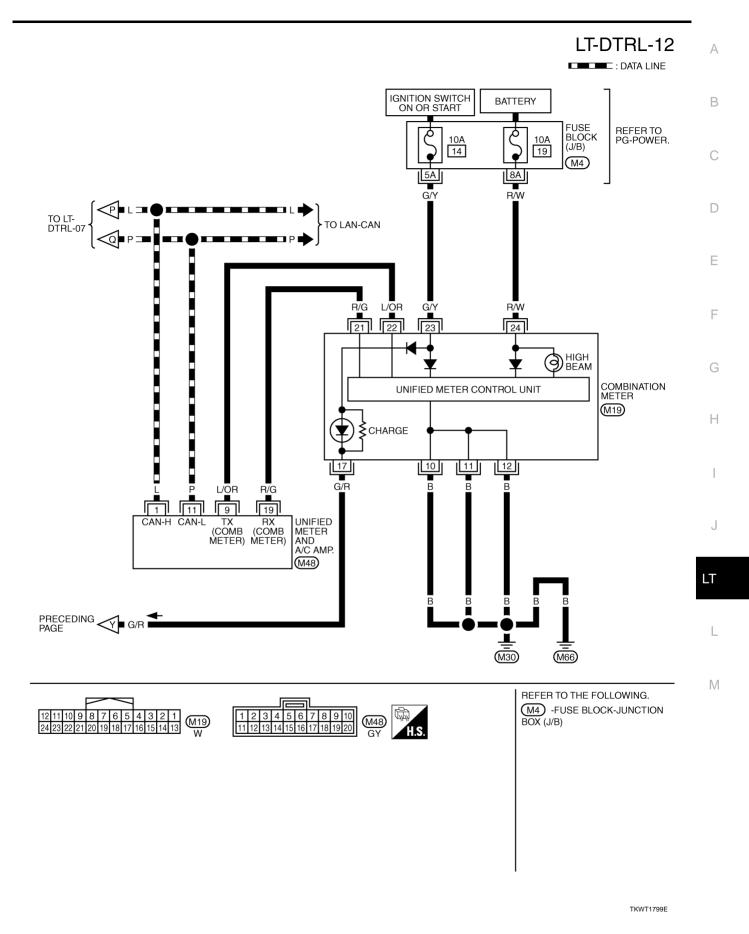
TKWT1796E



LT-DTRL-11



TKWT1798E



Terminals and Reference Values for BCM

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Townsin of	14/5-2-2			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) 4 2 0 • • 5ms SKIA5292E
4	PU/W	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 •••5ms SKIA5291E
5	Y/R	Combination switch input 2			00
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
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) 4 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

Tarminal	14/100			Measuring condition	
Terminal No.	Wire color	Signal name	Ignition switch	Operation or condition	Reference value
35	W/G	Combination switch output 2			
36	W/R	Combination switch output 1	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 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

		Measuring condition			Wire	Ferminal
Reference value	Operation or condition		Ignition switch	Signal name	color	No.
 Approx. 0V	OFF	Lighting switch 2ND	ON	Headlamp low (RH)	R	20
 Battery voltage	ON	position	ON		ĸ	20
 Approx. 0V	OFF	Lighting switch HIGH	ON	Llaadlama hish (DLI)	DD	27
 Battery voltage	ON	or PASS position	ON	Headlamp high (RH)	BR	21
 Approx. 0V	OFF	Lighting switch HIGH	ON		DA	00
 Battery voltage	ON	or PASS position	UN	Headlamp high (LH)	R/Y	28
 Approx. 0V	OFF	Lighting switch 2ND	ON		R/B	30
Battery voltage	ON	position	ON	Headlamp low (LH)	R/B	30
 Approx. 0V			ON	Ground	В	38
Battery voltage		_	ON	Ignition power supply	G/R	43
 —			—	CAN– H	L	48
 _			_	CAN– L	Р	49
 Approx. 0V		_	ON	Ground	В	60

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Terminals and Reference Value for Daytime Light Control Unit

AKS009SQ

Terminal No.	Wire color	ltem	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/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	_	—
17	G	Parking brake switch	When parking brake is released	Battery voltage
.,	0	I arking brake switch	When parking brake is applied	Approx. 0V

How to Proceed with Trouble Diagnosis

AKS009SR

- 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

1. CHECK FUSES

Check for blown fuses.

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

OK or NG

NG

OK >> GO TO 2.

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

2. CHECK POWER SUPPLY CIRCUIT

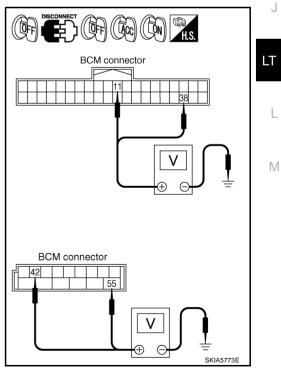
- 1. Turn ignition switch OFF.
- 2. Disconnect BCM connectors.
- 3. Check voltage between BCM harness connector and ground.

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



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3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

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

OK or NG

OK >> INSPECTION END

NG >> Check ground circuit harness.

CONSULT-II Functions (BCM)

CONSULT-II performs the followings communicating with BCM.

BCM connector	

AKS00ABR

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 of transmit/receive diagnosis of CAN communication can be read.

CONSULT-II BASIC OPERATION

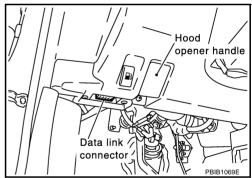
CAUTION:

2.

BCM diagnosis part

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 1. CONVERTER to data link connector, then turn ignition switch ON.



CONSULT- II				
	ENG			
START	(NISSAN			
START (RENAULT BASED VHCL)				
SUB MODE				
		LIGHT	COPY	SKIA3098E

Touch "START(NISSAN BASED VHCL)".

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

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

	SELECT SYSTEM		
	ENGINE		A
	A/T		
	ABS		
	AIR BAG		В
	IPDM E/R		
	BCM		C
-			0
-	BACK LIGHT COPY	PKIA4849E	
			D
[SELECT TEST ITEM		
	HEAD LAMP		
	WIPER		E
	FLASHER		
	AIR CONDITIONER		
	COMB SW		F
	IMMU		
-			
	Page Up Page Down		0
	BACK LIGHT COPY	PKIA6100E	G
		FRIADIOUE	

WORK SUPPORT

Operation Procedure

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

4. 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	
BATTERY SAVER SET	Exterior lamp battery saver control mode can be changed in this mode.	ON	×	L
	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 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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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 light- ing switch signal.
HEAD LAMP SW 2	"ON/OFF"	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from light- ing 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 - RL ^{NOTE}	"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)

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.	В
ACTIVE TEST	The IPDM E/R sends a drive signal to electronic components to check their operation.	

CONSULT-II BASIC OPERATION

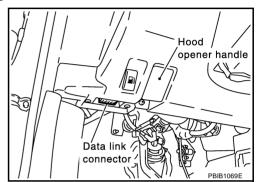
CAUTION:

3.

Circuit".

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.



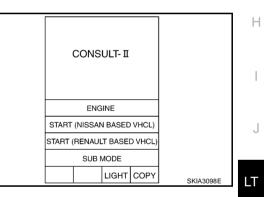
С

D

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F

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



- SELECT SYSTEM

 ENGINE

 A/T

 ABS

 AIR BAG

 IPDM E/R

 BCM

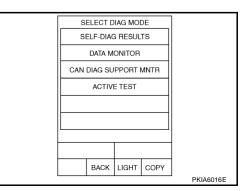
 BACK

 PKIA4849E
- 4. Select the desired part to be diagnosed on "SELECT DIAG MODE" screen.

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)



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	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	С
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).	D

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.

3 (G/R) – Ground : Battery voltage should exist.

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

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

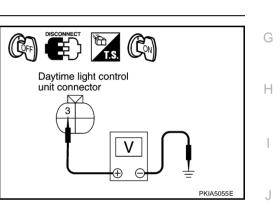
14 (B/Y) - Ground : Continuity should exist.

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.



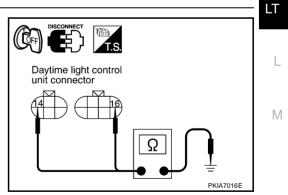
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$\overline{\mathbf{3}}$. CHECK PARKING BRAKE SWITCH CIRCUIT

- 1. Turn ignition switch OFF.
- 2. 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

- 1. Connect daytime light control unit connector and parking brake switch connector.
- 2. Turn ignition switch ON.
- 3. 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.
- 3. 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

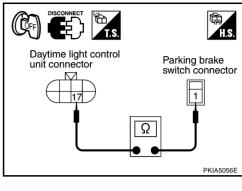
- 1. Turn ignition switch OFF.
- 2. Disconnect daytime light control unit connector and front combination lamp RH connector.
- 3. Check harness continuity between daytime light control unit harness connector E14 terminal 6 (L) and front combination lamp RH harness connector E25 terminal 2 (L).

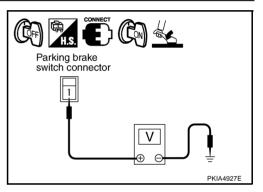
6 (L) – 2 (L)

: Continuity should exist.

OK or NG

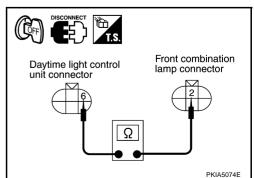
- OK >> Replace daytime light control unit.
- NG >> Repair harness or connector.





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Daytime light control unit connector



PKIA6010E

Headlamp High Beam Does Not Illuminate (Both Sides)

1. CHECK COMBINATION SWITCH INPUT SIGNAL

(P)With CONSULT-II В Select "BCM" on CONSULT-II. With "HEAD LAMP" data monitor. DATA MONITOR make sure "HI BEAM SW" turns ON-OFF linked with operation of NO DTC MONITOR liahtina switch. HI BEAM SW ON 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. MODE BACK LIGHT COPY F NG >> Check lighting switch. Refer to LT-170, "Combination PKIA6324E Switch Inspection".

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" .
- 2. 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.		DATA M MONITOR	ONITOR	
2. Make sure "HL LO REQ" and "HL HI REQ" turns ON when light- ing switch is in HIGH BEAM position.			HL LO REQ HL HI REQ	ON ON	
	When lighting switch is: HL LO REQ ONHIGH BEAM position: HL HI REQ ON				
OK or	NG				
OK	>> Replace IPDM E/R.			Page Down	
NG	>> Replace BCM. Refer to <u>BCS-17, "Removal and Installa-</u>			RECORD	
NO	tion of BCM"		MODE BACK	LIGHT COPY	SKIA5775E

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ACTIVE TEST

MODE BACK LIGHT COPY

OFF

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FOG

SKIA5774E

LAMPS

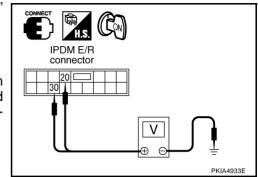
LO

4. CHECK HEADLAMP INPUT SIGNAL

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.
- 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)	(-)	
E13	20 (R)	Ground	Pottony voltago
LIJ	30 (R/B)	Ground	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
Terminal (Wire color)	(-)	
20 (R)	Ground	Battery voltage
30 (R/B)	Giouna	Ballery Vollage
	(+) Terminal (Wire color) 20 (R)	(+) Terminal (Wire color) 20 (R) Ground

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).

28 (R/Y) - 4 (R/Y)

: Continuity should exist.

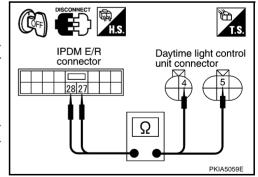
4. Check harness continuity IPDM E/R harness connector E7 terminal 27 (BR) daytime light control unit harness connector E14 terminal 5 (BR).

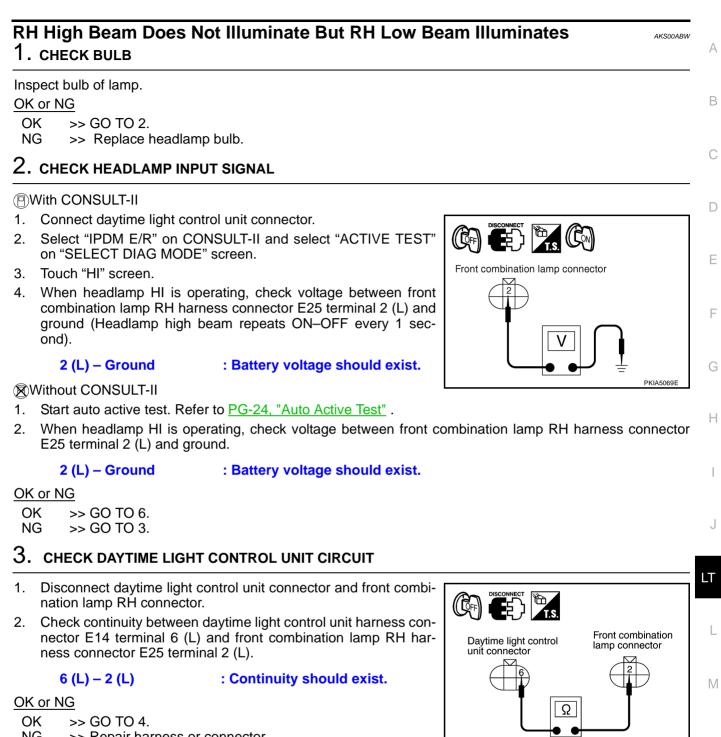
27 (BR) – 5 (BR)

: Continuity should exist.

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Repair harness or connector.





NG >> Repair harness or connector.

PKIA5074E

4. CHECK DAYTIME LIGHT CONTROL UNIT INPUT SIGNAL

With CONSULT-II

- 1. 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

- 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 E14 terminal 5 (BR) and ground.

E j

IPDM E/R

connector

27

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).

27 (BR) – 5 (BR)

: 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.

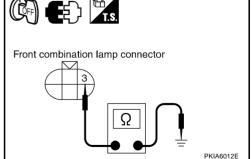
3 (B/W) - Ground

: Continuity should exist.

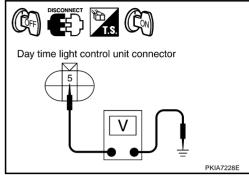
OK or NG

OK >> Check headlamp harness and connector.

NG >> Repair harness or connector.

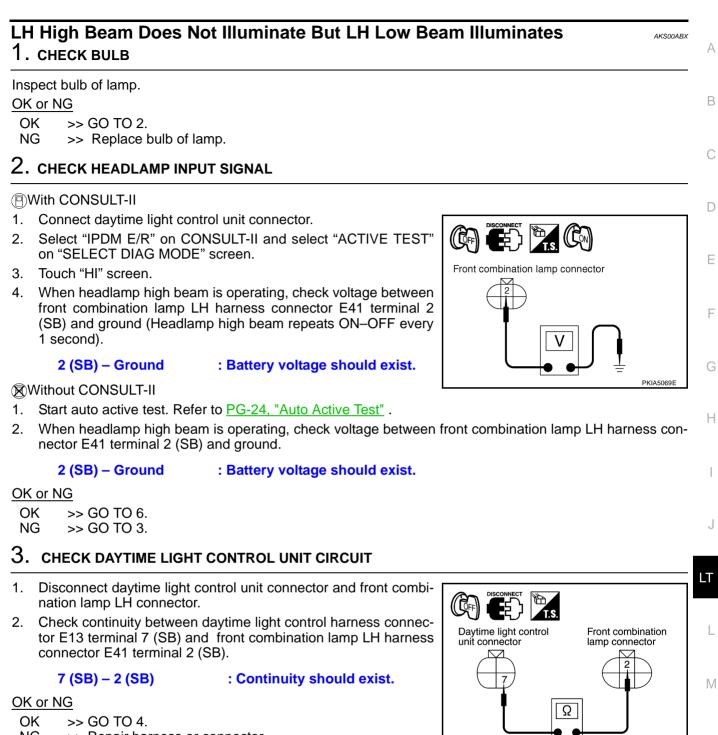


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Daytime light control

unit connector



NG >> Repair harness or connector.

PKIA5075E

4. CHECK DAYTIME LIGHT CONTROL UNIT INPUT SIGNAL

BWith CONSULT-II

- 1. 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

Without CONSULT-II

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

: Battery voltage should exist.

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.
- 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.

6. CHECK DAYTIME LIGHT CONTROL UNIT CIRCUIT

- 1. Disconnect daytime light control unit connector.
- 2. 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).

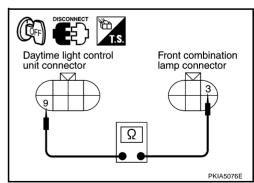
9 (Y/G) – 3 (Y/G)

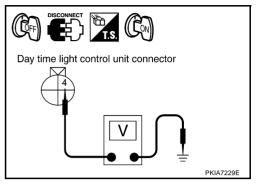
: Continuity should exist.

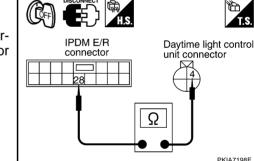
OK or NG

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.	Daytime light control unit connector
Headlamp Low Beam Does Not Illuminate (Both Si 1. CHECK COMBINATION SWITCH INPUT SIGNAL	ides) AKSOOATB
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 position : HEAD LAMP SW 1 ON : HEAD LAMP SW 2 ON	DATA MONITORMONITORNO DTCHEAD LAMP SW1ONHEAD LAMP SW2ON
 Without CONSULT-II Refer to <u>LT-170, "Combination Switch Inspection"</u>. OK or NG OK >> GO TO 2. NG >> Check lighting switch. Refer to <u>LT-170, "Combination Switch Inspection"</u>. 	MODE BACK LIGHT COPY PKIA6325E
2. HEADLAMP ACTIVE TEST	
 With CONSULT-II Select "IPDM E/R" on CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen. Select "LAMPS" on "SELECT TEST" ITEM screen. Touch "LO" screen. Make sure headlamp low beam operation. 	ACTIVE TEST LAMPS OFF
Headlamp low beam should operate.	н
Without CONSULT-II 1. Start auto active test. Refer to <u>PG-24, "Auto Active Test"</u> .	LO FOG

Make sure headlamp low beam operation.

Headlamp low beam should operate.

OK or NG

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

SKIA5774E

MODE BACK LIGHT COPY

3. CHECK IPDM E/R

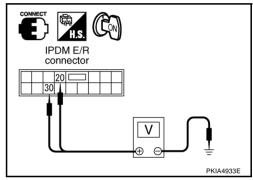
Select "IPDM E/R" on CONSULT-II, and select "DATA MONI-1. DATA MONITOR TOR" on "SELECT DIAG MODE" screen. MONITOR HL LO REQ ON Make sure "HL LO REQ" turns ON when lighting switch is in 2. 2ND position. When lighting switch is 2ND position : HL LO REQ ON OK or NG OK >> Replace IPDM E/R. Page Down NG >> Replace BCM. Refer to BCS-17, "Removal and Installa-RECORD tion of BCM" . MODE BACK LIGHT COPY SKIA5780E

4. CHECK IPDM E/R SIGNAL

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. 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)		



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

AKS009SZ

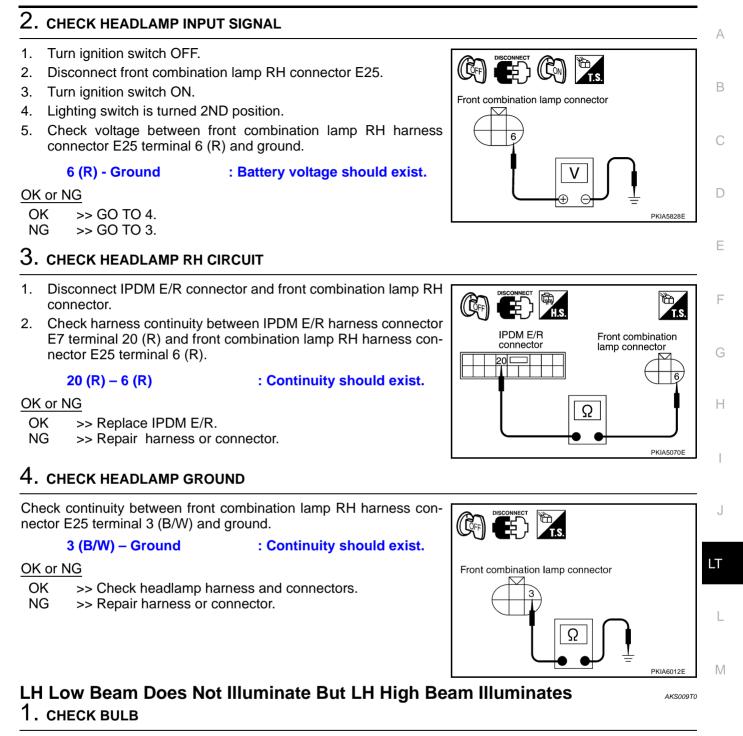
1. CHECK BULB

Check bulb of lamp.

OK or NG

OK >> GO TO 2.

NG >> Replace headlamp bulb.



Check bulb of lamp.

OK or NG

OK >> GO TO 2.

NG >> Replace bulb of lamp.

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.
- Check voltage between front combination lamp LH harness con-5. nector E41 terminal 6 (R) and ground.

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

OK or NG

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

$3.\,$ CHECK DAYTIME LIGHT CONTROL UNIT CIRCUIT

- Disconnect daytime light control unit connector and front combi-1. nation lamp LH connector.
- 2. 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.
- 2 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 daytime light control unit harness connector E15 terminal 11 (R/B) and ground.

11 (R/B) – Ground

: Battery voltage should exist.

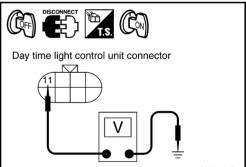
Without CONSULT-II

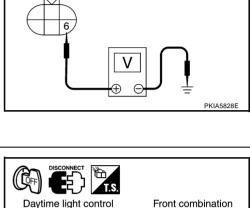
- Start auto active test. Refer to PG-24, "Auto Active Test" . 1.
- 2. When headlamp LO is operating, check voltage between daytime light control unit harness connector E15 terminal 11 (R/B) and ground.

