SECTION LT
LIGHTING SYSTEM

CONTENTS

PRECAUTIONS

PFP:00011

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

AKS00AC4

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.**

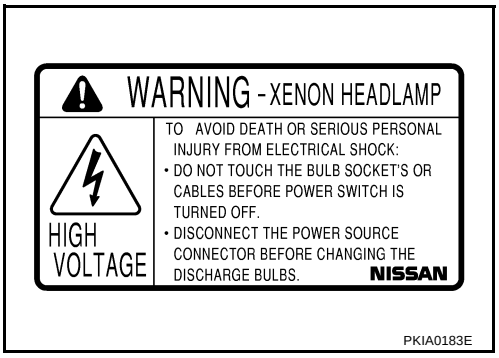
Precautions for Battery Service

AKS003RF

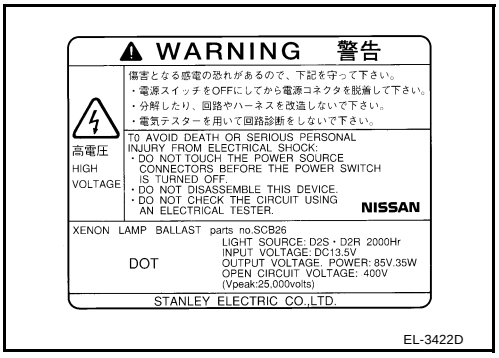
Before disconnecting the battery, lower both the driver and passenger windows. This will prevent any interference between the window edge and the vehicle when the door is opened/closed. During normal operation, the window slightly raises and lowers automatically to prevent any window to vehicle interference.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

General Precautions for Service Operations

AKS000SE



- Never work with wet hands.
- Xenon headlamp includes high voltage generating part. Be sure to disconnect battery negative cable (negative terminal) or power fuse before removing, installing, or touching the xenon headlamp (including lamp bulb).
- Turn the lighting switch OFF before disconnecting and connecting the connector.
- When turning the xenon headlamp on and while it is illuminated, never touch the harness, bulb, and socket of the headlamp.
- When checking the headlamp on/off operation, check it on vehicle and with the power connected to the vehicle-side connector.
- Do not touch the headlamp bulb glass surface with bare hands or allow oil or grease to get on it. Do not touch the headlamp bulb just after the headlamp is turned off, because it is very hot.



- Install the xenon headlamp bulb socket correctly. If it is installed improperly, high-voltage leak or corona discharge may occur that can melt the bulb, connector, and housing. Do not illuminate the xenon headlamp bulb out of the headlamp housing. Doing so can cause fire and harm your eyes.
- When the bulb has burned out, wrap it in a thick vinyl bag and discard. Do not break the bulb.
- Leaving the bulb removed from the headlamp housing for a long period of time can deteriorate the performance of the lens and reflector (dirt, clouding). Always prepare a new bulb and have it on hand when replacing the bulb.
- When adjusting the headlamp aiming, turn the aiming adjustment screw only in the tightening direction. (If it is necessary to loosen the screw, first fully loosen the screw, and then turn it in the tightening direction.)
- Do not use organic solvent (paint thinner or gasoline) to clean lamps and to remove old sealant.

Wiring Diagrams and Trouble Diagnosis

AKS000SF

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:

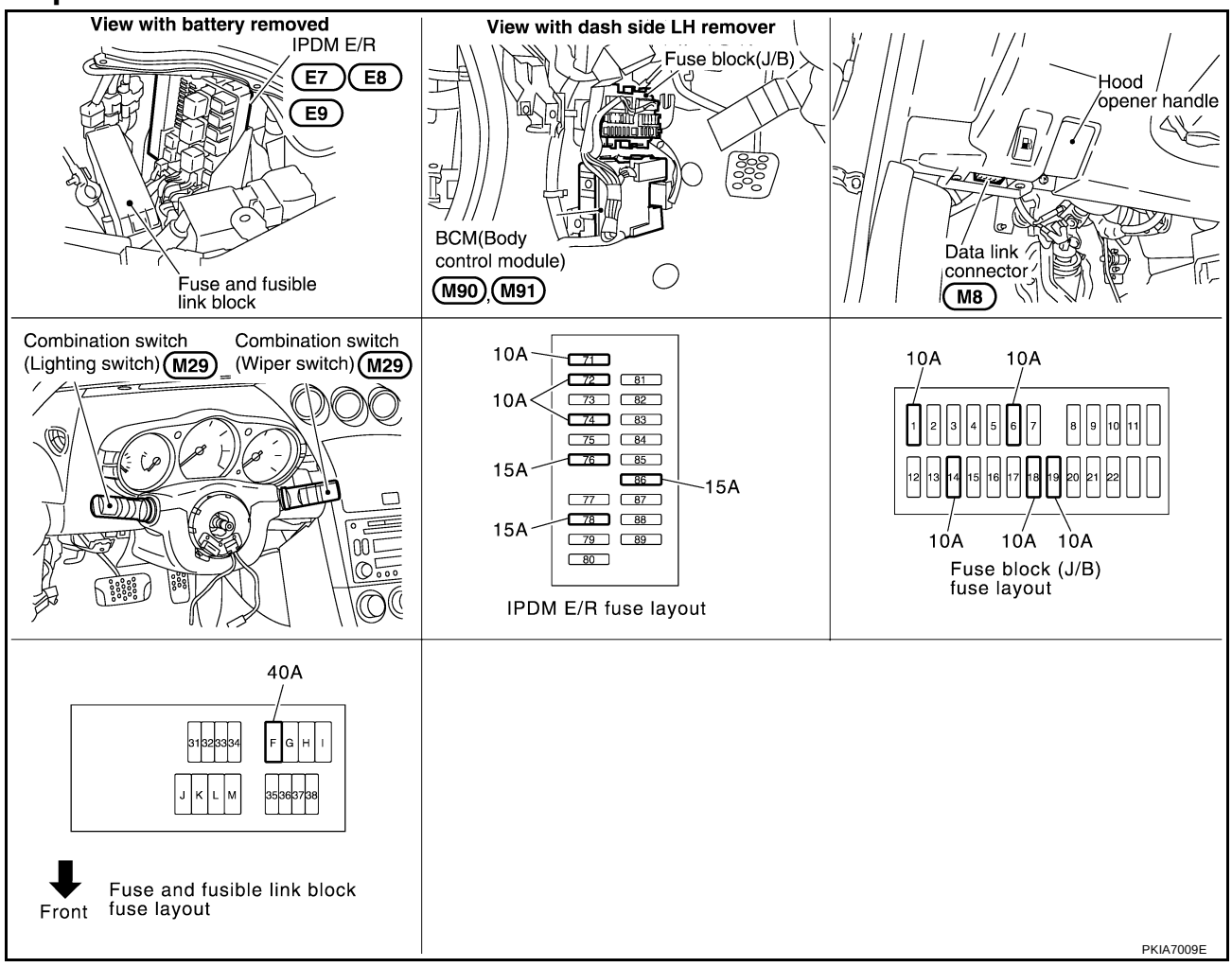
- Refer to GI-11, "HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSES" in GI section.
- Refer to GI-27, "How to Perform Efficient Diagnosis for an Electrical Incident" in GI section.

HEADLAMP (FOR USA) - XENON TYPE -

PFP:26010

Component Parts and Harness Connector Location

AKS009NQ



System Description

AKS009NR

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

OUTLINE

Power is supplied at all times

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

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

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

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

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

Ground is supplied

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

Low Beam Operation

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

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

Ground is supplied

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

With power and ground supplied, low beam headlamps illuminate.

High Beam Operation/Flash-to-Pass Operation

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

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

Ground is supplied

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

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

With power and ground supplied, high beam headlamps illuminate.
Unified meter and A/C amp. receives signal from BCM across CAN communication lines, and then combination meter indicator illuminates high beam.