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

OK or NG

- OK >> Replace daytime light control unit.
- NG >> GO TO 6.





Ω

lamp connector

PKIA5071E

Front combination lamp connector

unit connector

PKIA7230E

((67)

E)

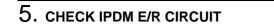
IPDM E/R connector

Daytime light control

unit connector

HS

Ω



- 1. Turn ignition switch OFF.
- 2. Disconnect IPDM E/R connector.
- 3. 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)



OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness or connector.

6. CHECK DAYTIME LIGHT CONTROL UNIT CIRCUIT

- 1. 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.

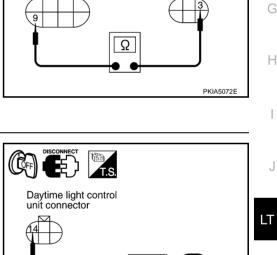
14 (B/Y) – Ground

: Continuity should exist.

OK or NG

OK >> Replace daytime light control unit.

NG >> Repair harness or connector.



Ω

А

В

С

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F

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PKIA7231E

Day time light control

Front combination

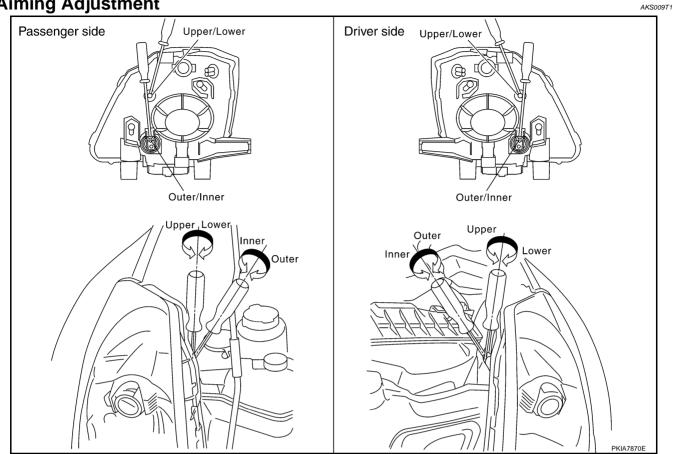
lamp connector

unit connector

PKIA7804E

Μ

Aiming Adjustment



PREPARATION BEFORE ADJUSTING

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

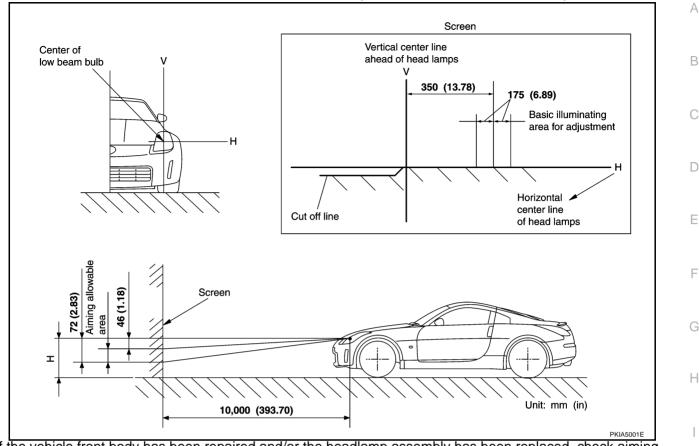
Before performing aiming adjustment, check the following.

- 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

- Turn headlamp low beam on. 1.
- 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

- 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 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.

LT-139

J

LT

Μ

AKS009T2

- 2. Remove fender protector (front). Refer to <u>EI-21, "FENDER PROTECTOR"</u> 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

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

: 12V - 21W

FRONT SIDE MARKER LAMP

1. Turn lighting switch OFF.

CAUTION:

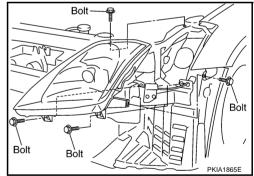
- 2. Remove fender protector (front). Refer to EI-21, "FENDER PROTECTOR" in "EI" section.
- 3. Turn bulb socket counterclockwise and unlock it.
- 4. Remove bulb from its socket.
- 5. Install in the reverse order of removal.
 - Front side marker lamp : 12V 5W

CAUTION:

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

Removal and Installation

- 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" .

AKS009T3

Disassembly and Assembly AKS009T4 А HALOGEN TYPE (2 В 6 F $(\mathbf{1})$ (12) (13) F PKIA7236F Retaining spring Front turn signal lamp bulb Front turn signal lamp bulb socket 1. 2. 3. 4. Side marker lamp bulb 5. Side marker lamp bulb socket 6. Halogen bulb (low) 7. Halogen bulb socket 8. Clearance lamp bulb socket 9. Seal rubber Н 10. Plastic cap 11. Halogen bulb (high) 12 Halogen bulb socket (low) 13. Halogen bulb socket (high) 14. Headlamp housing assembly DISASSEMBLY 1. Turn plastic cap counterclockwise and unlock it. 2. Disconnect bulb socket (low). 3. Unlock retaining spring, and remove halogen bulb (low). J 4. Disconnect the socket connected to halogen bulb (high). 5. Unlock retaining spring, and remove halogen bulb (high). LT 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. L 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. Μ 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.

Revision: 2004 December

HEADLAMP (FOR CANADA) - CONVENTIONAL TYPE -

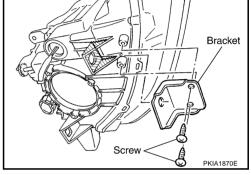
Servicing to Replace Headlamps When Damaged

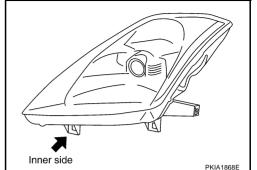
If only installation part as shown in the figure is damaged, and headlamp housing itself is not damaged, repair can be completed easily by installing correction brackets.

INSTALLATION OF HEADLAMP BRACKET

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

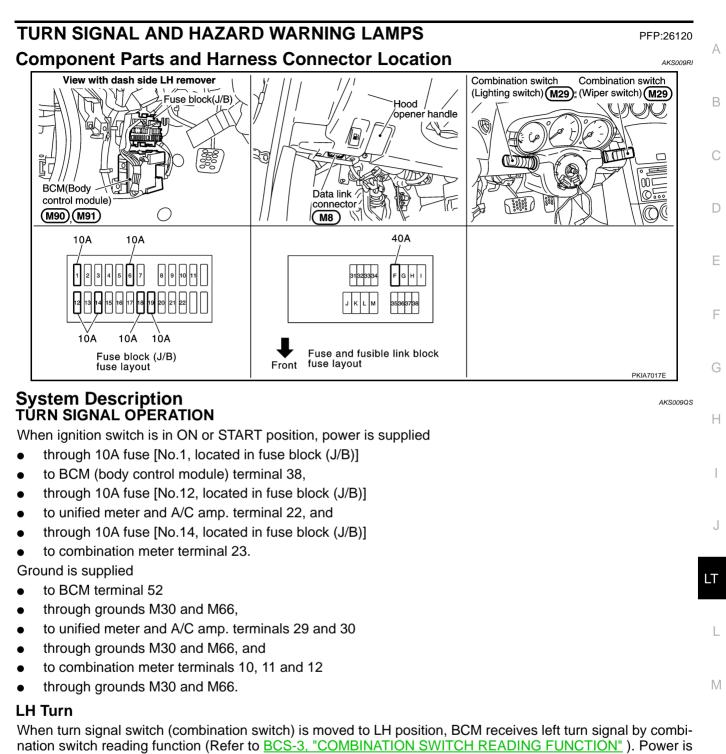
RH headlamp	Inner side	26040 CD000
LH headlamp	Inner side	26090 CD000





AKS009T6

TURN SIGNAL AND HAZARD WARNING LAMPS



- suppliedthrough 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. 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

 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	ŀ
 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} 	E
 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.	
NOTE:	
*1: Xenon headlamp, *2: Halogen headlamp.	
REMOTE KEYLESS ENTRY SYSTEM OPERATION	E
Power is supplied at all times	
 through 40A fusible link [letter F, located in fuse and fusible link block] 	F
 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	Lī
 through BCM terminal 45 	
 to front combination lamp LH terminal 2^{*1} 	
 to front combination lamp LH terminal 1^{*2} 	l
• to rear combination lamp LH terminal 2	
 through BCM terminal 46 	ľ
 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 none combination lamp KH terminal 4 through grounds E17, E43 and F152 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.	

LT-145

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

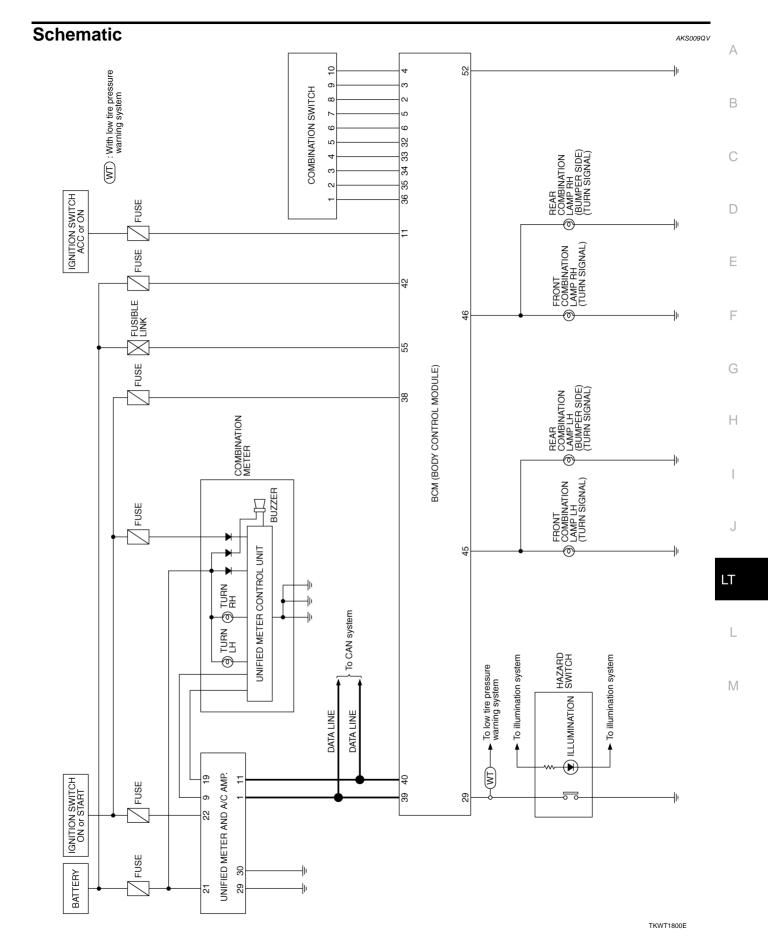
CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information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

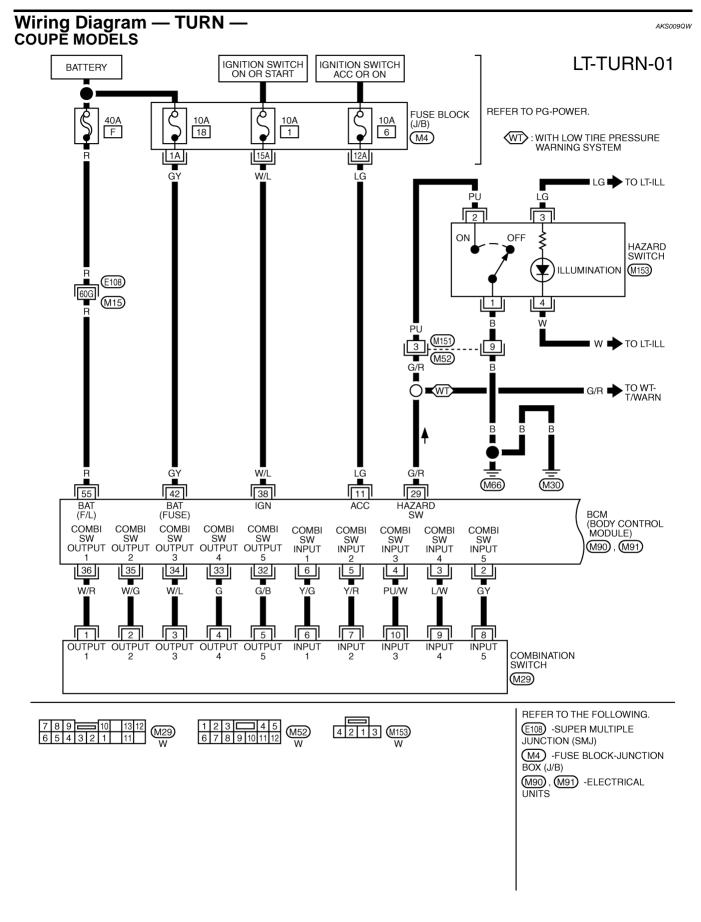
CAN Communication Unit

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

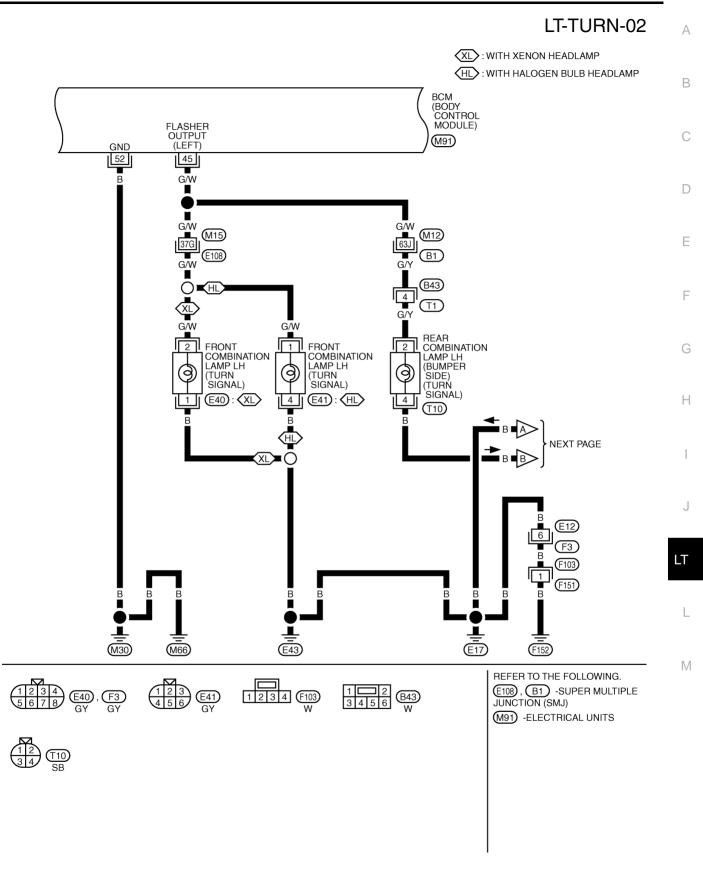
AKS009QT

AKS009QU

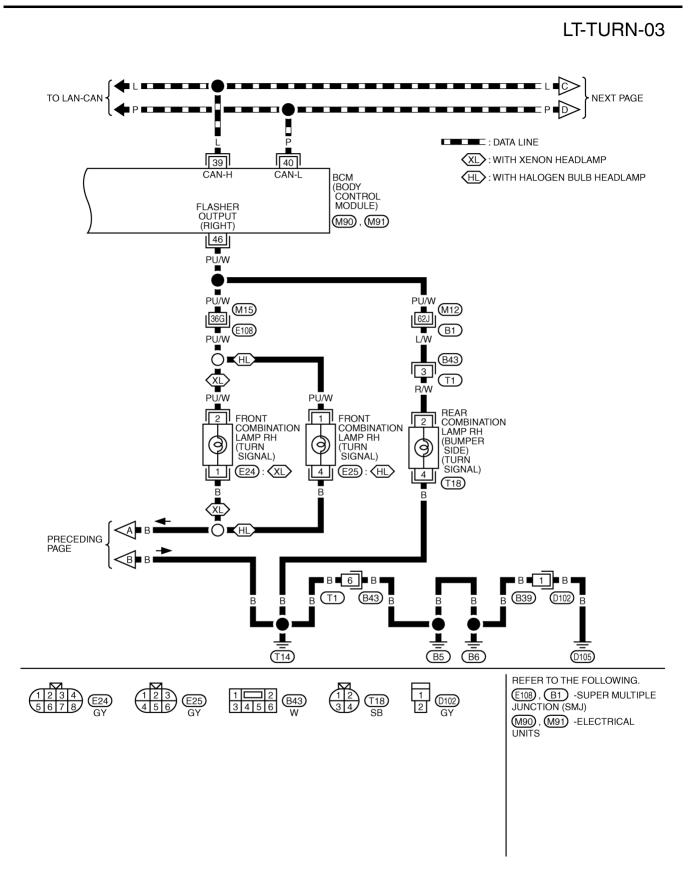




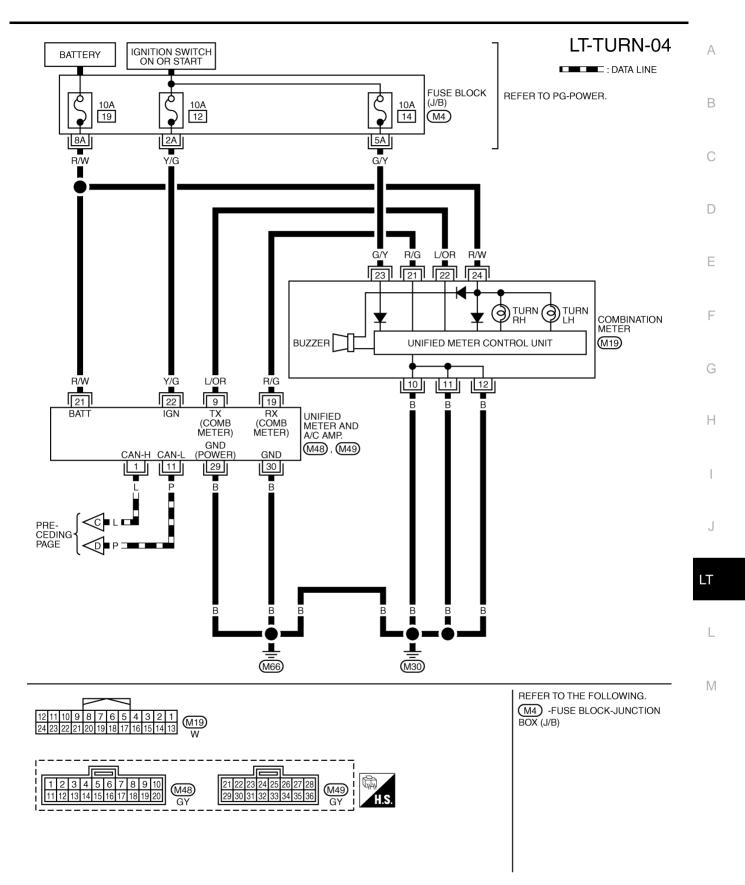
TKWT1801E



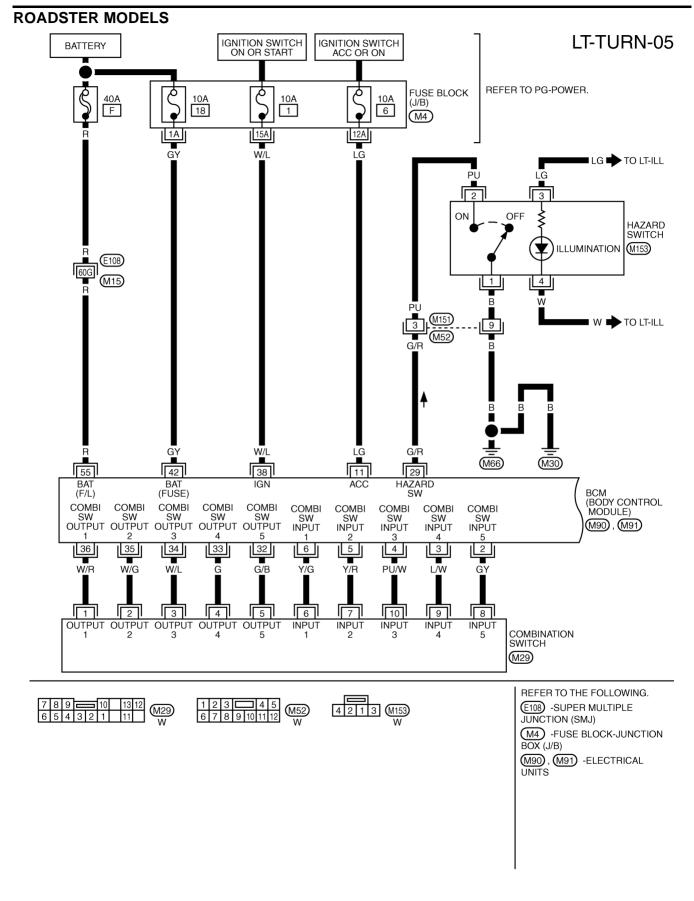
TKWT1802E



TKWT1803E



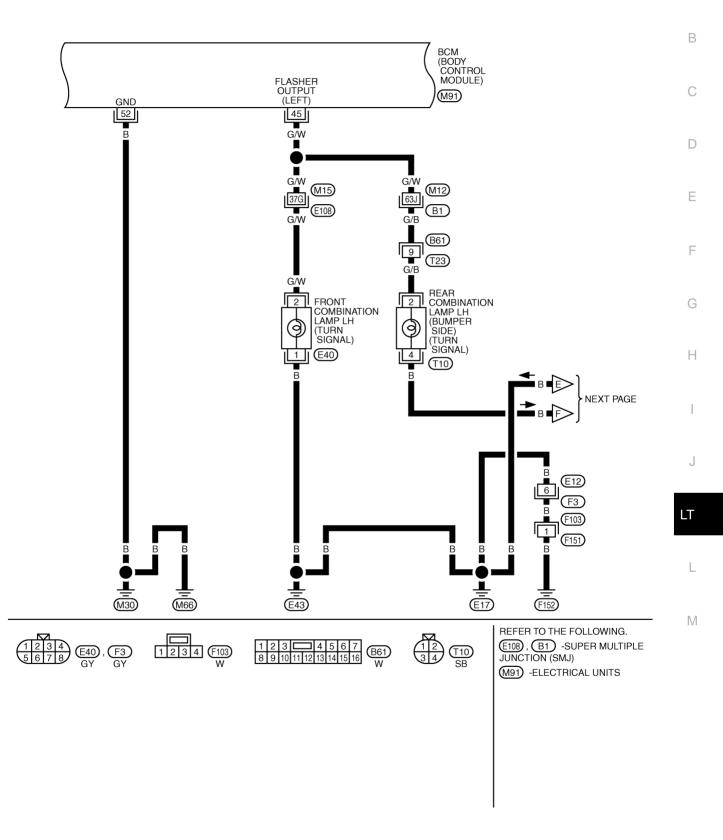
TKWT1732E



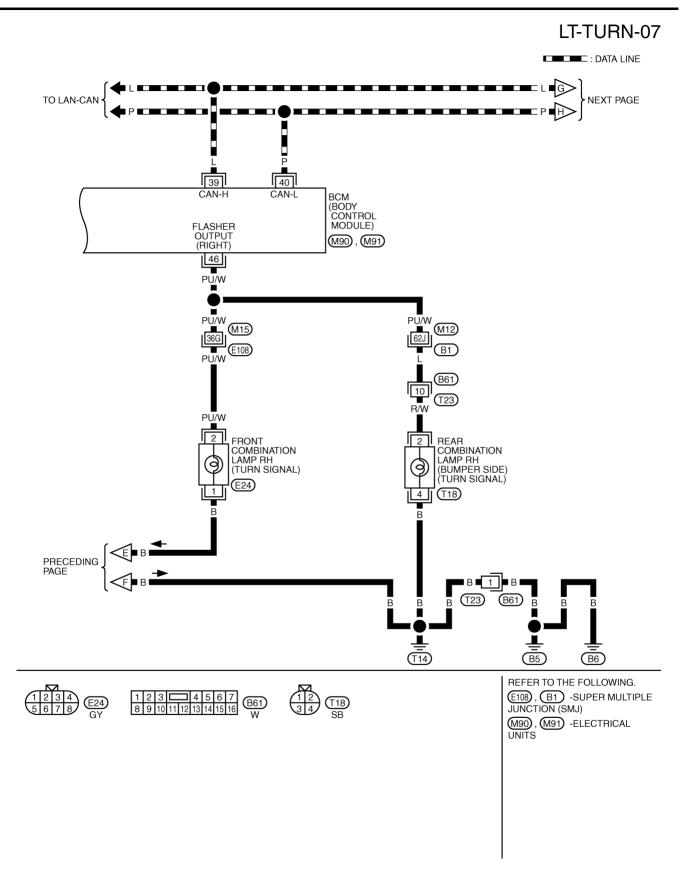
TKWT1805E

LT-TURN-06

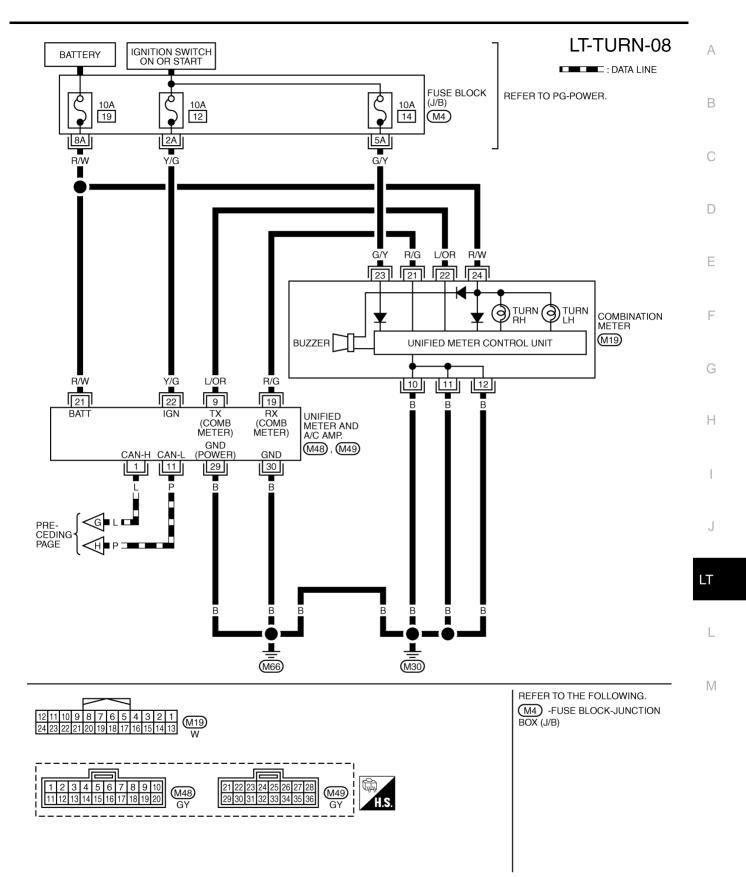
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TKWT1806E



TKWT1807E



TKWT1600E

Terminals and Reference Values for BCM

Terminal	Wire			Measuring c	ondition	
No.	color	Signal name	Ignition switch	Operatio	on or condition	Reference value
2	GY	Combination switch input 5	ON	Lighting, turi Wiper dial p	n, wiper OFF osition 4	(V) 6 4 2 0 •••5ms SKIA5291E
3	L/W	Combination switch input 4	ON	Lighting, turi Wiper dial p	n, wiper OFF osition 4	(V) 4 2 0 * * 5ms SKIA5292E
4	PU/W	Combination switch input 3	ON	Lighting, tur Wiper dial p	n, wiper OFF osition 4	(V) 6 4 0 0 •••5ms SKIA5291E
5	Y/R	Combination switch input 2				0.0
6	Y/G	Combination switch input 1	ON	Lighting, turi Wiper dial p	n, wiper OFF osition 4	(V) 4 2 0 **5ms SKIA5292E
11	LG	Ignition switch (ACC)	ACC		—	Battery voltage
29	G/R	Hazard switch signal	OFF	Hazard switch	ON OFF	Approx. 0V Approx. 5V
32	G/B	Combination switch output 5	ON	Lighting, tur Wiper dial p	n, wiper OFF osition 4	(V) 6 4 2 0 •••5ms SKIA5291E
33	G	Combination switch output 4	ON	Lighting, turi Wiper dial p	n, wiper OFF osition 4	(V) 4 2 0 * 5ms SKIA5292E

AKS009QX

Terminal	Wire			Measuring c	ondition	
No.	color	Signal name	Ignition switch	Ignition Operation 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 SKIA5291E
35	W/G	Combination switch output 2				
36	W/R	Combination switch output 1	ON	Lighting, turn, wiper OFF Wiper dial position 4		(V) 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
45	G/W	Turn signal (left)	ON	Combina- tion switch	Turn left ON	(V) 15 10 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 5 0 5 5 5 5 5 5 5 5 5 5 5 5 5
46	PU/W	Turn signal (right)	ON	Combina- tion switch	Turn right ON	(V) 15 10 5 0 5 5 5 5 5 5 5 5 5 5 5 5 5
52	В	Ground	ON		—	Approx. 0V
55	R	Battery power supply	OFF		_	Battery voltage

How to Proceed With Trouble Diagnosis

- 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

AKS009QY

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.
	Detter	F
BCM	Battery	18
DCIVI	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
Combination motor	Battery	19
Combination meter	Ignition switch ON or START position	14
Linifie dimension and A/O amon	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

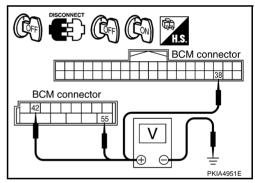
OK >> GO TO 2.

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

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	
	(+)			
Connector	Terminal (Wire color)	(-)	OFF	ON
M90	38 (W/L)		0V	Battery voltage
M91	42 (GY)	Ground	Battery voltage	Battery voltage
IVI91	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

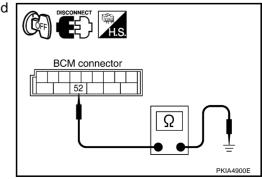
Check continuity between BCM harness connector terminal and ground.

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

OK or NG

OK >> INSPECTION END

NG >> Check ground circuit harness.



CONSULT-II Functions

CONSULT-II performs the following functions communicating with BCM.

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

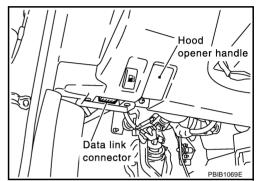
CONSULT-II BASIC OPERATION

CAUTION:

3.

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.



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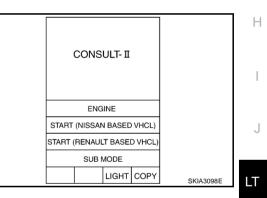
С

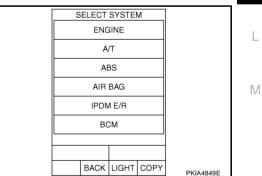
D

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F

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



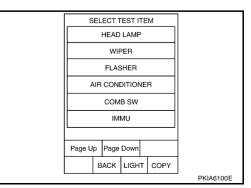


4. Touch "FLASHER" on "SELECT TEST ITEM" screen.

Touch "BCM" on "SELECT SYSTEM" screen.

Connector (DLC) Circuit" .

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



DATA MONITOR

Operation Procedure

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

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.

AKS00AP2

2. CHECK COMBINATION SWITCH INPUT SIGNAL (P)With CONSULT-II Select "BCM" on CONSULT-II. With "FLASHER" data monitor, make DATA MONITOR sure "TURN SIGNAL R" and "TURN SIGNAL L" turns ON-OFF В MONITOR NO DTC linked with operation of lighting switch. TURN SIGNAL R ON TURN SIGNAL L ON When lighting switch is : TURN SIGNAL R ON **TURN RH position** When lighting switch is : TURN SIGNAL L ON **TURN LH position** Without CONSULT-II Refer to LT-170, "Combination Switch Inspection". MODE BACK LIGHT COPY PKIA6351E OK or NG F OK >> GO TO 3. NG >> Check lighting switch. Refer to LT-170, "Combination Switch Inspection". 3. ACTIVE TEST F (P)With CONSULT-II 1. Select "FLASHER" during active test. Refer to LT-160, "ACTIVE ACTIVE TEST TEST". OFF FLASHER Make sure "FLASHER RIGHT" and "FLASHER LEFT" operate. 2 Н Turn signal lamp should operate. Without CONSULT-II ĞO TO 4. OK or NG ВH LH OFF OK >> Replace BCM. Refer to BCS-17, "Removal and Installation of BCM". MODE BACK LIGHT COPY PKIA6352F NG >> GO TO 4. CHECK SHORT CIRCUIT LT 1. Turn ignition switch OFF. Disconnect BCM connector and all turn signal lamp connectors. ĘΣ 2. 3. Check continuity (short circuit) between harness connector of BCM connector BCM and ground. 4546 Terminals Μ BCM Continuity Connector Terminal (Wire color) Ground RH 46 (PU/W) M91 No LH 45 (G/W) PKIA5832

OK or NG

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

NG >> Repair harness or connector.

Hazard Warning Lamp Does Not Operate But Turn Signal Lamp Operate 1. CHECK BULB

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

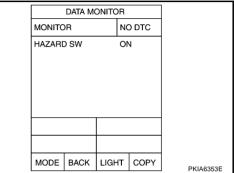
OK or NG

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

2. CHECK HAZARD SWITCH INPUT SIGNAL

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

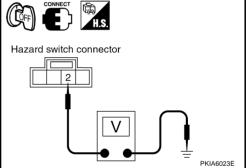


AKS00AP3

Without CONSULT-II

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

	Terminals				
(+)		Condition	Voltage	
Connector	Terminal (Wire color)	(-)			
M153		Ground	Hazard switch is ON	Approx. 0V	
101100	2 (PU)	Giouna	Hazard switch is OFF	Approx. 5V	



OK or NG

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

NG >> GO TO 3.

3. CHECK HAZARD SWITCH CIRCUIT

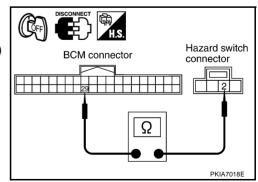
- 1. Turn ignition switch OFF.
- 2. Disconnect BCM connector and hazard switch connector.
- Check continuity BCM harness connector M90 terminal 29 (G/R) and hazard switch harness connector M153 terminal 2 (PU).

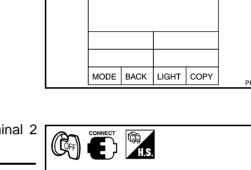
29 (G/R) – 2 (PU)

: Continuity should exist.

OK or NG

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





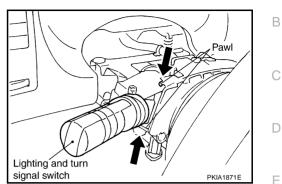
4. CHECK GROUND А Check continuity hazard switch harness connector M153 terminal 1 (B) and ground. В 1 (B) – Ground : Continuity should exist. Hazard switch connector OK or NG OK >> GO TO 5. 1 NG >> Repair harness or connector. Ω D SKIA8972E 5. CHECK HAZARD SWITCH F 1. Disconnect hazard switch connector. 2. Check continuity hazard switch. F Hazard switch Terminal Condition Continuity 1 2 Hazard switch Hazard switch is ON. Yes 1 2 Hazard switch is OFF. No Ω OK or NG Н OK >> Replace BCM if turn signal lamps does not work after PKIA4601E setting the connector again. Refer to BCS-17, "Removal and Installation of BCM" NG >> Replace hazard switch. Turn Signal Indicator Lamp Does Not Operate AKS00AP4 1. CHECK BULB Inspect bulb of turn signal indicator lamp in combination meter. LT OK or NG OK >> Replace combination meter. >> Replace indicator bulb. NG Μ

Bulb Replacement (Front Turn Signal Lamp)	AKS00AP5
Refer to LT-34, "Bulb Replacement" in "HEADLAMP (FOR USA)".	
Bulb Replacement (Rear Turn Signal Lamp)	AKS00AP6
Refer to LT-205, "Bulb Replacement" in "REAR COMBINATION LAMP".	
Removal and Installation of Front Turn Signal Lamp	AKS00AP7
Refer to LT-36, "Removal and Installation" in "HEADLAMP (FOR USA)".	
Removal and Installation of Rear Turn Signal Lamp	AKS00AP8
Refer to LT-206, "Removal and Installation" in "REAR COMBINATION LAMP".	

LIGHTING AND TURN SIGNAL SWITCH

Removal and Installation REMOVAL

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



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INSTALLATION

Install in the reverse order of removal.

LT

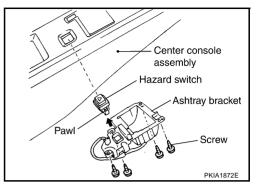
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HAZARD SWITCH

Removal and Installation REMOVAL

- 1. Remove center console assembly. Refer to <u>IP-10</u>, "INSTRU-<u>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.



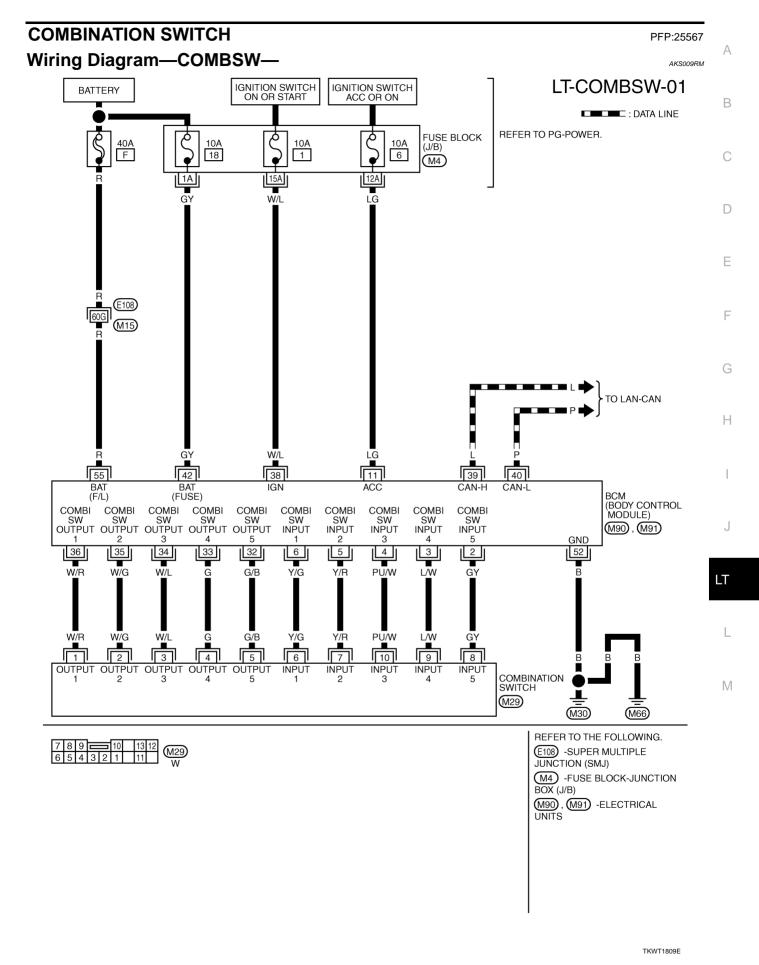
INSTALLATION

Install in the reverse order of removal.

PFP:25290

AKS000UV

COMBINATION SWITCH



Revision: 2004 December

COMBINATION SWITCH

Combination Switch Reading Function

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

CONSULT-II Functions

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

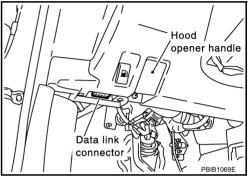
BCM diagnosis part Check item, diagnosis mo		le Description		
Combination switch	Data monitor	Displays BCM input data in real time.		

CONSULT-II BASIC OPERATION

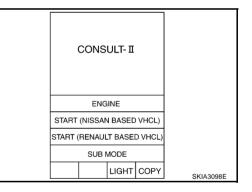
CAUTION:

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.

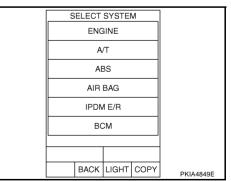
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



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



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



AKS00APA

AKS00AP9

COMBINATION SWITCH

Touch "COMB SW". 4.

Touch "COM	3 SW".	SELECT TEST ITEM
		HEAD LAMP
		WIPER
		FLASHER
		AIR CONDITIONER
		COMB SW
		IMMU
		Page Up Page Down
		BACK LIGHT COPY
		PKIA6100E
	R	
peration Proc		
•		SELECT TEST ITEM" screen.
		R" on "SELECT DIAG MODE" screen.
		IALS" or "SELECTION FROM MENU" on "DATA MONITOR" screen.
ALL SIGNALS	Мо	nitors all the signals.
SELECTION FROM	MENU Se	lects and monitors individual signal.
Touch "STAR	T".	
When "SELE	CTION FF	ROM MENU" is selected, touch items to be monitored. When "ALL SIGNALS" is
		will be monitored.
Touch "REC	ORD" whil	e monitoring, then the status of the monitored item can be recorded. To stop
recording, tou		
isplay Item Li	st	
Monitor item "OPERATION C		Contents
FURN SIGNAL R	"ON/OFF"	Displays "Turn Right (ON)/Other (OFF)" status, determined from lighting switch signal.
FURN 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.
		Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting
HEAD LAMP SW 2	"ON/OFF"	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.
NOTE		switch signal.
FR FOG SW ^{NOTE}	"ON/OFF"	
R WIPER HI	"ON/OFF"	Displays "Front Wiper HI (ON)/Other (OFF)" status, determined from wiper switch signal.
R WIPER LOW	"ON/OFF"	Displays "Front Wiper LOW (ON)/Other (OFF)" status, determined from wiper switch signal.
R WIPER INT		
	"ON/OFF"	Displays "Front Wiper INT (ON)/Other (OFF)" status, determined from wiper switch signal.
R WASHER SW	"ON/OFF" "ON/OFF"	Displays "Front Wiper INT (ON)/Other (OFF)" status, determined from wiper switch signal. Displays "Front Washer Switch (ON)/Other (OFF)" status, determined from wiper switch signal.

SELECTION FROM MENU	Selects and monitors individual signal.

Touch "START". 4.

ALL SIGNALS

DATA MONITOR

1. 2.

3.

Operation Procedure

- 5. When **"SELECTION** selected, all the signa
- Touch "RECORD" w 6. recording, touch "STC

Monitor item r "OPERATION O		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.	J
HI BEAM SW	"ON/OFF"	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.	LT
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.	I
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.	M
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.	

Display Item List

NOTE:

This item is displayed, but cannot monitor it.

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

With CONSULT-II

CAUTION:

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

- 1. Connect CONSULT-II, and select "COMB SW" on "SELECT TEST ITEM" screen.
- 2. Select "DATA MONITOR".
- 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 M				
MONITOR			Ν	O DTC	
FR WIPER LOW FR WIPER INT				OFF OFF	
R			EC	ORD	
MODE BACK LIGH			Т	COPY	PKIA7019E

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.