COMBINATION SWITCH READING FUNCTION

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

EXTERIOR LAMP BATTERY SAVER CONTROL

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

VEHICLE SECURITY SYSTEM

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

XENON HEADLAMP

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

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

CAN Communication System Description

AKS009NS

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

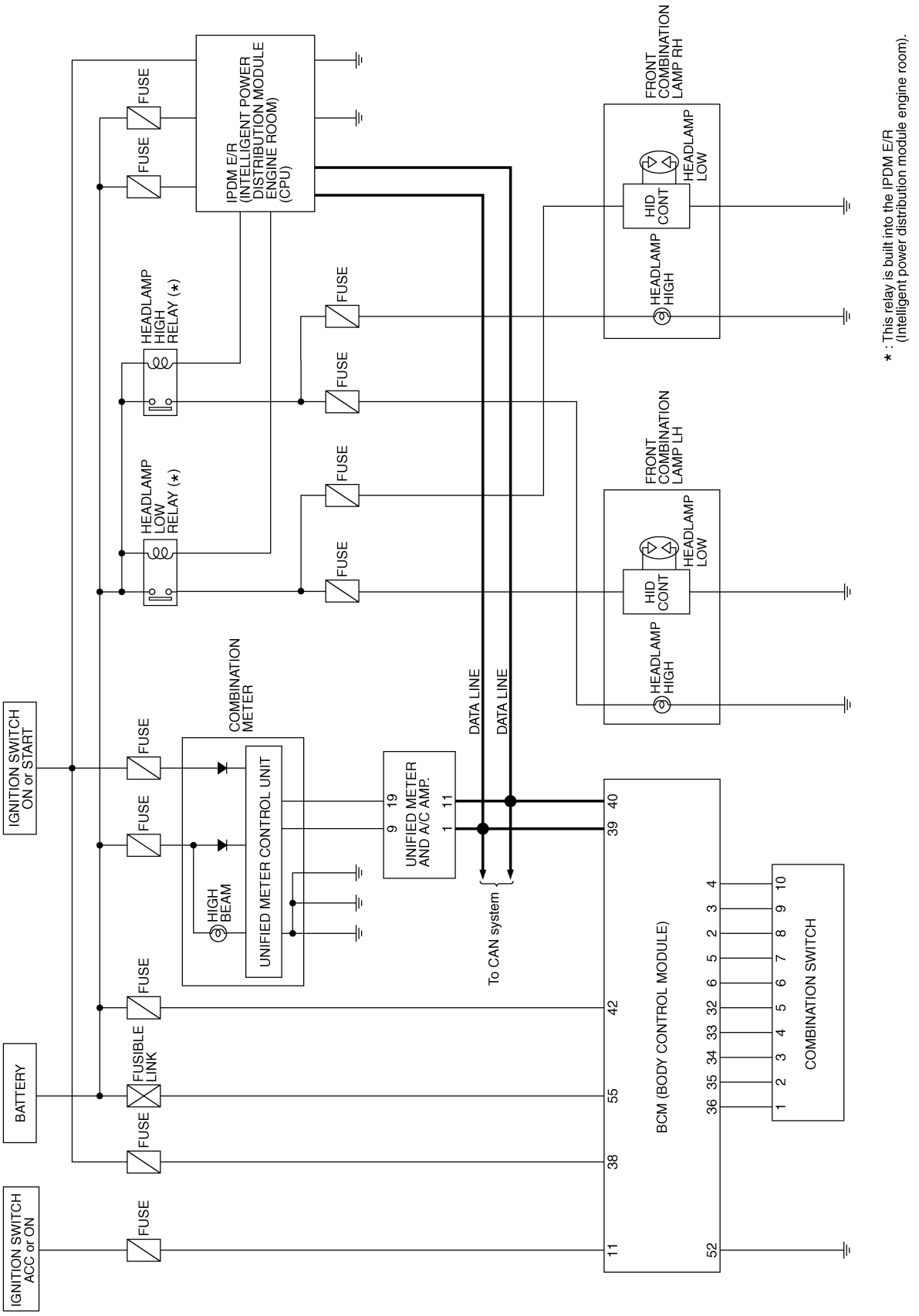
CAN Communication Unit

AKS009NT

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

Schematic

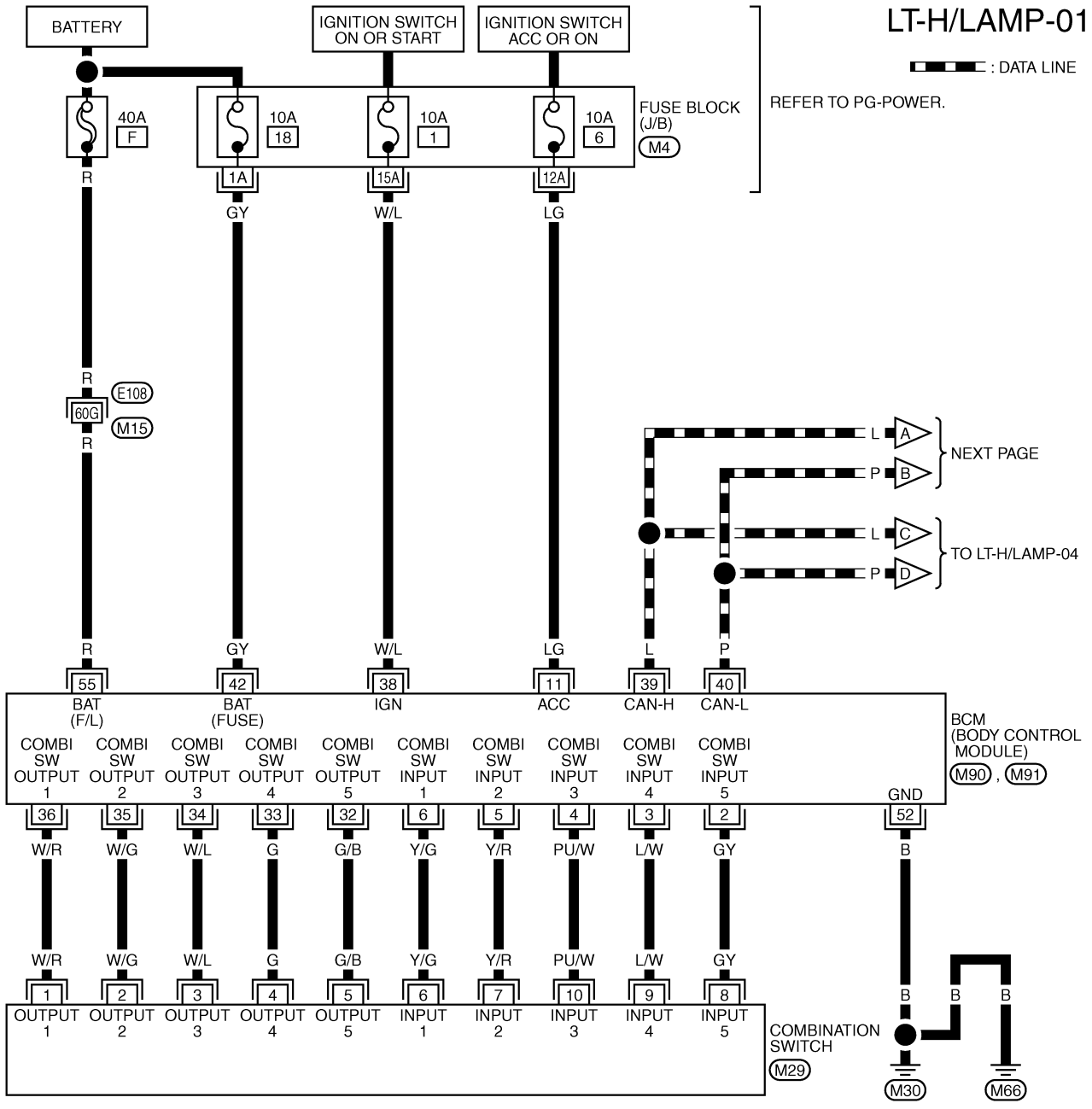
AKS009NU



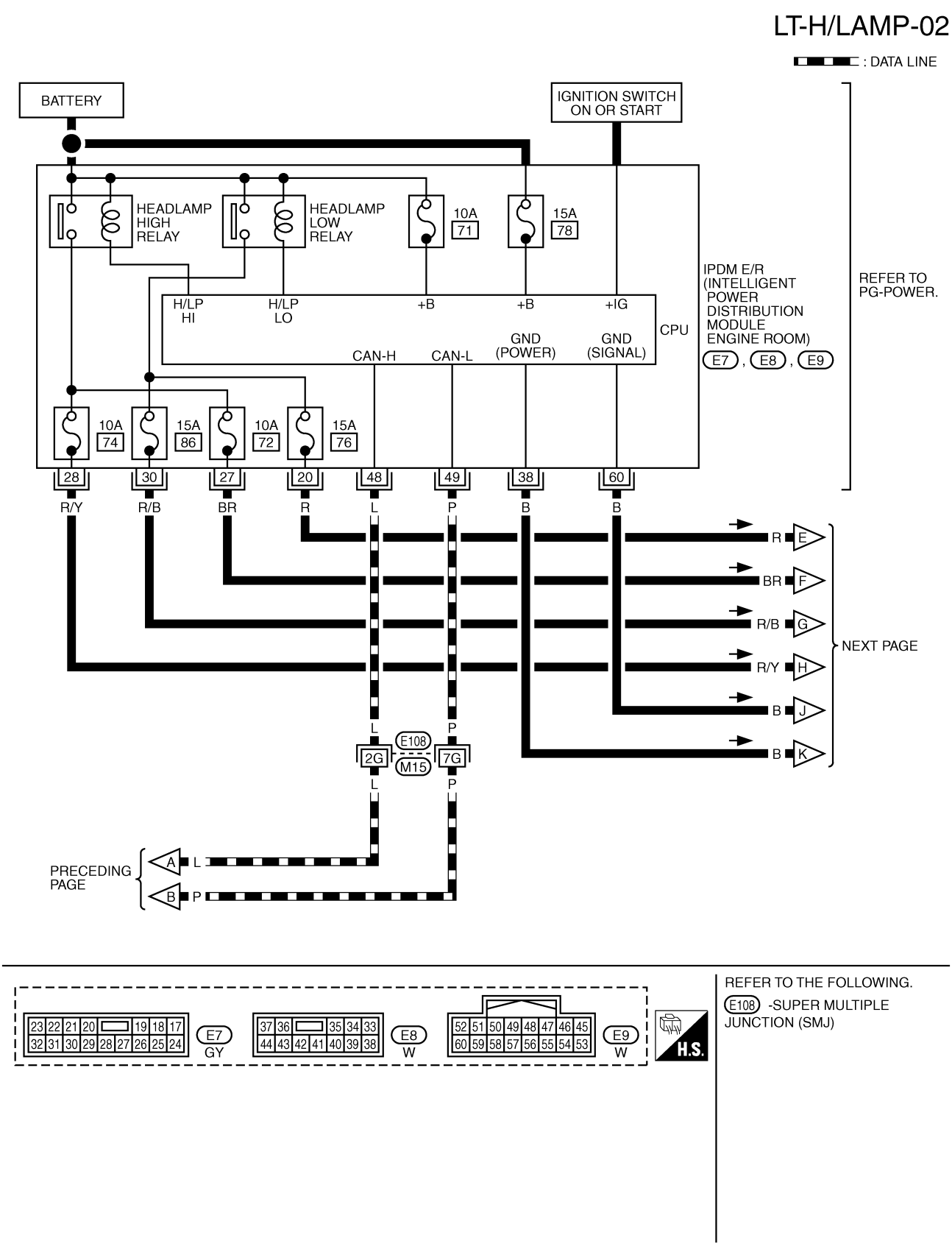
TKWT1766E

Wiring Diagram — H/LAMP —

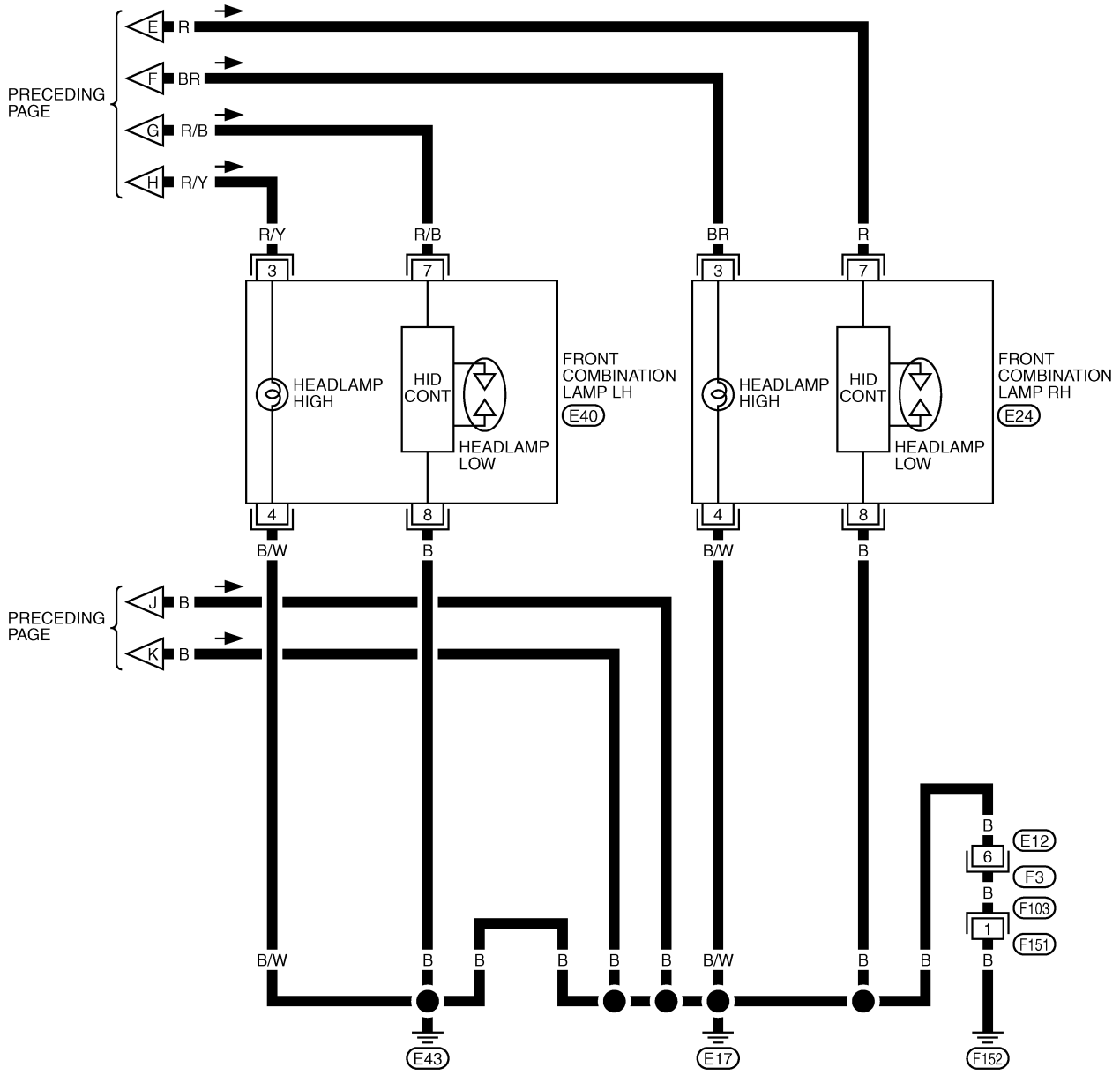
AKS009NV

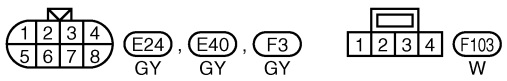


TKWT1767E


LT-H/LAMP-02
: DATA LINE
BATTERY
IGNITION SWITCH ON OR START
HEADLAMP HIGH RELAY
HEADLAMP LOW RELAY
10A 71
15A 78
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E7 , E8 , E9
REFER TO PG-POWER.
H/LP HI
H/LP LO
+B
+B
+IG
CPU
CAN-H
CAN-L
GND (POWER)
GND (SIGNAL)
10A 74
15A 86
10A 72
15A 76
28
30
27
20
48
49
38
60
R/Y
R/B
BR
R
L
P
B
B
R E
BR F
R/B G
R/Y H
B J
B K
NEXT PAGE
E108
M15
2G
7G
PRECEDING PAGE
A L
B P
REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
E7 GY
E8 W
E9 W
H.S.
TKWT1768E