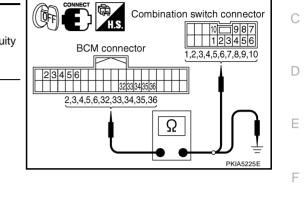
Check results

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		BCM		Combina	Continu			
system			Terminal (Wire color)		Terminal (Wire color)			
1		Input 1	6 (YG)		6 (YG)			
1		Output 1	36 (W/R)		1 (W/R)	Yes		
2		Input 2	5 (Y/R)		7 (Y/R)			
2		Output 2	35 (W/G)		2 (W/G)			
3	M90	Input 3	4 (PU/W)	M29	10 (PU/W)			
3	10190	Output 3	34 (W/L)	10129	3 (W/L)			
4		Input 4	3 (L/W)		9 (L/W)			
4	-	Output 4	33 (G)		4 (G)			
5		Input 5	2 (GY)		8 (GY)			
5	5	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	minals		
Suspect system		BCM (+)			Continuity
eyetetti	Connector	Terminal	(Wire color)	(-)	
1		Input 1	6 (YG)		
I		Output 1	36 (W/R)	Ground	No
2		Input 2	5 (Y/R)		
2		Output 2	35 (W/G)		
3	M90	Input 3	4 (PU/W)		
3	10190	Output 3	34 (W/L)	Giouna	
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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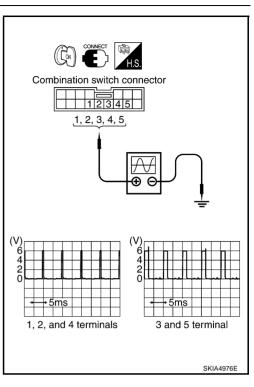
4. BCM OUTPUT TERMINAL INSPECTION

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

<u> </u>	Terminals					
Suspect system	Comb	ination switch (+)	(-)			
-,	Connector	Terminal (Wire color)	(-)			
1		1 (W/R)				
2		2 (W/G)				
3	M29	3 (W/L)	Ground			
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	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.

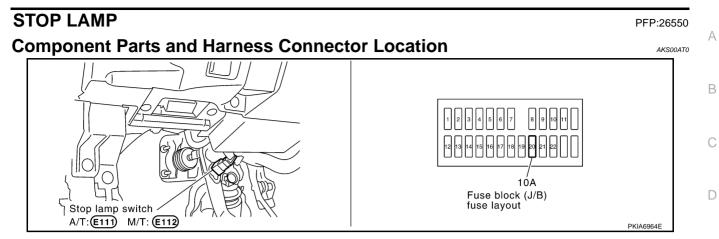
>> INSPECTION END

Removal and Installation

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

AKSODAPC

STOP LAMP



System Description

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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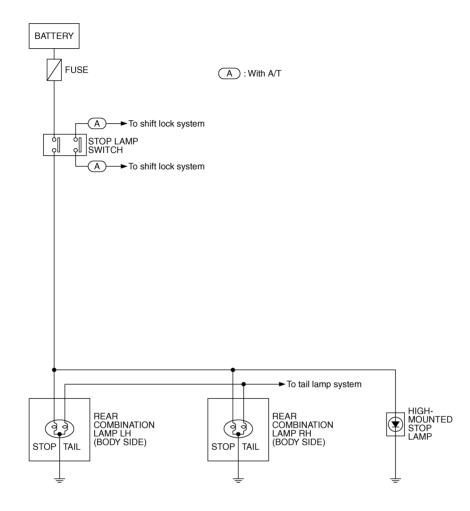
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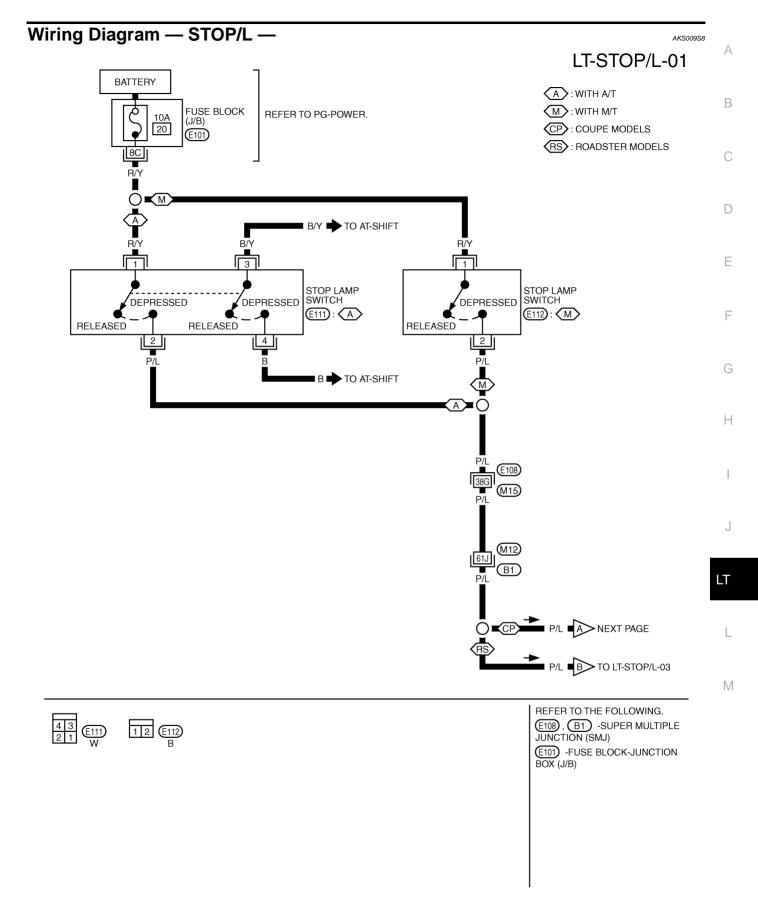
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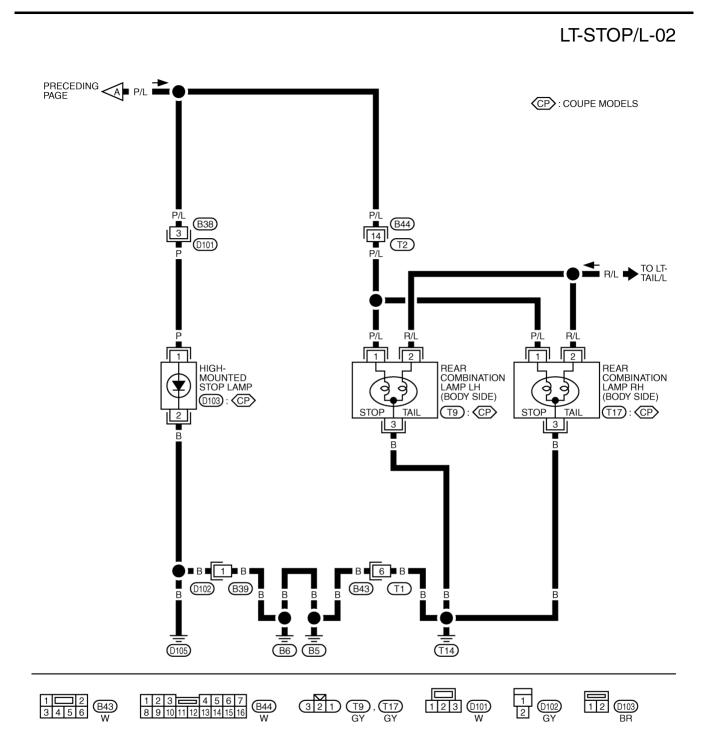
Schematic



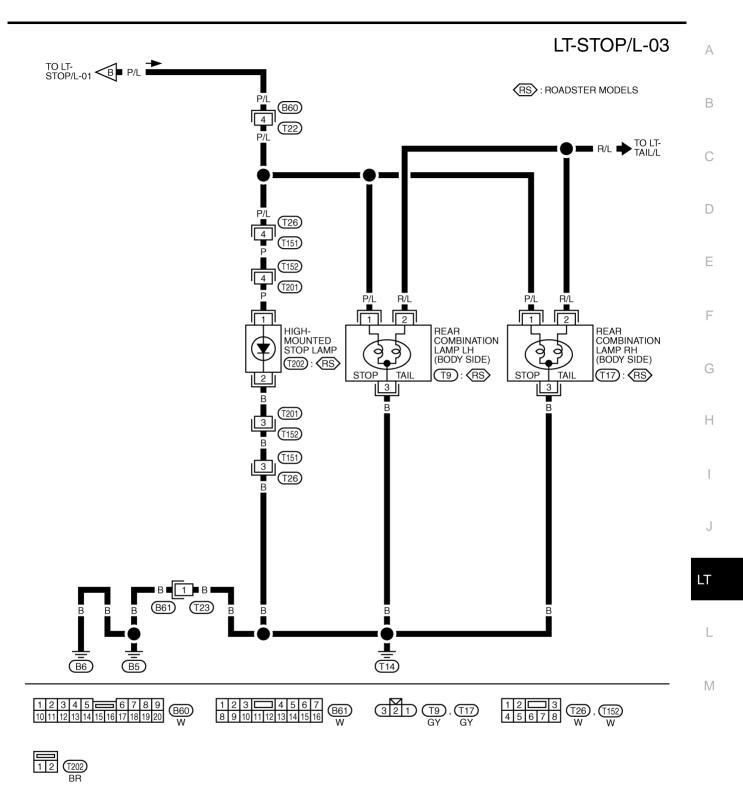
TKWT1601E



TKWT1602E



TKWT1603E



TKWT1604E

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

- Remove back door finisher upper Refer to <u>EI-47, "BACK DOOR</u> <u>FINISHER"</u> 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.
- 5. 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

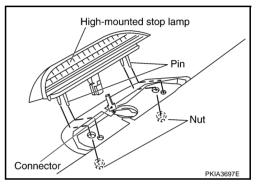
Refer to LT-205, "Bulb Replacement" in "REAR COMBINATION LAMP".

REMOVAL AND INSTALLATION

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

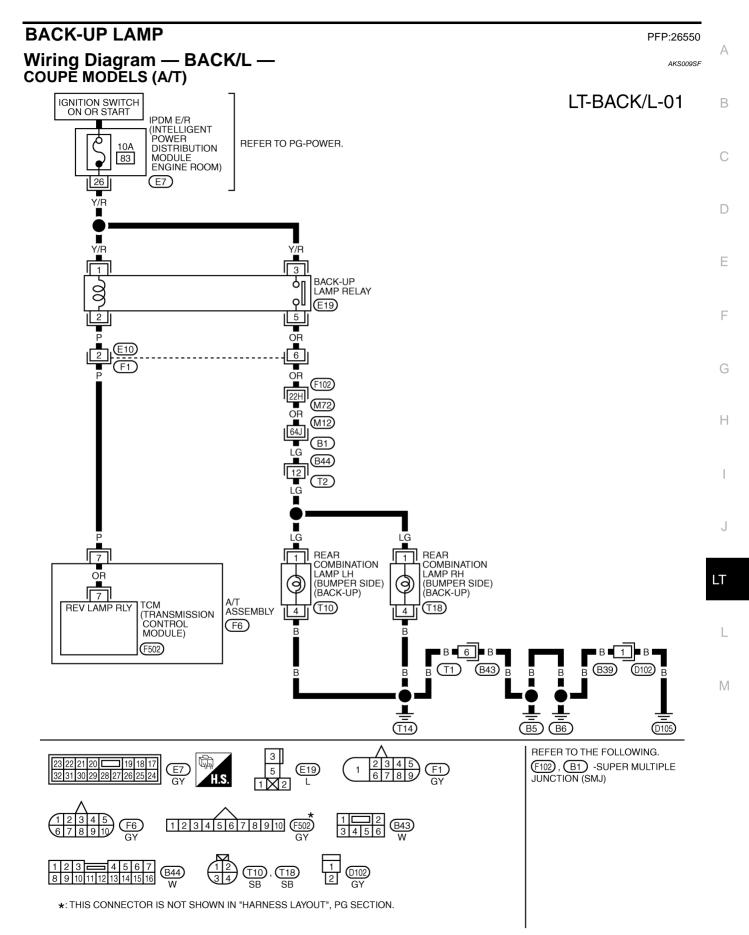
High-mounted stop lamp

AKS003U0



AKS009SA

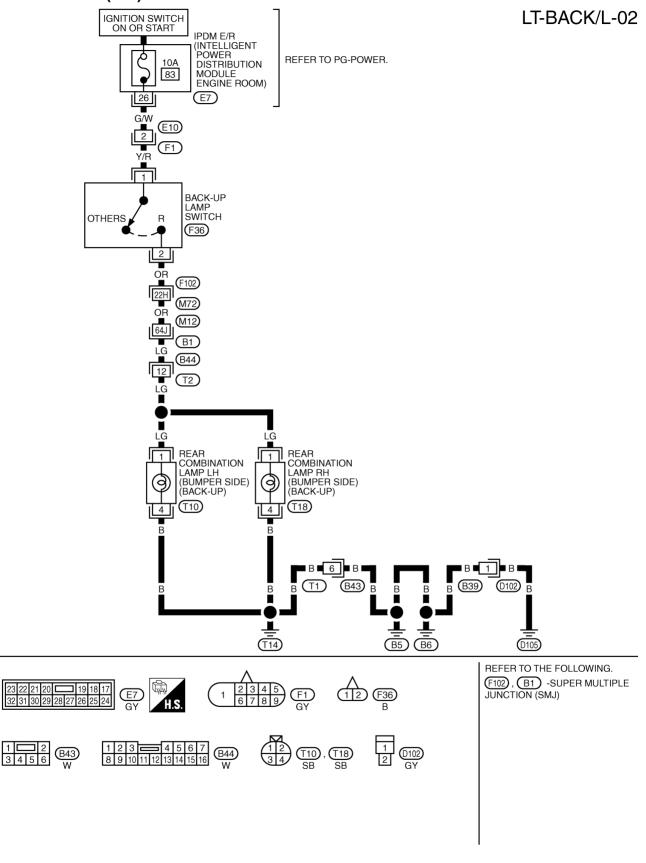
BACK-UP LAMP



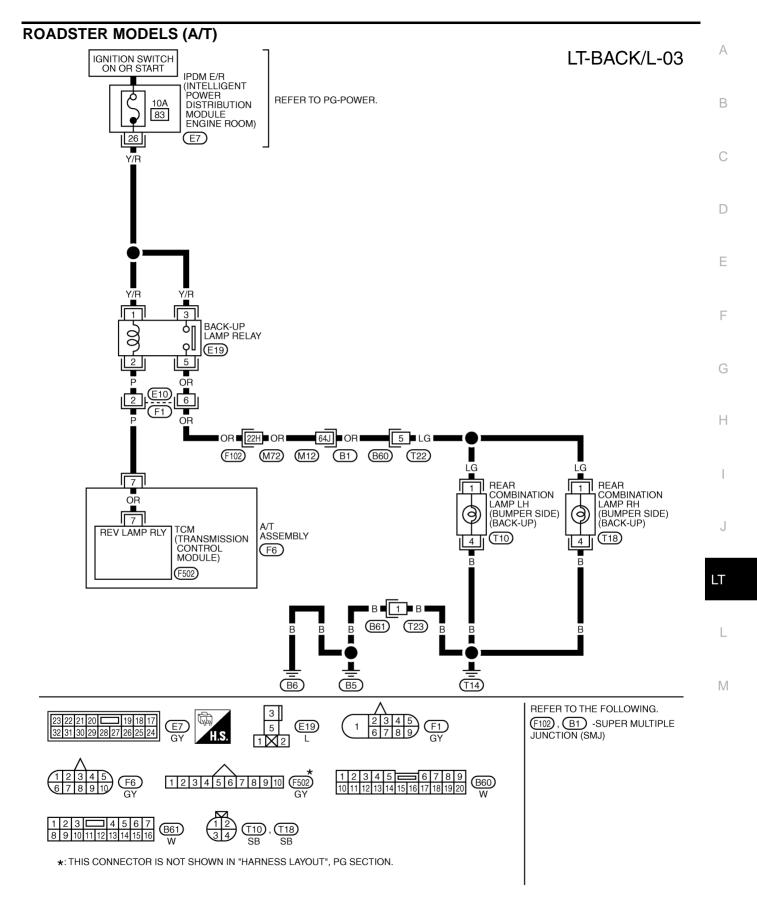
TKWM1315E

BACK-UP LAMP

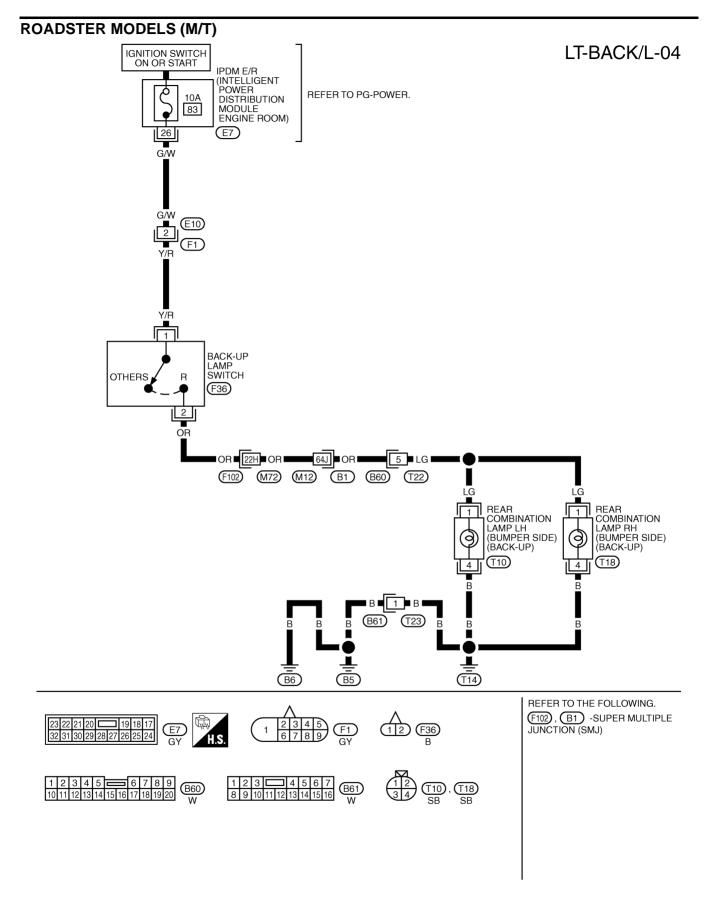
COUPE MODELS (M/T)



TKWT1326E



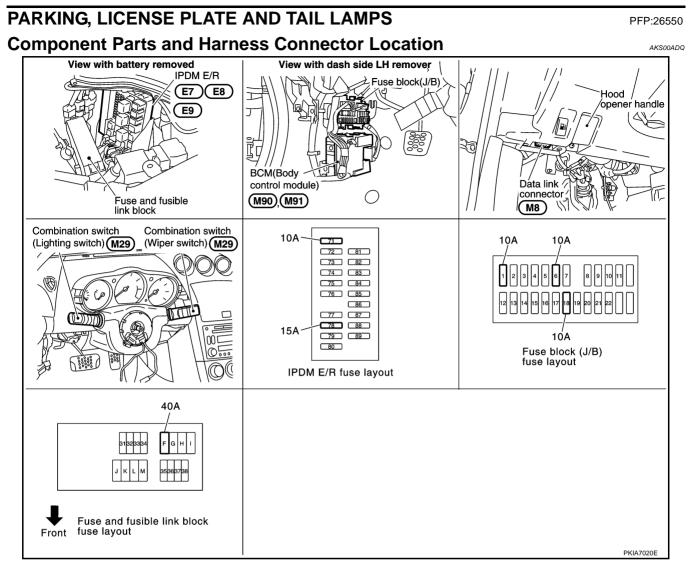
TKWM1316E



TKWT1606E

BACK-UP LAMP

Bulb Replacement	AKS000V8	0
Refer to LT-205, "Bulb Replacement" in "REAR COMBINATION LAMP".		А
Removal and Installation	AKS000V9	
Refer to LT-206, "Removal and Installation" in "REAR COMBINATION LAMP".		В
		С
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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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LT-184

• 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)] 	А
 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)] 	В
 to BCM (body control module) terminal 11. 	
Ground is supplied	С
 to BCM (body control module) terminal 52 	0
 through grounds M30 and M66 	
 to IPDM E/R (intelligent power distribution module engine room) terminals 38 and 60 	D
 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	E
 through IPDM E/R terminal 22 	1
 to front combination lamp LH terminals 5 and 6 (With xenon bulb headlamp) 	
 to front combination lamp LH terminals 5 and 5 (With halogen bulb headlamp) to front combination lamp LH terminal 5 (With halogen bulb headlamp) 	G
 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 	Н
 to rear combination lamp RH terminals 2 and 5 	
• to license plate lamp LH terminal 2	1
• to license plate lamp RH terminal 2.	
Ground is supplied at all times	
 to front combination lamp LH terminal 1 (With xenon bulb headlamp) 	J
 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) 	LT
 to front combination lamp RH terminal 4 (With halogen bulb headlamp) 	
 through grounds E17, E43 and F152 	L
 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) 	M
 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 the same lamp RH terminal 1	
 through grounds D105, B5, B6 and T14 (Coupe models) through grounds D5, D0 and T14 (Data data 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

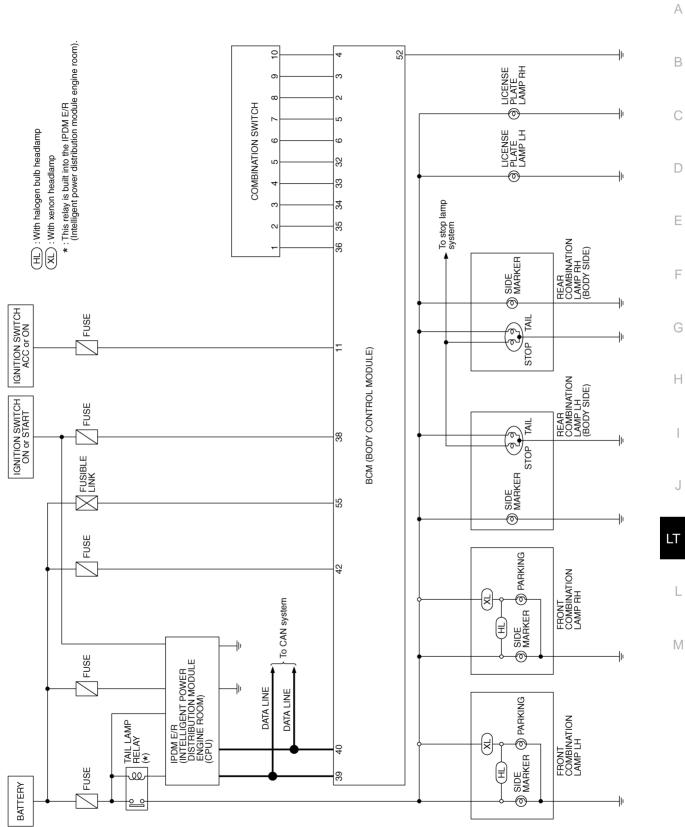
CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information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

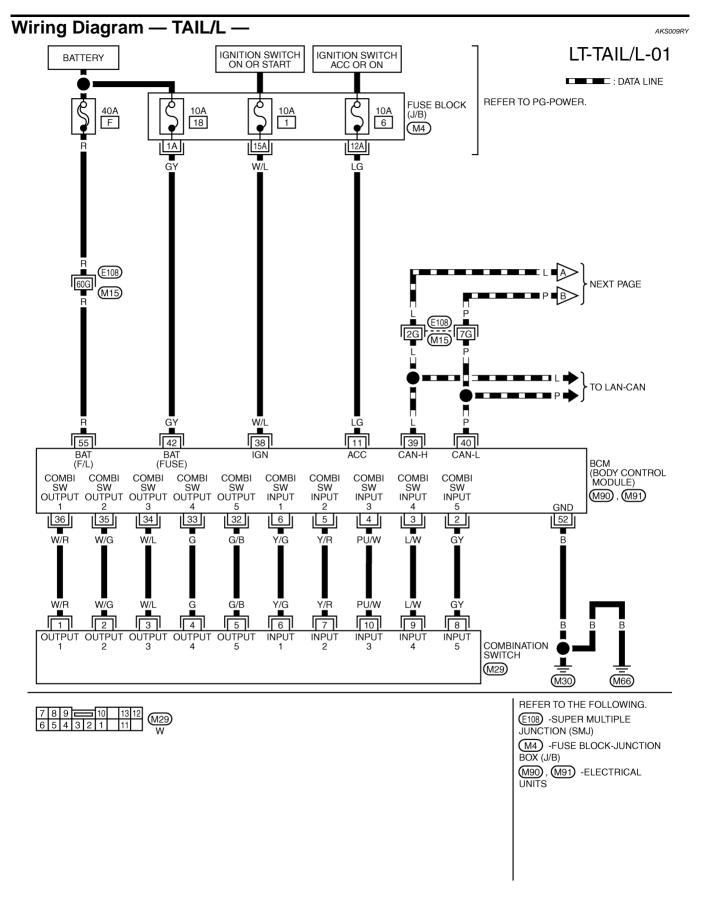
Refer to LAN-5, "CAN Communication Unit" .

Schematic

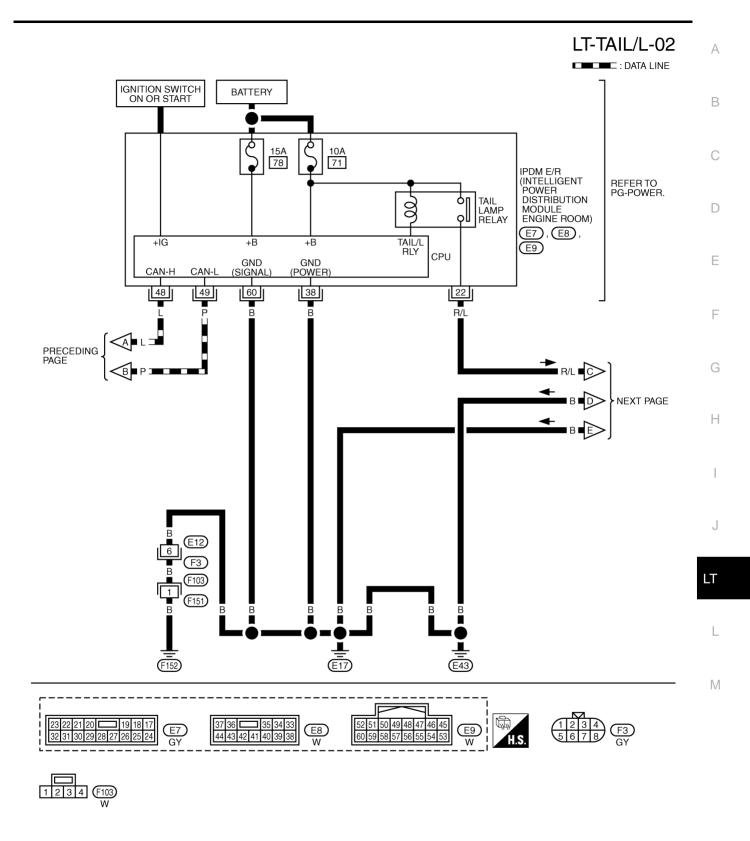


TKWT1810E

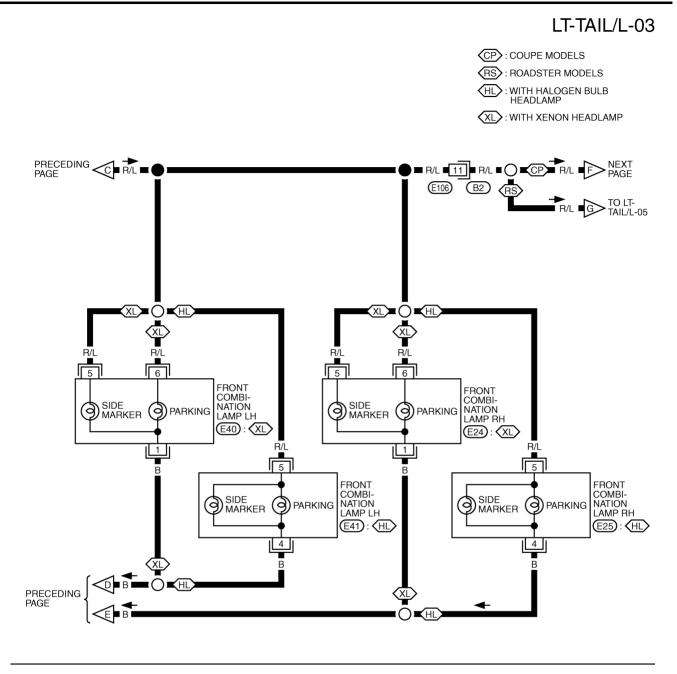
AKS009RX



TKWT1811E

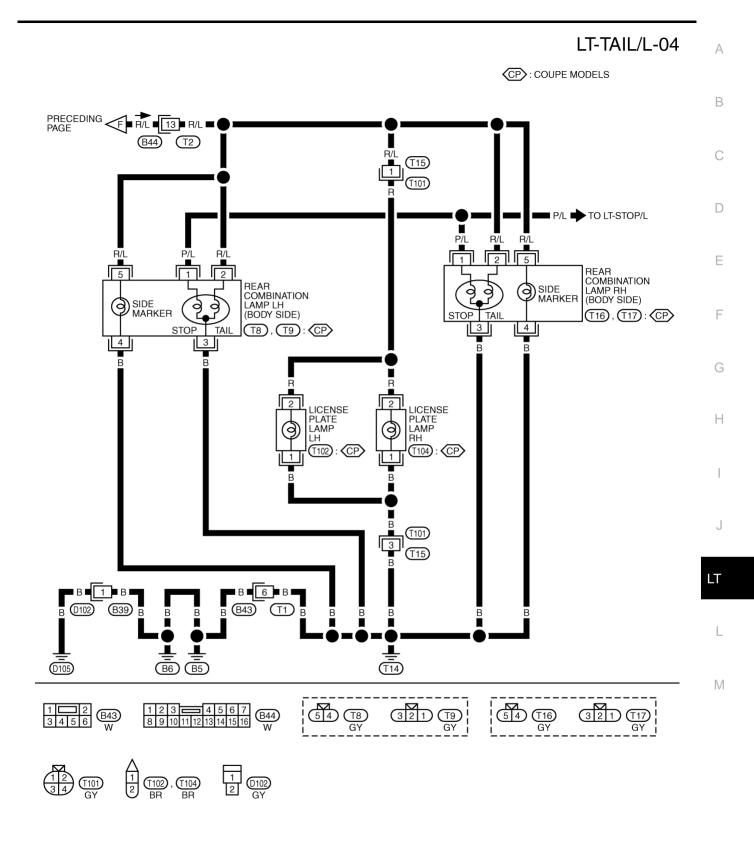


TKWT1812E





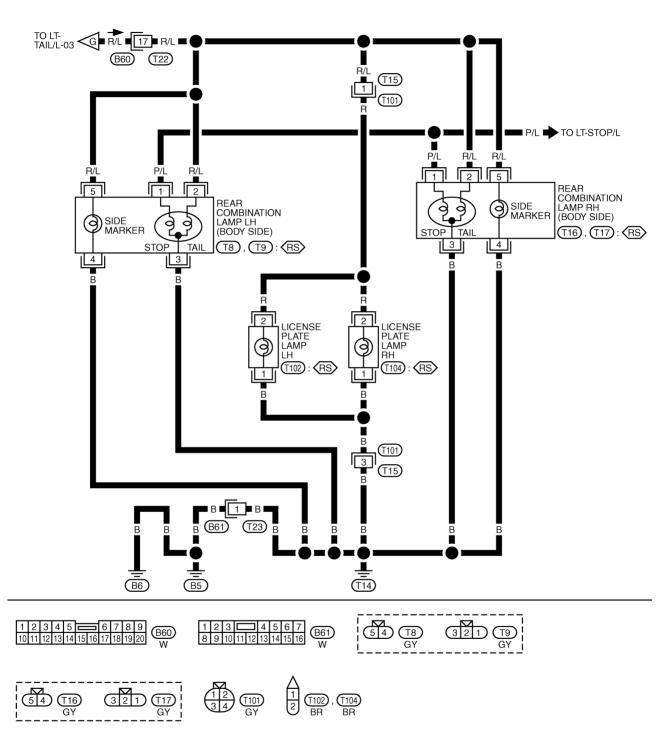
TKWT1813E



TKWT1814E

LT-TAIL/L-05

RS : ROADSTER MODELS



TKWT1815E

Terminals and Reference Values for BCM

Torminal	10/:			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 + 5 ms SKIA5291E
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) 6 4 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	KIA5292E
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 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 5KIA5291E

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AKS00APD

Torminal	erminal Wire			Measuring condition		
No.	color	Signal name		Reference value		
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 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

Terminal	Wire		Measuring condition			
No.	color	Signal name	Ignition switch	Cineration or condition		Reference value
22	R/L	Parking, license, and tail	ON	Lighting switch	OFF	Approx. 0V
22		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

- 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 <u>LT-194, "Preliminary Check"</u>.
- 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

- 1. CHECK FUSES
- Check fuses for blown-out.

Unit	Power source	Fuse and fusible link No.	
	F		
BCM	Battery	18	
	Ignition switch ON or START position	1	
	Ignition switch ACC or ON position	6	
	Detter	71	
IPDM E/R	Battery	78	

AKS009S0

AKS009SG

AK\$009\$1

Refer to LT-188, "Wiring Diagram - TAIL/L -- " . А 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" В 2. CHECK POWER SUPPLY CIRCUIT Turn ignition switch OFF. 1. 2. Disconnect BCM connector. 3. Check voltage between BCM harness connector terminals and BCM connector ground. Terminals Ignition switch position F (+) OFF ACC ON (-) Terminal Connector (Wire color) ν F Battery Battery 11 (LG) 0V voltage voltage M90 Battery 38 (W/L) 0V 0V voltage Ground Battery Battery Battery 42 (GY) voltage voltage voltage BCM connector M91 Н Battery Battery Battery 42 55 (R) 55 voltage voltage voltage OK or NG V OK >> GO TO 3. NG >> Check harness for open or short between BCM and fuse. SKIA5773E **3. CHECK GROUND CIRCUIT** Check continuity between BCM harness connector terminal and LT ground. Terminals Continuity BCM connector Connector Terminal (Wire color) L Ground 52 M91 52 (B) Yes OK or NG Ω Μ OK >> INSPECTION END NG >> Check ground circuit harness. PKIA4900E

CONSULT-II Functions (BCM)

Refer to <u>LT-18</u>, "CONSULT-II Functions (BCM)" in XENON TYPE (FOR USA). Refer to <u>LT-49</u>, "CONSULT-II Functions (BCM)" in CONVENTIONAL TYPE (FOR USA). Refer to <u>LT-83</u>, "CONSULT-II Functions (BCM)" in XENON TYPE (FOR CANADA). Refer to <u>LT-120</u>, "CONSULT-II Functions (BCM)" in CONVENTIONAL TYPE (FOR CANADA).

CONSULT-II Functions (IPDM E/R)

Refer to <u>LT-20, "CONSULT-II Functions (IPDM E/R)"</u> in XENON TYPE (FOR USA). Refer to <u>LT-51, "CONSULT-II Functions (IPDM E/R)"</u> in CONVENTIONAL TYPE (FOR USA). Refer to <u>LT-85, "CONSULT-II Functions (IPDM E/R)"</u> in XENON TYPE (FOR CANADA). Refer to <u>LT-122, "CONSULT-II Functions (IPDM E/R)"</u> in CONVENTIONAL TYPE (FOR CANADA).

Parking, License Plate and Tail Lamps Do Not Illuminate

1. CHECK COMBINATION SWITCH INPUT SIGNAL

(B)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</u> <u>Switch Inspection"</u>.

2. ACTIVE TEST

With CONSULT-II

- 1. Select "IPDM E/R" on CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
- 2. Select "TAIL LAMP" on "SELECT TEST ITEM" screen.
- 3. Touch "ON" 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

- 1. 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.

	ACTI\			
TAIL LAI	MP		ON	
		0	=F	
MODE	BACK	LIGHT	COPY	PKIA7021E

DATA MONITOR

ON

MONITOR

LIGHT SW 1ST

AKS009S2

AKS00ADT

AKS00AP0

SKIA5956E

3. CHECK IPDM E/R А Select "IPDM E/R" on CONSULT-II, and select "DATA MONI-1. DATA MONITOR TOR" on "SELECT DIAG MODE" screen. MONITOR TAIL&CLR REQ ON 2. Make sure "TAIL & CLR REQ" turns ON when lighting switch is В in 1ST position. When lighting switch is 1ST : TAIL & CLR REQ ON С position OK or NG OK >> Replace IPDM E/R. D RECORD NG >> Replace BCM. Refer to BCS-17, "Removal and Installa-MODE BACK LIGHT COPY SKIA5958E tion of BCM".

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4. CHECK IPDM E/R

(B)With CONSULT-II

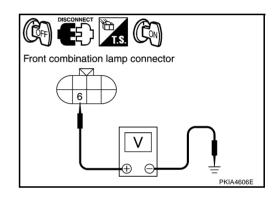
- 1. Turn ignition switch OFF.
- 2. Disconnect front combination lamp, rear combination lamp and license plate lamp connectors.
- 3. Select "IPDM E/R" on CONSULT-II. and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
- 4. Select "TAIL LAMP" on "SELECT TEST ITEM" screen.
- 5. Touch "ON" screen.
- 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

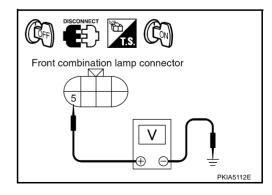
	Terminals				
Front combination lamp (+) (Parking)			(-)	Voltage	
Conr	nector	Terminal (wire color)	al (wire color)		
RH	E24	6 (P/L)	Ground	Pottony voltago	
LH	E40	6 (R/L)	Giouna	Battery voltage	



With halogen headlamp

	Terminals				
Front combination lamp (+) (Parking)			(-)	Voltage	
Conr	nector	Terminal (wire color)			
RH	E25	5 (R/L)	Ground	Patton	
LH	E41	5 (R/L)	Giouna	Battery voltage	

Front combination lamp connector



With xenon headlamp

	Terminals			
	Front comb (Sid	(-)	Voltage	
Con	nector	Terminal (wire color)		
RH	E24	5 (R/L)	Ground	Battery voltage
LH	E40	5 (IVE)	Gibunu	Dattery Voltage

With I	halogen he	adlamp			
	Terminals				
	Front combination lamp (+) (side marker)			Voltage	
Conr	nector	Terminal (wire color)			
RH	E25	5 (R/L)	Ground	Battery voltage	
LH	E41	5 (N/L)	Gibunu	ballery vollage	

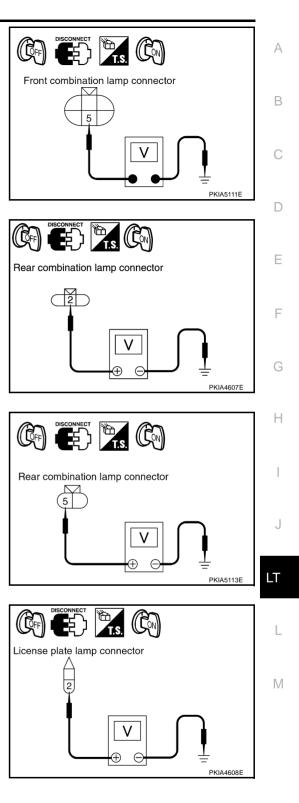
	Terminals				
	Rear combination lamp (+) (Tail)			Voltage	
Con	nector	Terminal (wire color)			
RH	T17	2 (R/L)	Ground	Battery voltage	
LH	Т9	2 (N/L)	Gibunu	Ballery Vollage	

	Terminals					
	Rear comb (Sid	(-)	Voltage			
Con	nector	Terminal (wire color)				
RH	T16	5 (D/L)	Ground	Pottory voltago		
LH	Т8	5 (R/L)	Ground	Battery voltage		

	Voltage			
Conr	nector	Terminal (wire color)	(-)	
RH	T104	2 (R)	Ground	Battery voltage
LH	T102	2 (11)	Giouna	Ballery vollage

OK or NG

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

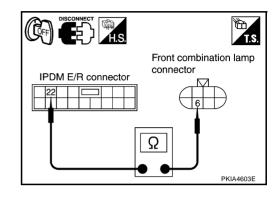


5. CHECK BETWEEN IPDM E/R AND PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMPS

- 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	Front combination lamp (Parking)			Continuity	
Connector	Terminal (wire color)	Connector		Terminal (wire color)	
F7	22 (R/L)	RH	E24	6 (R/L)	Yes
E7	22 (R/L)	LH	E40	6 (R/L)	165



HS

IPDM E/R

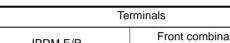
connector

ð

Front combination lamp

connector

T.S.



With halogen bulb headlamp

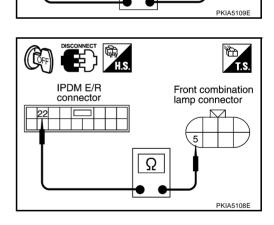
IPD	Front combination lamp (Parking)			Continuity	
Connector	Terminal (wire color)	Connector		Terminal (wire color)	
F7	22 (R/L)	RH	E25	5 (R/L)	Yes
E7	22 (IV/L)	LH	E41	5 (R/L)	165

With xenon headlamp

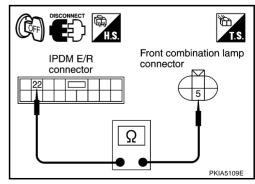
IPD	IPDM E/R Front combination lamp (side marker)				Continuity
Connector	Terminal (wire color)	Connector		Terminal (wire color)	
F7	22 (R/L)	RH	E24	5 (R/L)	Yes
E7	22 (IV/L)	LH	E40	5 (R/L)	165

With halogen bulb headlamp

IPDM E/R Front combination lamp (side marker)					Continuity
Connector	Terminal (wire color)	Connector		Terminal (wire color)	
F7	22 (R/L)	RH	E25	5 (R/L)	Yes
	22 (N/L)	LH	E41	5 (R/L)	1625



Ω



IPD	IPDM E/R Rear combination lamp (Tail)				
Connector	Terminal (wire color)	Connector		Terminal (wire color)	
F7	22(R/L)	RH	T17	2 (R/L)	Yes
	22(IV/L)	LH	Т9	2 (R/L)	165

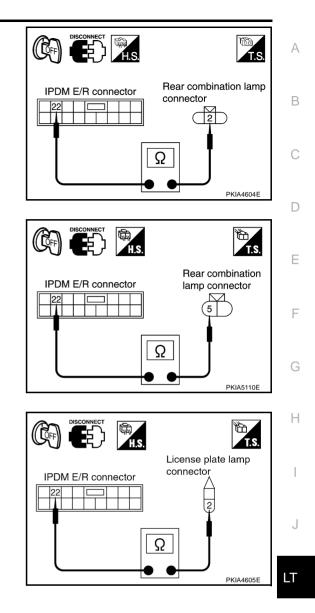
IPDM E/R			Rear combination lamp (side marker)		Continuity
Connector	Terminal (wire color)	Connector		Terminal (wire color)	
F7	22(R/L)	RH	T16	5 (R/L)	Yes
	22(N/L)	LH	Т8	5 (R/L)	165

IPDM E/R Licence plat lamp					Continuity
Connector	Terminal (wire color)	Connector		Terminal (wire color)	
F7	22 (R/L)	RH	T104	2 (R)	Yes
	22 (IV/L)	LH	T102	2 (R)	165

OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness or connector.



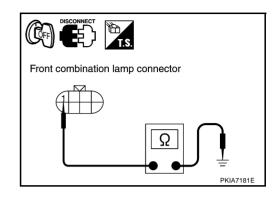
L

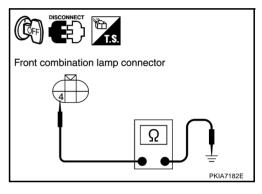
Μ

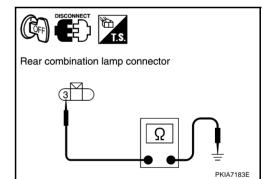
6. CHECK GROUND

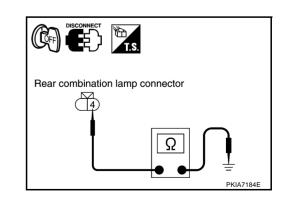
1. Check harness continuity between front combination lamp, rear combination lamp and license plate lamp connectors and ground.