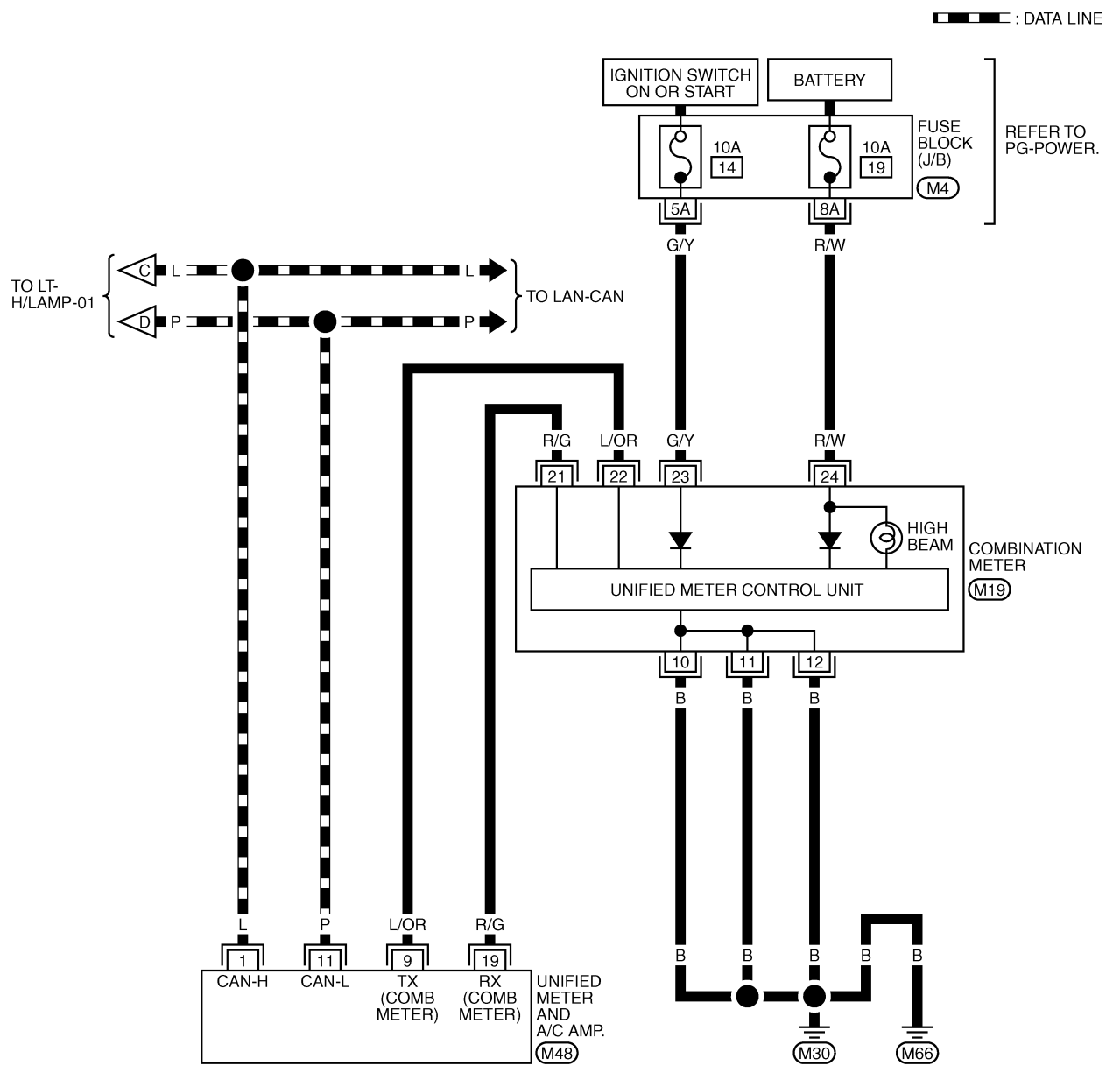
LT-H/LAMP-03

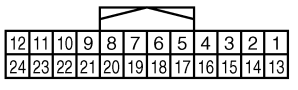




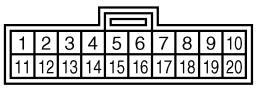
TKWT1769E

LT-H/LAMP-04





M19
W



M48
GY

H.S.

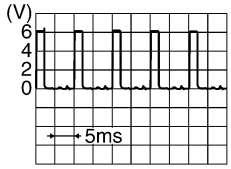
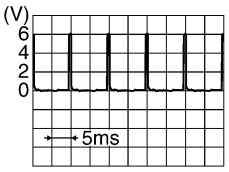
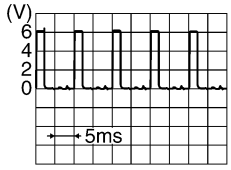
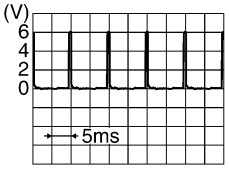
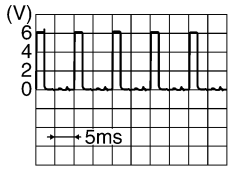
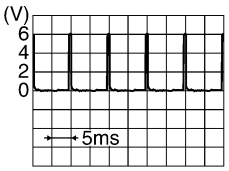
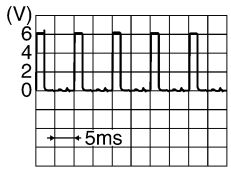
REFER TO THE FOLLOWING.