With	xenon head	llamp		
	Continuity			
Connector Terminal (wire color)		Ground		
RH	E24	1 (B)		Yes
LH	E40	т (D)		165







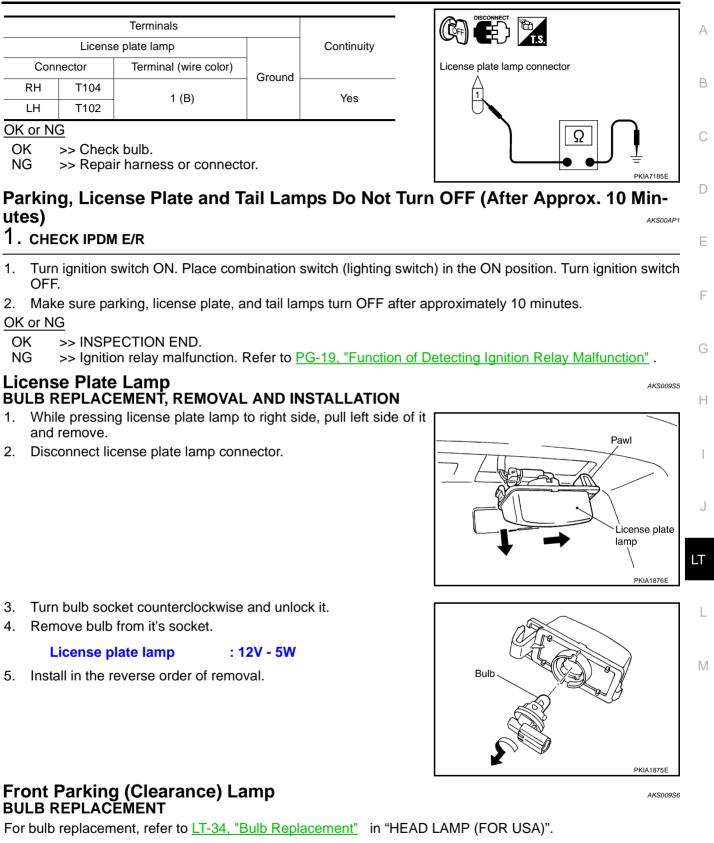


With halogen headlamp	
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	Terminals						
	Continuity						
Conr	Connector Terminal (wire color)		Ground				
RH	E25	4 (B)		Yes			
LH	E41	т (D)		165			

		Terminals		
Rear combination lamp (Tail)			Continuity	
Conr	nector	Terminal (wire color)	Ground	
RH	T17	3 (B)		Yes
LH T9	5 (B)		163	

Terminals				
Rear combination lamp (Side marker)			Continuity	
Conr	nector	Terminal (wire color)	Ground	
RH	T16	4 (B)	-	Yes
LH	T8			163



REMOVAL AND INSTALLATION

For front parking (clearance) lamp removal and installation procedures, refer to <u>LT-36, "Removal and Installa-</u> tion" in "HEAD LAMP (FOR USA)".

Tail Lamp BULB REPLACEMENT

AKS009S7

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 COM-BINATION LAMP".

REAR COMBINATION LAMP



Bulb

Stop/ tail lamp bulb socket

PKIA1877E

А AKS000VN

В

F

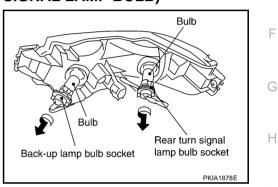


- Installation"
- 2. Turn bulb socket counterclockwise and unlock it.
- 3. Remove bulb.
- 4 Install in the reverse order of removal.

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)

- Remove rear combination lamp. Refer to LT-206, "Removal and 1. Installation"
- 2. Turn bulb socket counterclockwise and unlock it through bumper fascia crevice.



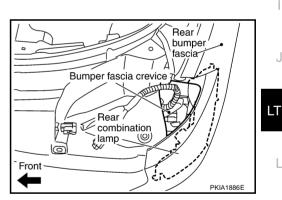
Bulb Rear side marker lamp bulb socket

- 3. Remove bulb.
- 4. Install in the reverse order of removal.

Rear turn signal lamp (rear bumper side) **Back-up lamp** (rear bumper side)

: 12V - 21W (umber bulb)

: 12V - 21W

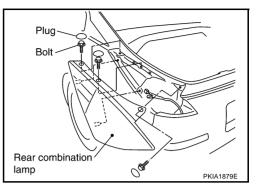


L

Removal and Installation REMOVAL

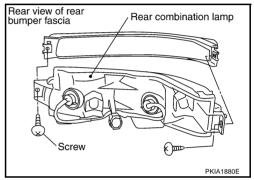
Rear Fender Side

- 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

Y

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)

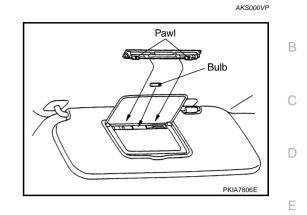
VANITY MIRROR LAMP

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.



PFP:96400

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TRUNK ROOM LAMP

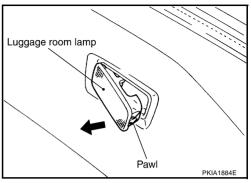
3. Remove bulb.

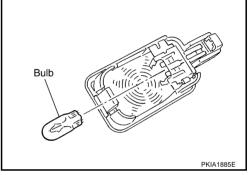
4.

PFP:26470

Bulb Replacement, Removal and Installation of Luggage Room Lamp (Coupe Models) AKS00ADR

- 1. Pull out luggage room lamp in direction shown by the arrow in the figure.
- Disconnect luggage room lamp connector. 2.





Bulb Replacement, Removal and Installation of Trunk Room Lamp (Roadster Models) AKS00997

: 12V - 5W

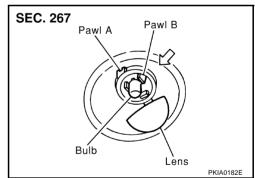
1. Unfold pawl A and remove lens.

Luggage room lamp

Install in the reverse order of removal.

- 2. Remove trunk room lamp while pressing pawl B in the direction of the arrow.
- 3. Disconnect trunk room lamp connector.

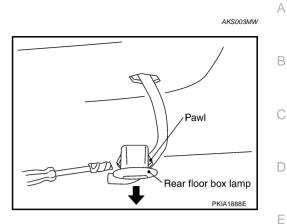
Trunk room lamp : 12V - 3.4W



REAR FLOOR BOX LAMP

Bulb Replacement, Removal and Installation

1. Pull out rear floor box lamp using screwdriver or similar tool.



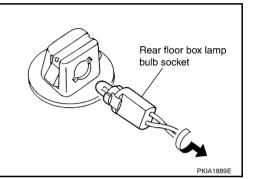
PFP:68520

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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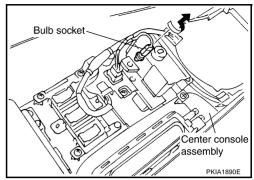
ASHTRAY ILLUMINATION

Bulb Replacement, Removal and Installation

- 1. Remove center console assembly. Refer to <u>IP-10, "INSTRU-</u><u>MENT PANEL ASSEMBLY"</u> in "IP" section.
- 2. 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:25860

INTERIOR ROOM LAMP

Image: Second	INTERIOR ROOM LAMP		PFP:26410
Image: Second	Component Parts and Harne	ss Connector Location	A
System Description E 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 tob, door lock and unlock switch, lay volinder lock and unlock switch lay volinder lock and unlock switch lay volinder lock (J/B)] Power is supplied at all times H e through 10A fuse [No.18, located in fuse block (J/B)] I to BCM (body control module) terminal 42 J through 40A fusible ink [letter F, located in fuse and fusible link block] J to BCM (body control module) terminal 37. With ignition switch in ON or START position, power is supplied at times through BCM (body control module) terminal 41 M to BCM (body control module) terminal 41. M to ma	Fuse block(J/B) Fuse block(J/B) BCM(Body control module) (M90), (M91)	1234567 8910 H 1234567 8910 H 1234567 8922 10A 10A Fuse block (J/B)	Fighting Fig
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 is controlled by BCM (body control module). 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 38. When room lamp and vanity mirror lamp power is supplied at times to trung BCM (body control module) terminal 1 to map lamp terminal 1 (Coupe models) to luggage room lamp terminal 1 (Roadster models) to trunk room lamp terminal 1 (Roadster models) to bBCM (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 52.	System Description		F
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 10A fuse [No.1, located in fuse block (J/B)] 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 1 (Coupe models) to unany terminal 1 (Coupe models) to trunk room lamp terminal 1 (Coupe models) to trunk room lamp terminal 1 (Coupe models) to trunk room lamp terminal 1 (Roadster models) to trunk room lamp terminal 1 (Boadster models) to trunk room lamp terminal 1 (Boadster models) to trunk room lamp terminal 1 (Roadster models) to trunk room lamp terminal 1 (Roadster models) to trunk room lamp terminal 1 (Boadster models) to trunk room lamp terminal 52 through Supplied to BCM (body control module) terminal 52 through supplied to BCM (body control module) terminal 52 through reside door is opened, ground is supplied through case ground of driver side door switch to BCM (body control module) terminal 52.	from switches including key switch, do fob, door lock and unlock switch, key cy When map lamp turns ON, there is a g a gradual dimming over 1 second.	or switch driver side and assist si /linder lock and unlock switch, igni radual brightening over 1 second.	de, unlock and lock signal from key fion switch.
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 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. 	• to map lamp terminal 3 (Coupe mo	dels)	
 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. 	• to map lamp terminal 2 (Roadster r	nodels)	
 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. 	• to luggage room lamp terminal 1 (C	Coupe models)	
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 through case ground of driver side door switch to BCM (body control module) terminal 62. 			
• to BCM (body control module) terminal 62.			
when basseddel side door is opened, dround is subbiled			
 through case ground of passenger side door switch 			

INTERIOR ROOM LAMP

• 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.

LT-212

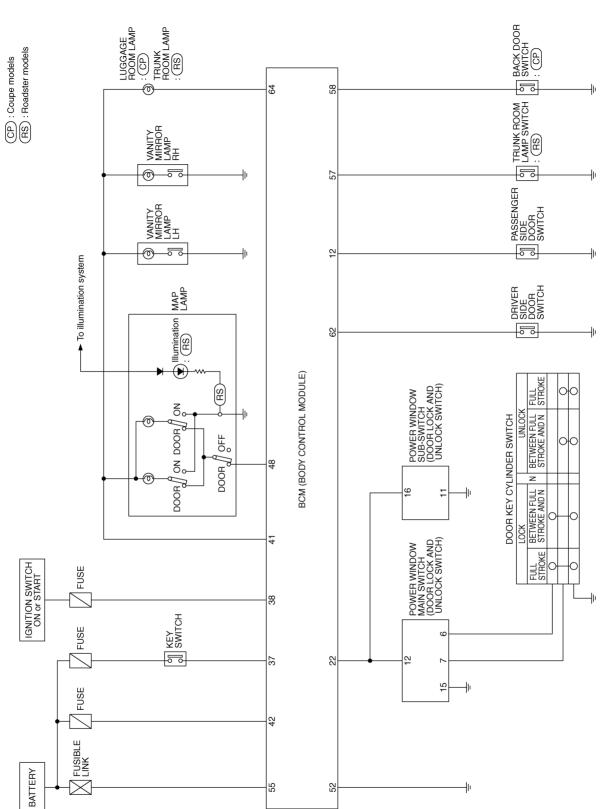
In addition, when map lamp turns ON or OFF there is gradual brightening or dimming over 1 second. Power is supplied	А
• to 10A fuse [No. 21 (located in fuse block (J/B)]	
 through key switch terminal 2. 	
When all doors are closed (all door switches OFF) and key is removed from key cylinder (key switch OFF), power will not be supplied to BCM terminal 37. Ground is supplied	В
from BCM terminal 22	С
 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	D
 through key switch terminal 1 	Е
• 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.	F
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.	G
• Driver door is locked (When locked key fob or power window main switch (door lock and unlock switch, door key cylinder switch).	Н
Driver door is opened (driver door switch turns ON).	
Ignition switch ON.	
INTERIOR LAMP BATTERY SAVER CONTROL	I
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	J
- signal from loss fab. or door look and unlook switch, or loss avinder is looked or unlooked	LT
 door is opened or closed, 	LI
 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.	L
	_

M

INTERIOR ROOM LAMP

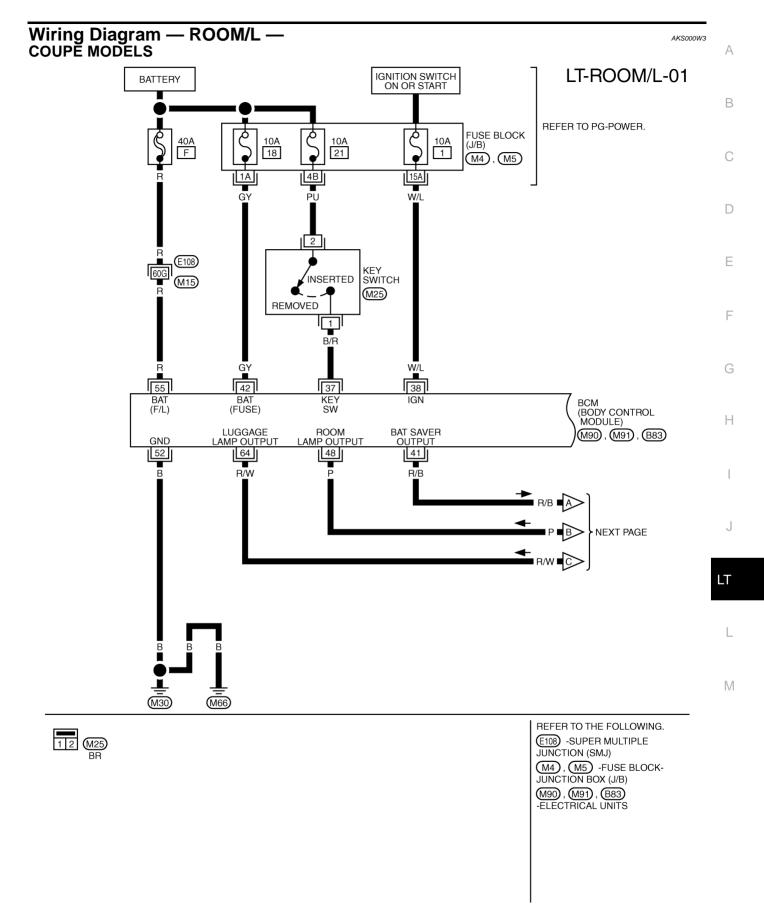
Schematic

AKS000W2

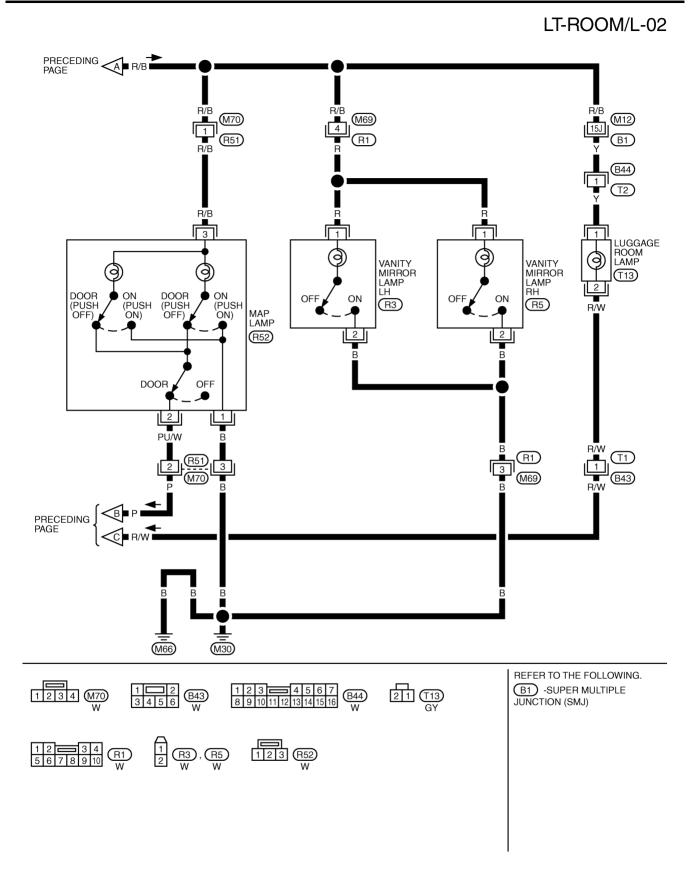


TKWT1816E

INTERIOR ROOM LAMP



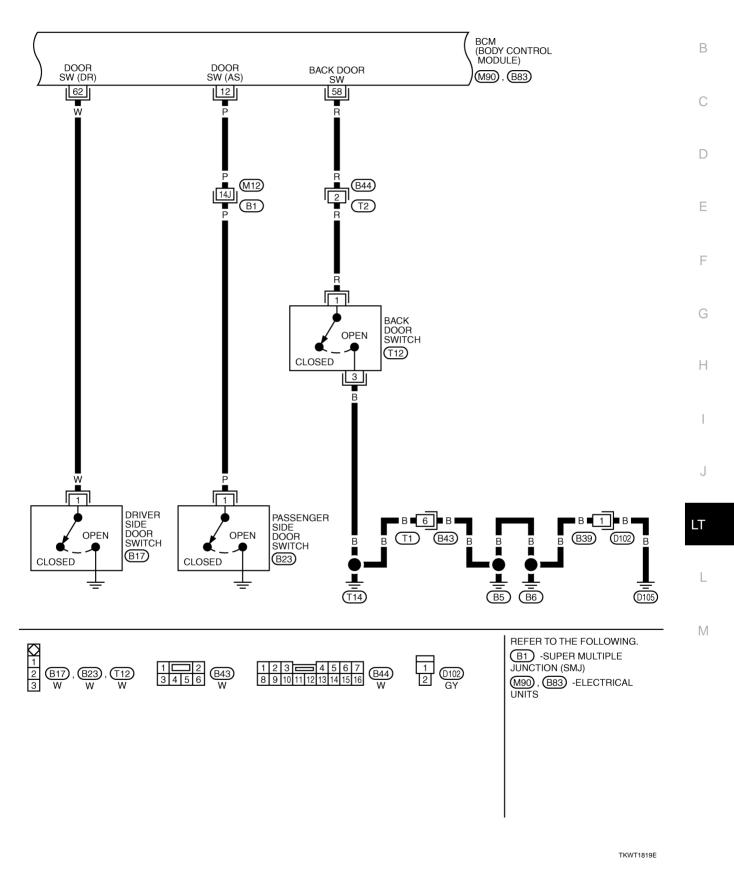
TKWT1817E



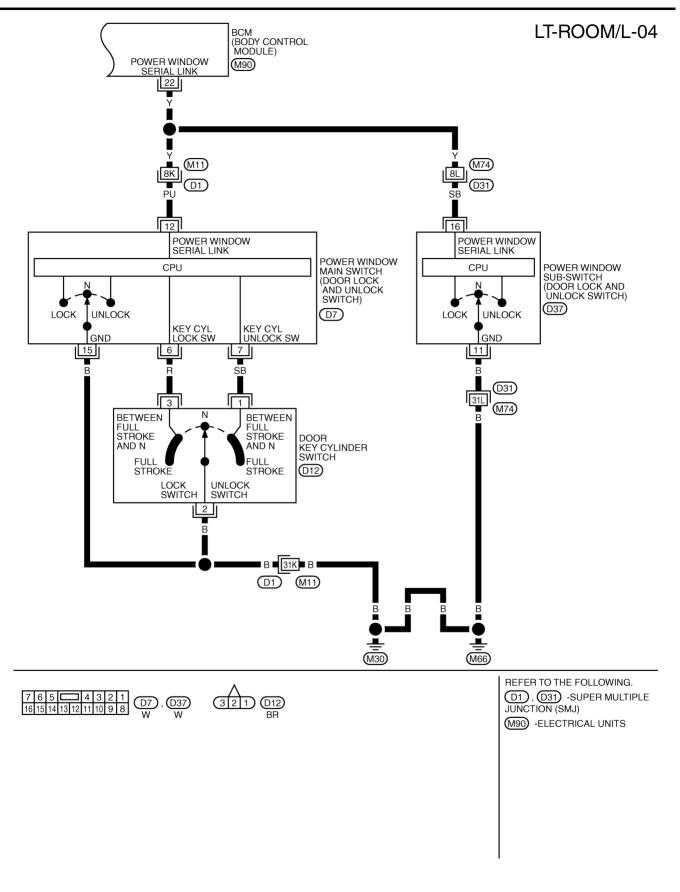
TKWT1818E

LT-ROOM/L-03

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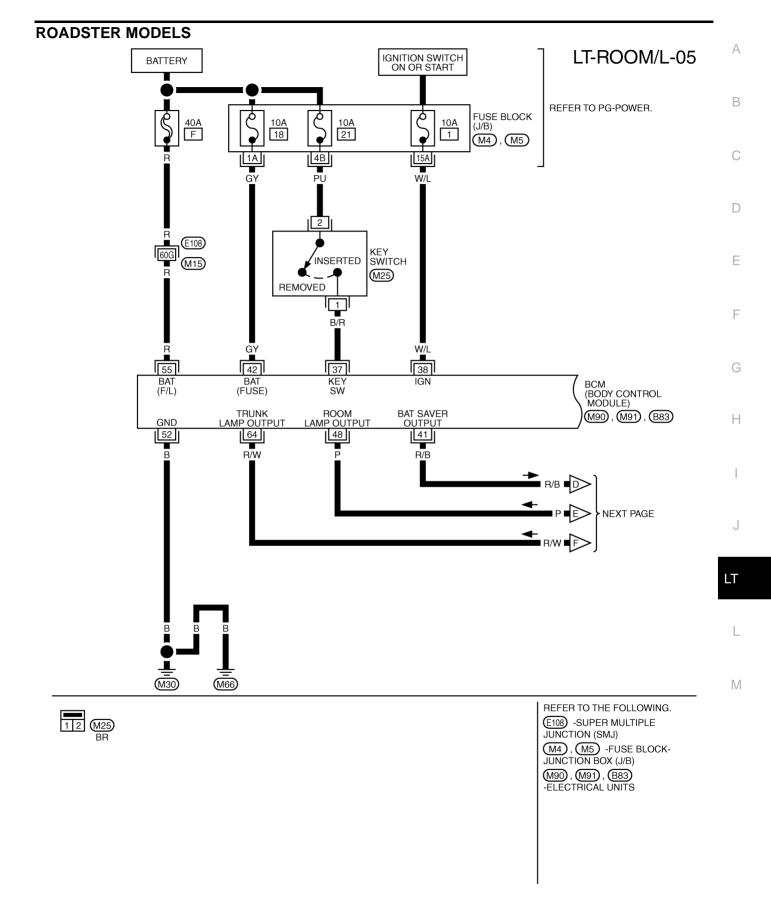