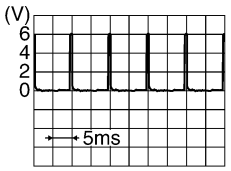
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT1728E

Terminals and Reference Values for BCM

AKS00AOK

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

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

Terminals and Reference Values for IPDM E/R

AKS009QM

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

How to Proceed With Trouble Diagnosis

AKS009QN

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

Preliminary Check

AKS009QO

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check fuses for blown-out.

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

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

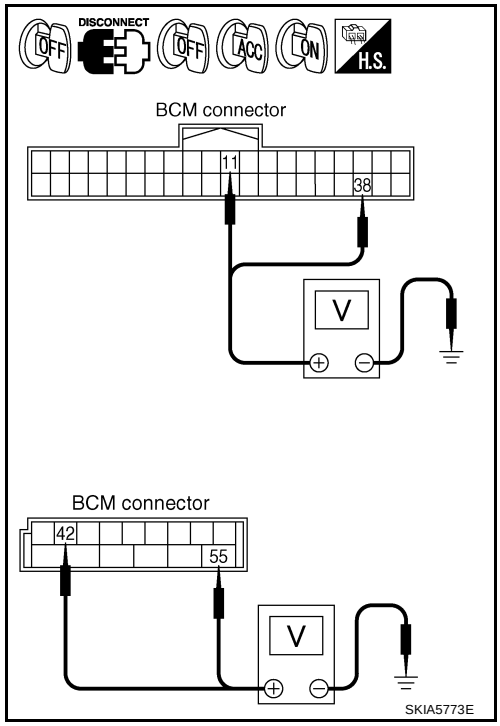
OK or NG

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



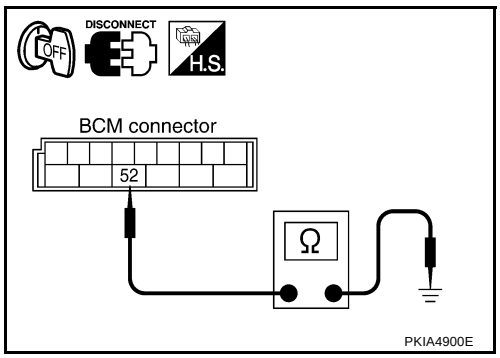
OK or NG

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

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



OK or NG

OK >> INSPECTION END
NG >> Check ground circuit harness.

CONSULT-II Functions (BCM)

AKS009NZ

CONSULT-ll performs the following functions communicating with BCM.

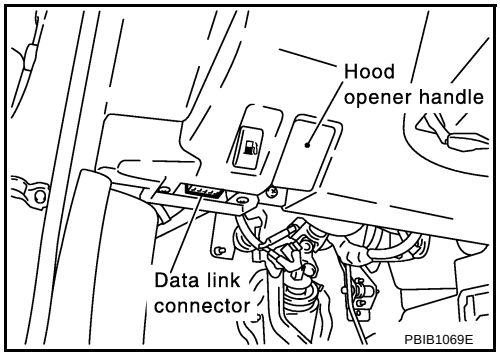
BCM diagnosis part	Check item, diagnosis mode	Description
HEADLAMP	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
BCM	CAN DIAG SUPPORT MNTR	The result of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

CONSULT-II BASIC OPERATION

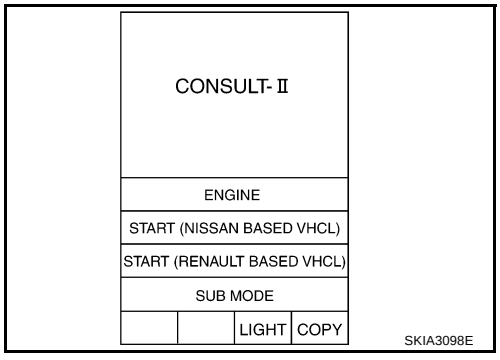
CAUTION:

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

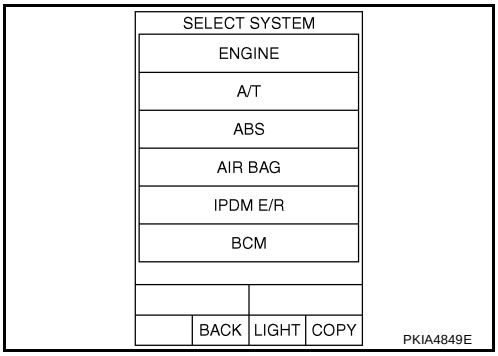
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



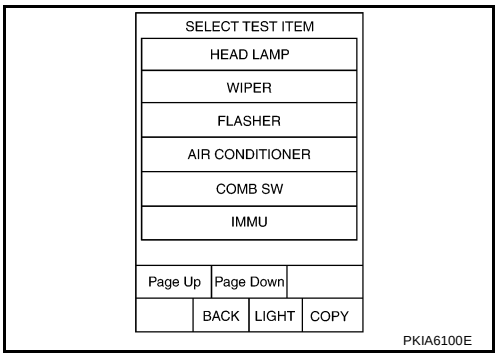
2. Touch “START (NISSAN BASED VHCL)”.