INTERIOR ROOM LAMP



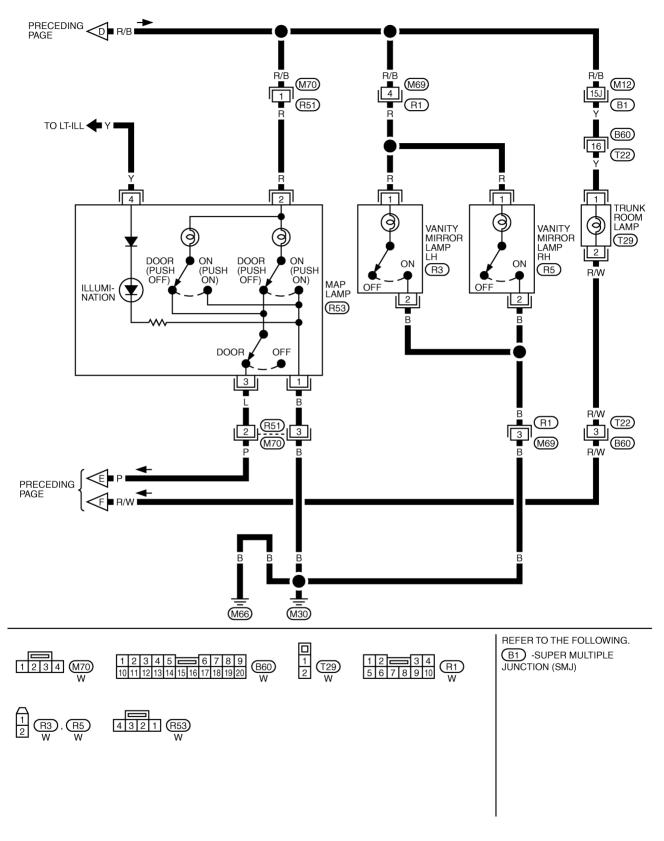
TKWT1820E

INTERIOR ROOM LAMP



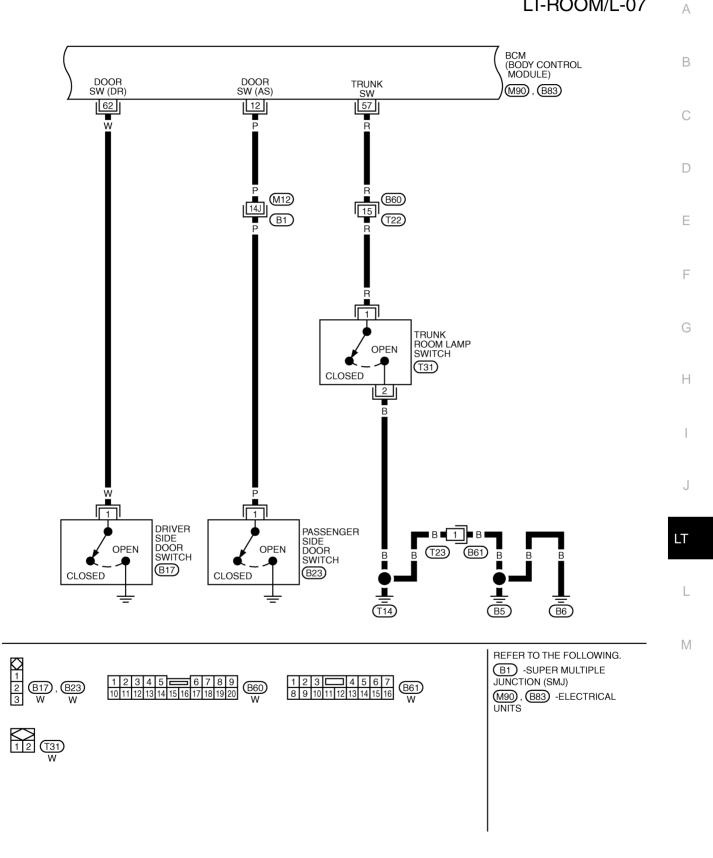
TKWT1821E

LT-ROOM/L-06



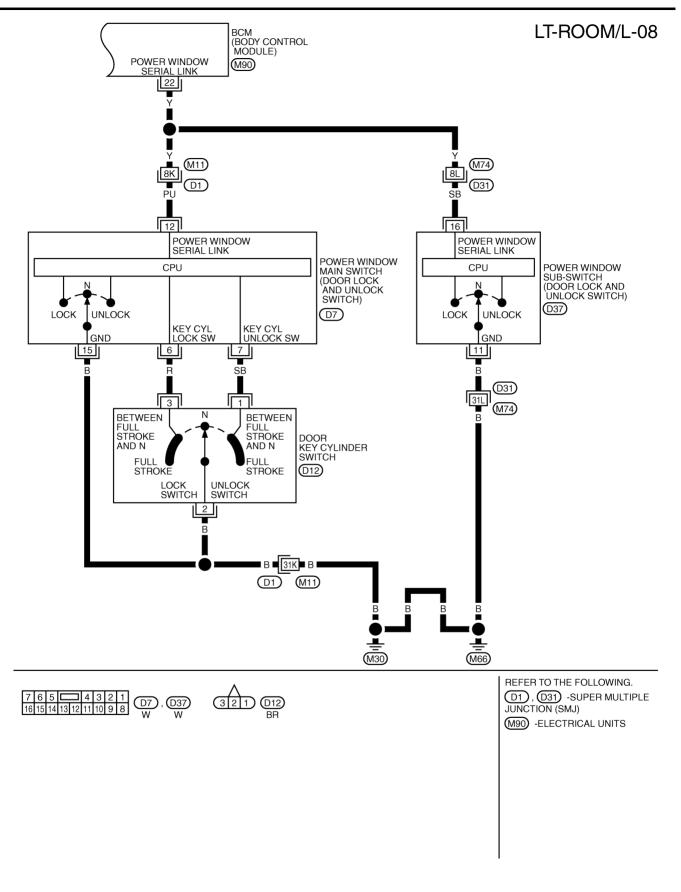
TKWT1822E

LT-ROOM/L-07



TKWT1823E

INTERIOR ROOM LAMP



TKWT1824E

INTERIOR ROOM LAMP

Terminals and Reference Values for BCM

T	14/5			Measuring cond	dition				
Terminal No.	Wire color	Signal name	Ignition switch	Operation of	or conditio	on	Reference value		
12	Р	Front door owitch AS signal	OFF	Front door switch	ON (op	en)	Approx. 0V		
12	Р	Front door switch AS signal	OFF	AS	OFF (c	osed)	Battery voltage		
22	Y	Power window switch serial link	ON	_		(V) 15 10 5 0 20ms EXIATO23E			
				Vehicle key is removed.		Approx. 0V			
37	B/R	Key-in detection switch signal	OFF	-	ehicle 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.		tch is	Approx. 0V		
			ON	_	_		Battery voltage		
42	GY	Battery power supply	OFF	-	_		Battery voltage		
48	Р	Interior room lamp, map lamp and front door inside handle	OFF	Interior door switch:	Any door	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		
57	IX.	Trunk room lamp switch signal	011	switch	OFF (c	osed)	Battery voltage		
58* ²	R	Back door switch signal	OFF	Luggage room	ON (op	en)	Approx. 0V		
50		Buck door ownen orghui	0.1	lamp switch	OFF (c	osed)	Battery voltage		
62	W	Front door switch DR signal	OFF	Front door switch	ON (open)		Approx. 0V		
02	••	i ten door ownen bit olghar	011	DR	OFF (c	osed)	Battery voltage		
		Trunk room lamp* ¹ or back		Trunk room	ON (op	en)	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

- 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 <u>LT-224, "Preliminary Check"</u>.
- 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

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Revision: 2004 December

Preliminary Check CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

• Check for blown BCM fuses.

Unit	Power source	Fuse and fusible link No.	
		F	
DOM	Battery	18	
BCM		21	
	Ignition switch ON or START position	1	

Refer to LT-215, "Wiring Diagram - ROOM/L -" .

OK or NG

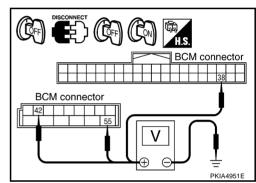
OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to <u>PG-</u> <u>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	Connector Terminal (Wire color)		011		
M91	42 (GY)		Battery voltage	Battery voltage	
10191	55 (R)	Ground	Battery voltage	Battery voltage	
M90	38 (W/L)		0V	Battery voltage	



AKS000W6

OK or NG

OK >> GO TO 3.

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

3. CHECK GROUND CIRCUIT

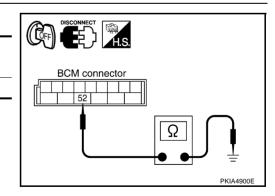
Check continuity between BCM and ground.

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

OK or NG

OK >> INSPECTION END

NG >> Check harness ground circuit.



CONSULT-II Functions

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.

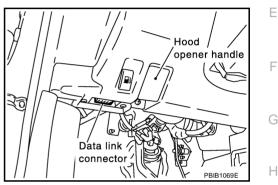
BCM diagnosis part	Check item, diagnosis mode	Description	В
	WORK SUPPORT	Changes the setting for each function.	
INTERIOR LAMP	DATA MONITOR	Displays BCM input data in real time.	
	ACTIVE TEST	Operation of electrical loads can be checked by sending driving signal to them.	С

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.



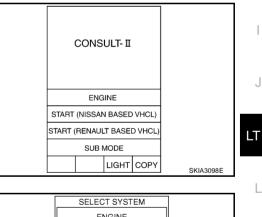
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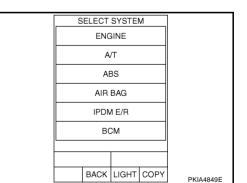
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2. Touch "START (NISSAN BASED VHCL)".

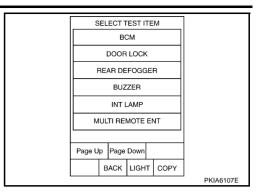


 Touch "BCM" on "SELECT SYSTEM" screen. If "BCM" is not indicated, refer to <u>GI-39, "CONSULT-II Data Link</u> <u>Connector (DLC) Circuit"</u>.



INTERIOR ROOM LAMP

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



WORK SUPPORT

Operation Procedure

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

Display Item List

Item	Description	CONSULT-II
SET I/L D-UNLCK INTCON	The 30 seconds glowing function interior room lamps and ignition keyhole illumi- nation 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.

INTERIOR ROOM LAMP

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 - RL ^{NOTE}	"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.
- Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen. 2.
- 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.	LT
IGN ILLUM ^{NOTE}	_	
STEM LAMP TEST NOTE		L
LUGGAGE LAMP TEST	 Luggage room lamp can be operated by any ON-OFF operations. (Coupe models) Trunk room lamp can be operated by any ON-OFF operations. (Roadster models) 	
OTE:		M

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	ONITOP	٦		
MONITO	DR		NO E	отс	
DOOR S		I	ON ON		
		RE	COR	D	
MODE	BACK	LIGHT		OPY	

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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, "Removal and Installa-</u> tion of <u>BCM"</u>. NG >> GO TO 3.

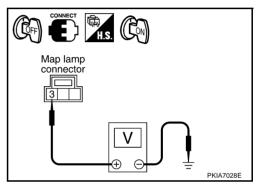
ACTIVE TEST INT LAMP ON OFF					
		ACTIV	/E TEST		
OFF	INT LAN	IP		ON	
OFF			•		
OFF					
			0	FF	
MODE BACK LIGHT COPY PKIA7027E	MODE	BACK	LIGHT	COPY	PKIA7027E

3. CHECK POWER SUPPLY CIRCUIT

- 1. Turn ignition switch ON.
- Check voltage between map lamp harness connector R52 terminal 3 (R/B) and ground.

OK or NG

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



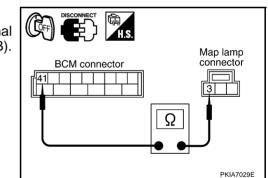
4. CHECK MAP LAMP CIRCUIT

- 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.



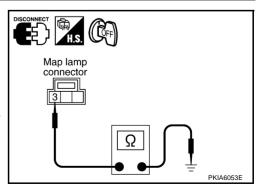
5. CHECK SHORT CIRCUIT

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

Ter	minal	Condition	Continuity		
Мар	lamp	Condition	Continuity		
3	2	Map lamp switch is DOOR.	Yes		
5		Map lamp switch is OFF.	No		

OK or NG

OK >> GO TO 7.

NG >> Replace map lamp

7. CHECK MAP LAMP CIRCUIT

- 1. Disconnect BCM connector.
- 2. Check continuity between BCM harness connector M91 terminal 48 (P) and map lamp harness connector R52 terminal 2 (PU/W).

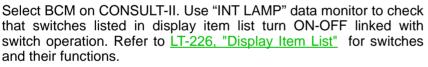
48 (P) – 2 (PU/W) : Continuity should exist.

OK or NO

- OK >> Replace BCM if map lamp does not work after setting the connector again. Refer to <u>BCS-17</u>, "<u>Removal and</u> <u>Installation of BCM</u>".
- NG >> Repair harness or connector.

Map Lamp Control Does Not Operate (Roadster models)

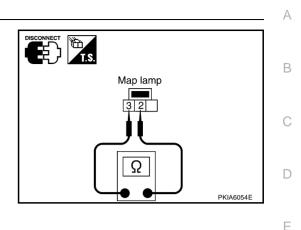
1. CHECK BETWEEN EACH SWITCH AND BCM

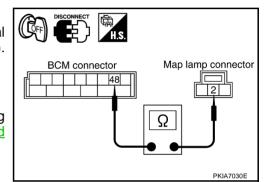


OK or NG

OK >> GO TO 2.

NG >> Inspect malfunctioning switch system.

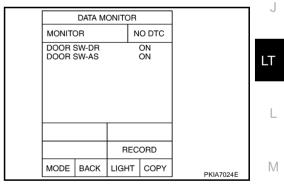




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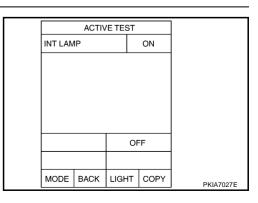
2. CHECK BETWEEN BCM AND MAP LAMP

- 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 map lamp operates.

Map lamp should operate.

OK or NG

OK >> Replace BCM. Refer to <u>BCS-17, "Removal and Installa-</u> tion of <u>BCM"</u>. NG >> GO TO 3.



$\overline{\mathbf{3}}$. Check between BCM and MAP LAMP

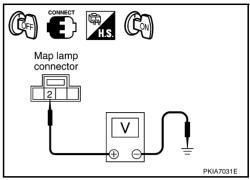
- 1. Turn ignition switch ON.
- 2. Check voltage between map lamp harness connector R53 terminal 2 (R) and ground.

2 (R) – Ground

: Battery voltage should exist.

OK or NG

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



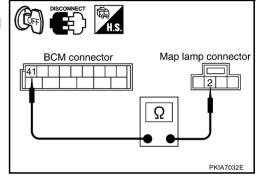
4. CHECK POWER SUPPLY CIRCUIT

- 1. Disconnect BCM connector and map lamp connector.
- Check continuity between BCM harness connector M91 terminal 41 (R/B) and map lamp harness connector R53 terminal 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 <u>BCS-17</u>, "<u>Removal and</u> <u>Installation of BCM</u>".
- NG >> After repairing harness, be sure to disconnect battery negative cable, and then reconnect it.

Map lamp connector

6. CHECK MAP LAMP

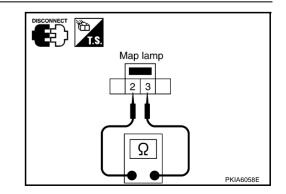
- 1. Disconnect map lamp connector.
- 2. Check continuity between map lamp.

Teri	minal	Condition	Continuity		
Мар	lamp	Condition	Continuity		
2	3	Map lamp switch is DOOR.	Yes		
Z	5	Map lamp switch is OFF.	No		

OK or NG

OK >> GO TO 7.

NG >> Replace map lamp



7. CHECK MAP LAMP CIRCUIT

- 1. 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 BCS-17, "Removal and Installation of BCM".
- 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

>> GO TO 2. OK

NG >> Replace bulb of luggage room lamp.

2. CHECK BETWEEN BACK DOOR SWITCH AND BCM

3. CHECK BETWEEN BCM AND LUGGAGE ROOM LAMP

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

1.

2.

OK or NG OK

NG

OK >> GO TO 3.

TEST" active test.

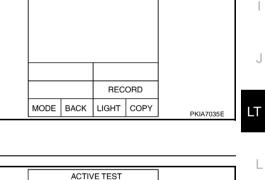
NG >> Inspect malfunctioning switch system.

Make sure luggage room lamp operates.

tion of BCM" .

>> GO TO 4.

Luggage room lamp should operate.



NO DTC

ON

Map lamp connector BCM connector 48

DATA MONITOR

MONITOR

BACK DOOR SW

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Revision: 2004 December

4. CHECK POWER SUPPLY CIRCUIT

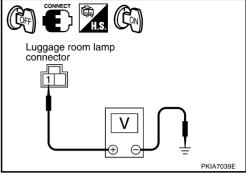
- 1. Turn ignition switch ON.
- Check voltage between luggage room lamp harness connector T13 terminal 1 (Y) and ground.

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).

41 (R/B) - 1 (Y)

: Continuity should exist.

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.

1 (Y) – Ground : Continuity should not exist.

OK or NG

- OK >> Replace BCM if luggage room lamp does not work after setting the connector again. Refer to <u>BCS-17, "Removal and Installation of BCM"</u>.
- NG >> After repairing harness, be sure to disconnect battery negative cable, and then reconnect it.

7. CHECK LUGGAGE ROOM LAMP CIRCUIT

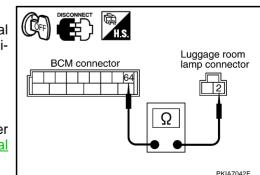
- 1. Disconnect BCM connector.
- Check continuity between BCM harness connector B83 terminal 64 (R/W) and luggage room lamp harness connector T13 terminal 2 (R/W).

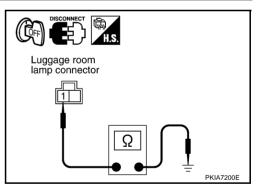
64 (R/W) – 2 (R/W)

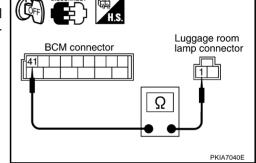
: Continuity should exist.

OK or NO

- OK >> Replace BCM if luggage room lamp does not work after setting the connector again. Refer to <u>BCS-17, "Removal</u> and Installation of <u>BCM"</u>.
- NG >> Repair harness or connector.







Trunk Room Lamp Does Not Illuminate (Roadster Models)

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 <u>LT-226</u>, "<u>Display Item List</u>" for switches and their functions.

OK or NG

OK >> GO TO 3.

NG >> Inspect malfunctioning switch system.

DATA MONITOR					
MONIT	OR	Ν	IO DTC		
BACK D	DOOR SV	v	ON		
		REC	ORD		
MODE	ВАСК	LIGHT	COPY	PKIA7035	

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3. CHECK BETWEEN BCM AND TRUNK ROOM LAMP

Select "BCM" on CONSULT-II. Select "LUGGAGE LAMP TEST" 1. Н ACTIVE TEST active test. LUGGAGE LAMP TEST ON 2. 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" . OFF NG >> GO TO 4. MODE BACK LIGHT COPY LT PKIA7038E

4. CHECK POWER SUPPLY CIRCUIT

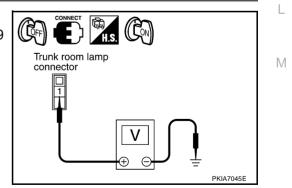
- 1. Turn ignition switch ON.
- 2. Check voltage between trunk room lamp harness connector T29 terminal 1 (Y) and ground.

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

OK or NG

OK >> GO TO 7.

NG >> GO TO 5.



5. CHECK TRUNK ROOM LAMP CIRCUIT

- 1. Disconnect BCM connector and trunk room lamp connector.
- Check continuity between BCM harness connector M91 terminal 41 (R/B) and trunk room lamp harness connector T29 terminal 1 (Y).

41 (R/B) – 1 (Y)

: Continuity should exist.

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 <u>BCS-17, "Removal and Installation of BCM"</u>.
- NG >> After repairing harness, be sure to disconnect battery negative cable, and then reconnect it.

7. CHECK TRUNK ROOM LAMP CIRCUIT

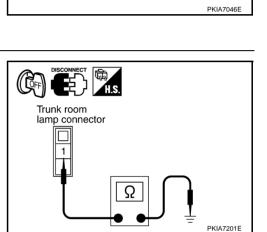
- 1. Disconnect BCM connector.
- Check continuity between BCM harness connector B83 terminal 64 (R/W) and trunk room lamp harness connector T29 terminal 2 (R/W).

64 (R/W) – 2 (R/W) : Continuity should exist.

OK or NO

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

NG >> Repair harness or connector.



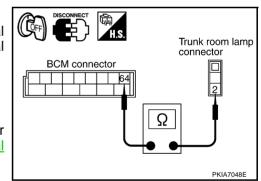
Trunk room lamp

connector

Ω

41

BCM connector



Bulb Replacement COUPE 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.

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.

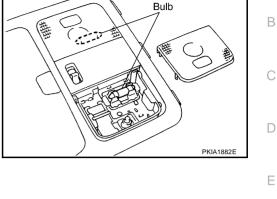
- 2. Remove lens using clip driver or suitable tool.
- 3. Remove bulb.

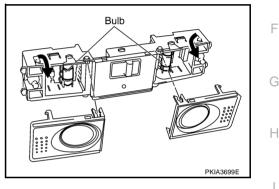
Map lamp :12V - 8 W

4. Install in the reverse order of removal.

Removal and Installation REMOVAL (COUPE MODELS)

- 1. Insert a clip driver or suitable tool and disengage pawl fittings of map lamp.
- 2. Disconnect map lamp connector and remove map lamp.





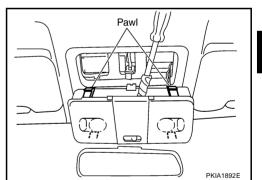
AKS0099A

LT

Μ

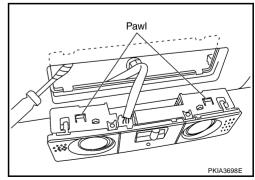
AKS00999

А



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

System Description

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,

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•	to map lamp (illumination) terminal 4 (Roadster models)	
•	to ashtray illumination terminal 1 (With ashtray),	А
•	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,	В
•	to soft top switch (illumination) terminal 5 (Roadster model),	
•	to audio unit terminal 8.	С
Gro	ound is supplied at all times	0
•	to luggage floor box lamp terminal 2,	
•	through grounds D105, B5, B6, and T14 (Coupe model),	D
•	through grounds B5, B6 and T14 (Roadster model),	
•	to ashtray illumination terminal 2 (With ashtray),	
•	to map lamp (illumination) terminal 1 (Roadster models),	Е
•	through grounds M30 and M66	
•	to soft top switch (illumination) terminal 6 (Roadster models),	_
•	to hazard switch (illumination) terminal 4,	F
•	to VDC off switch (illumination) terminal 4 (With VDC),	
•	to TCS off switch (illumination) terminal 4 (With TCS),	G
•	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,	Н
•	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.	J
Wit	h power and ground supplied, illumination lamps illuminate.	0

EXTERIOR LAMP BATTERY SAVER CONTROL

When combination switch (lighting switch) is in the 1ST or 2ND position, and ignition switch is turned from ON LT 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

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

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

AKS009QJ

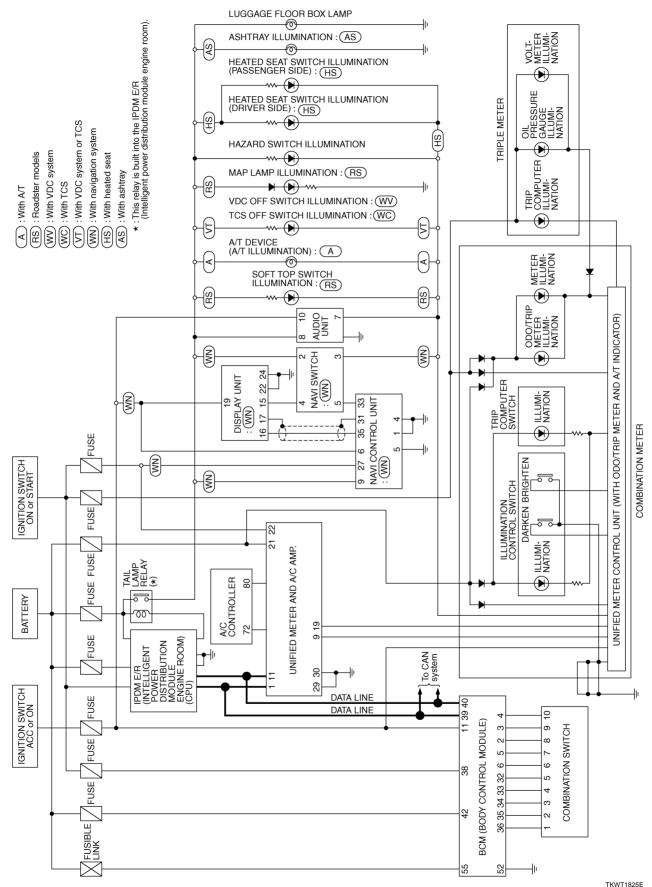
AKS00901

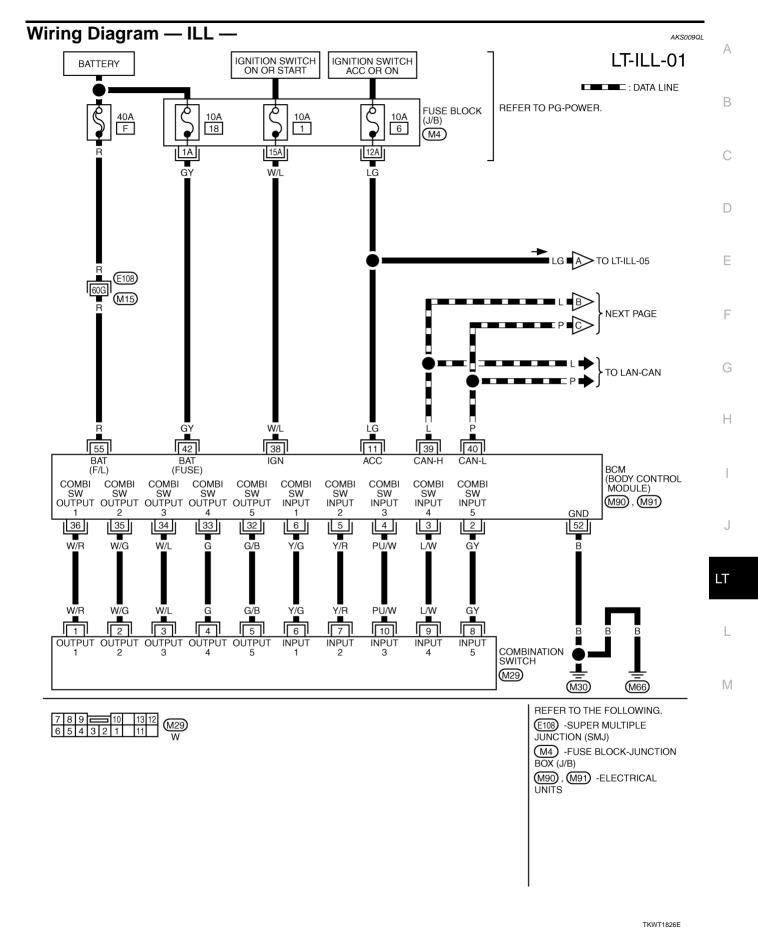
L

Μ

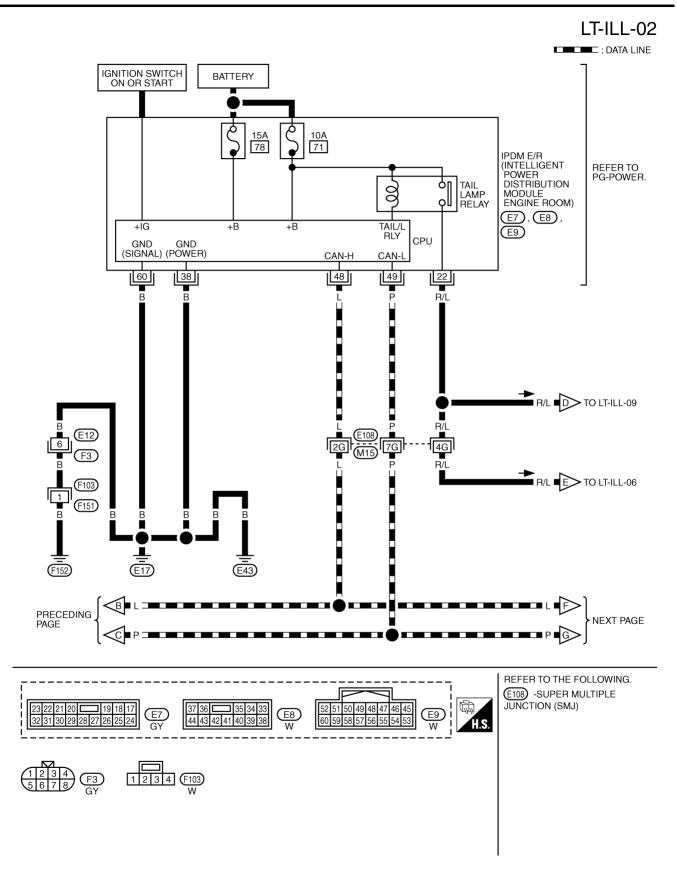
Schematic



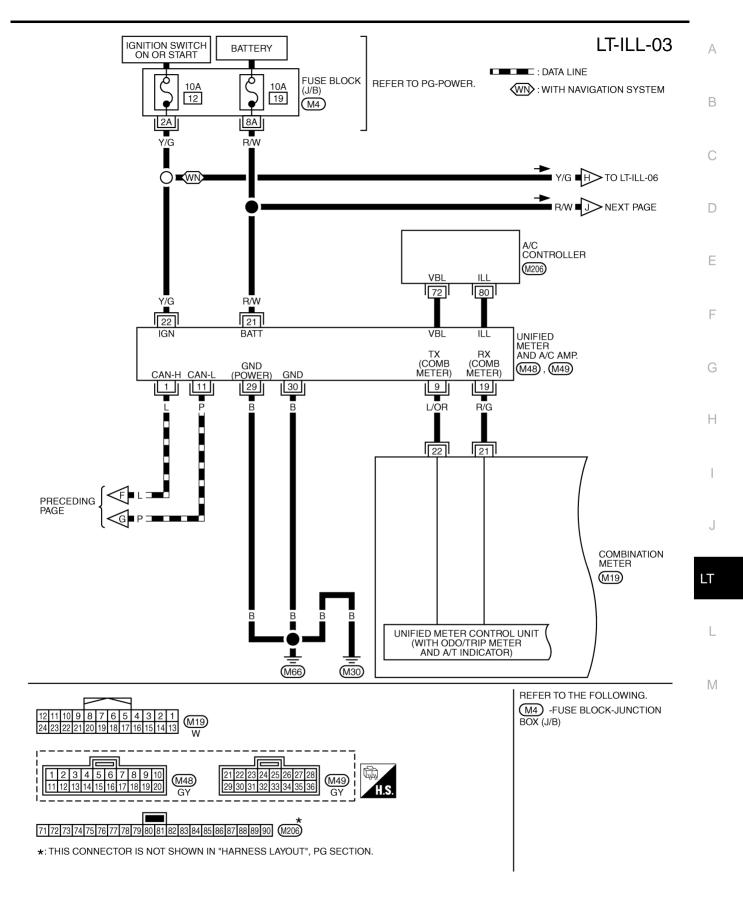




Revision: 2004 December

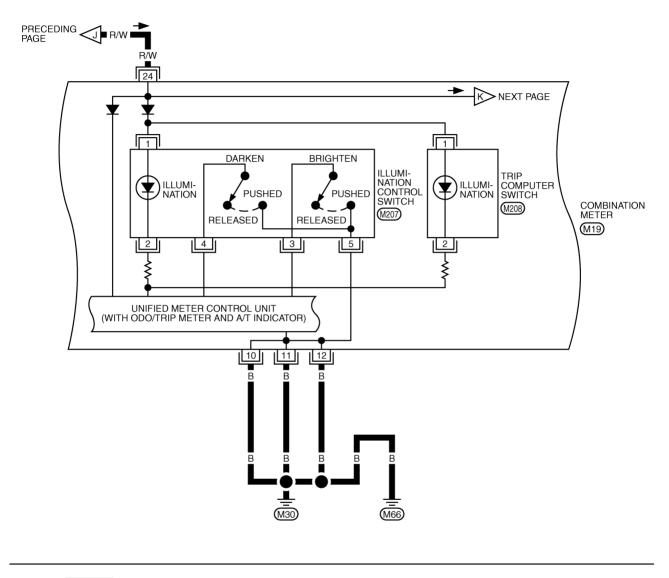


TKWT1827E



TKWT1828E

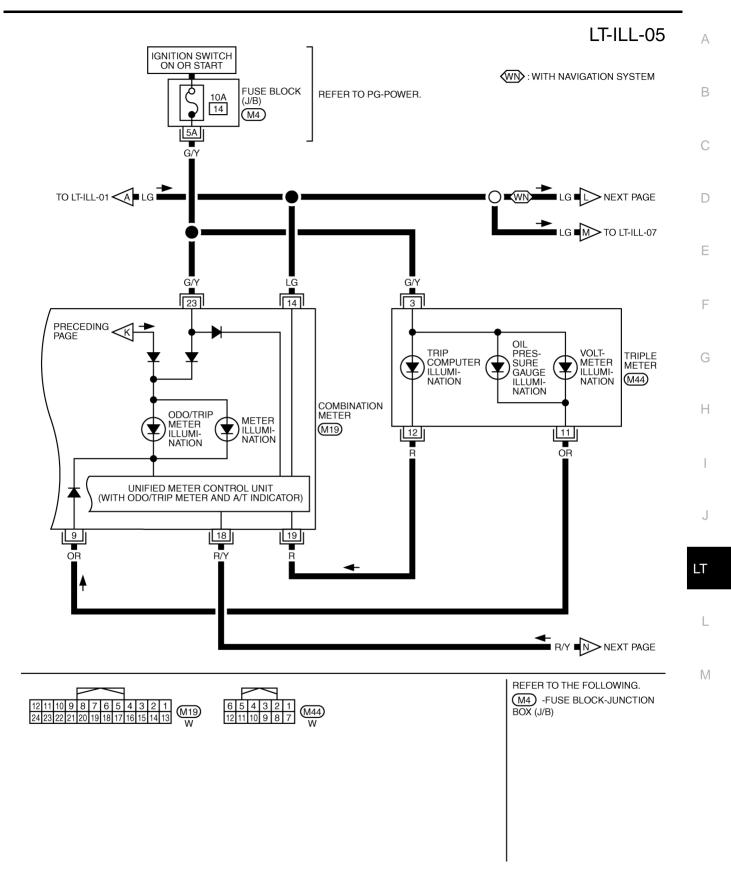
LT-ILL-04



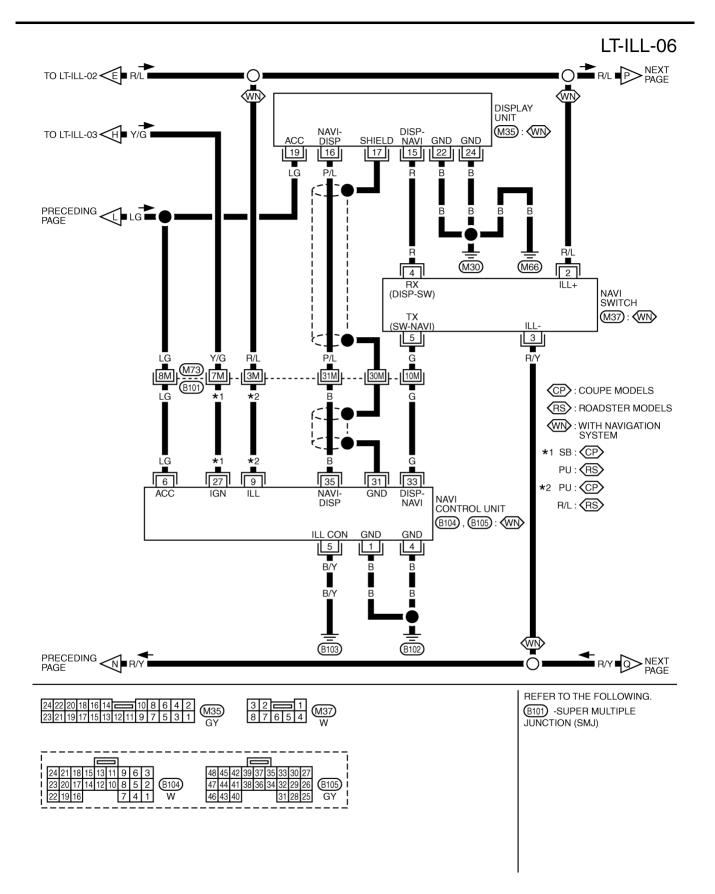


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

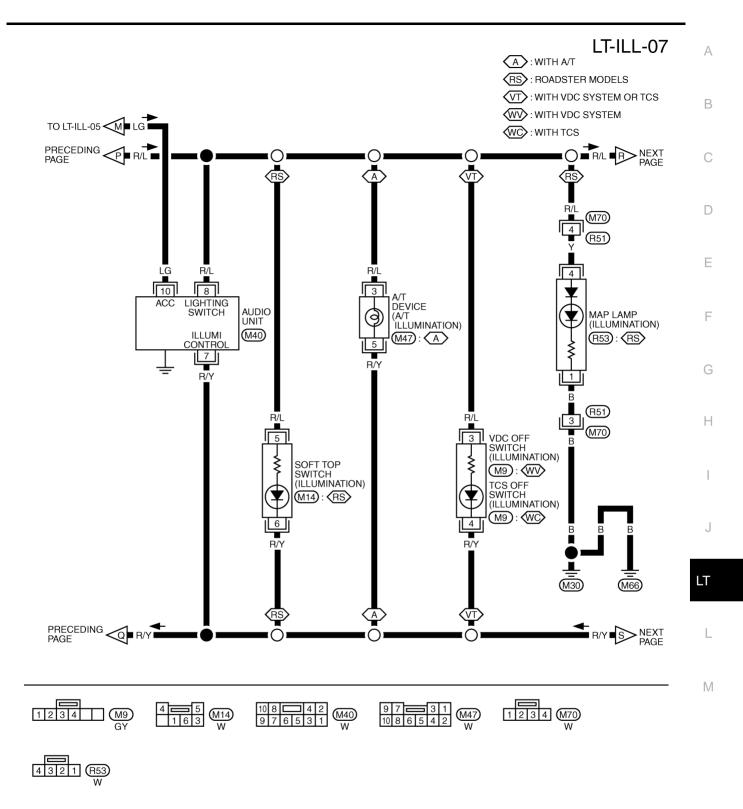
TKWT1829E



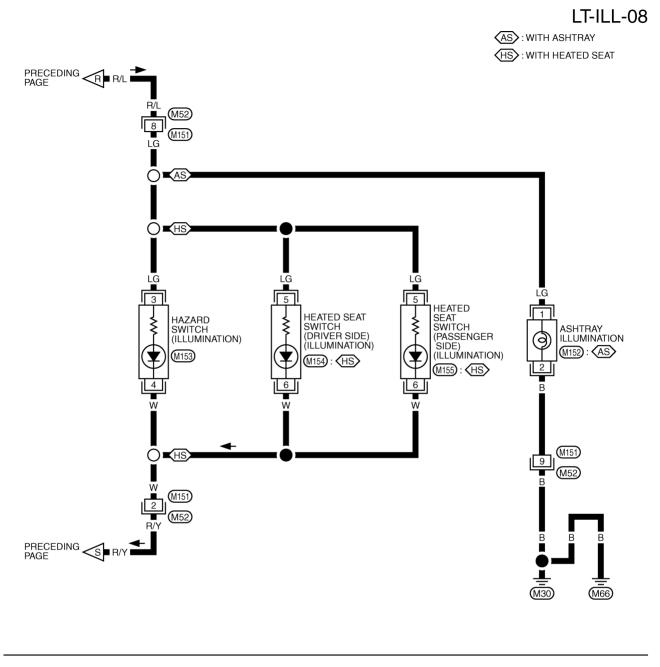
TKWT1830E



TKWT1831E

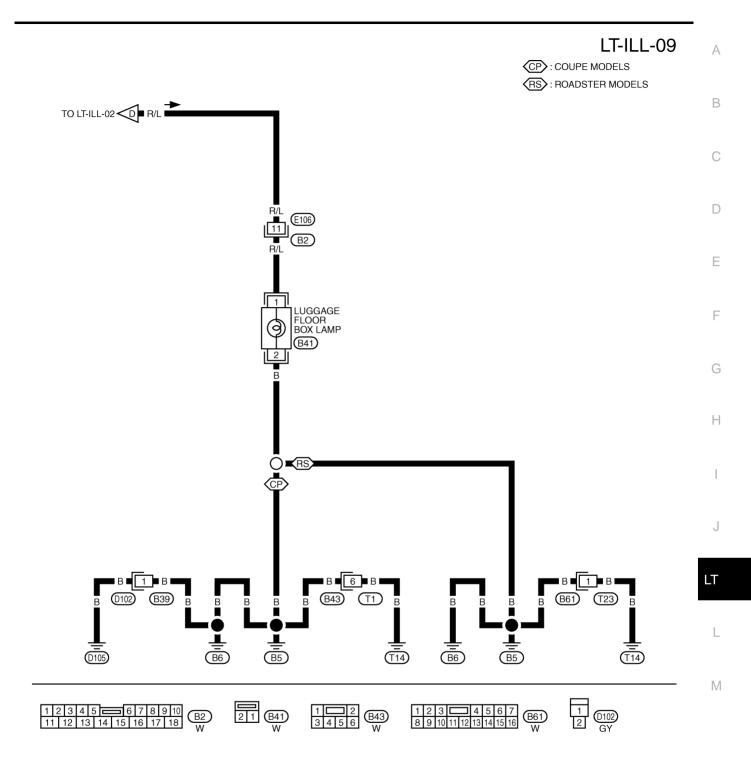


TKWT1832E





TKWT1833E



TKWT1834E

BULB SPECIFICATIONS

BULB SPECIFICATION	ONS	PFP:26297
Headlamp		AKS000WI
	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		AKS000WJ
	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
Deer 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 c	loor mount)	LED
Interior Lamp/Illumi	nation	AKS000WK
Item		Wattage (W)
Rear floor box lamp		1.4
Ashtray illumination lamp		1.4
Map lamp		8
Luggage room lamp		5

Trunk room lamp

Vanity mirror lamp

3.4 1.32