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



4. Touch “HEAD LAMP” on “SELECT TEST ITEM” screen.



WORK SUPPORT

Operation Procedure

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
BATTERY SAVER SET	Exterior lamp battery saver control mode can be changed in this mode. Selects exterior lamp battery saver control mode between two ON/OFF.	ON	×
		OFF	—

DATA MONITOR

Operation Procedure

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

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

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

Display Item List

Monitor item		Contents
IGN ON SW	“ON/OFF”	Displays “IGN position (ON)/OFF, ACC position (OFF)” judged from the ignition switch signal.
ACC ON SW	“ON/OFF”	Displays “ACC (ON)/OFF, Ignition OFF (OFF)” status judged from ignition switch signal.
HI BEAM SW	“ON/OFF”	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
HEAD LAMP SW 1	“ON/OFF”	Displays status (headlamp switch 1: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
HEAD LAMP SW 2	“ON/OFF”	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
LIGH SW 1 ST	“ON/OFF”	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
AUTO LIGHT SW	“ON/OFF”	—
PASSING SW	“ON/OFF”	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW[NOTE]	“ON/OFF”	—
DOOR SW - DR	“ON/OFF”	Displays status of driver door as judged from driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - AS	“ON/OFF”	Displays status of passenger door as judged from passenger door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RR[NOTE]	“OFF”	—
DOOR SW - 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 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)

AKS009QP

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

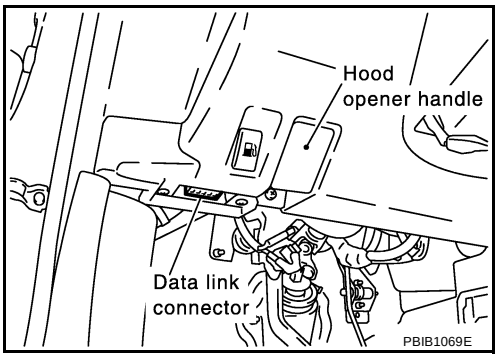
Check Item, Diagnosis Mode	Description
SELF-DIAGNOSTIC RESULTS	IPDM E/R performs self-diagnosis of CAN communication.
DATA MONITOR	The input/output data of IPDM E/R is displayed in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST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

CONSULT-II BASIC OPERATION

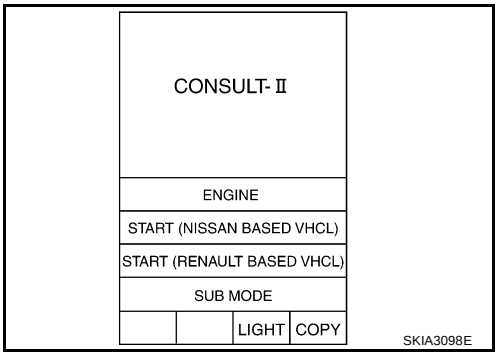
CAUTION:

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

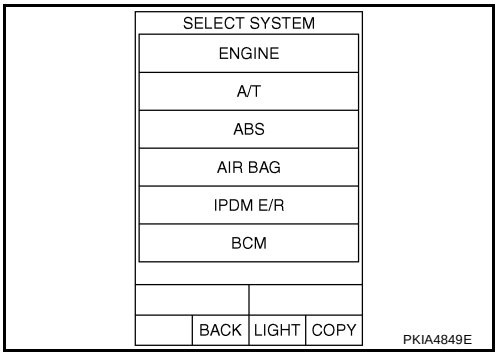
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



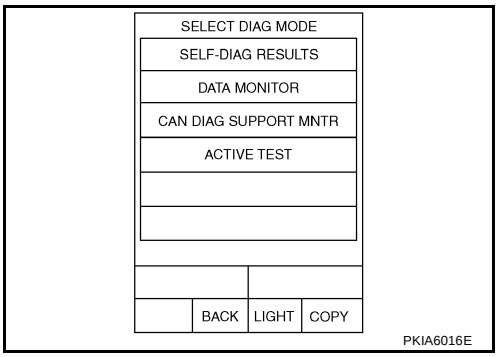
2. Touch “START (NISSAN BASED VHCL)”.



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



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



DATA MONITOR

Operation Procedure

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

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

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)

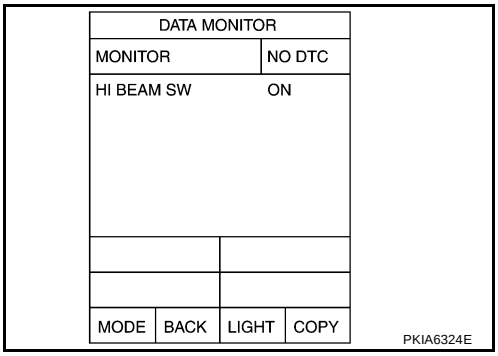
AKS00AOL

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 HIGH BEAM position : HI BEAM SW ON



Without CONSULT-II

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

OK or NG

OK >> GO TO 2.

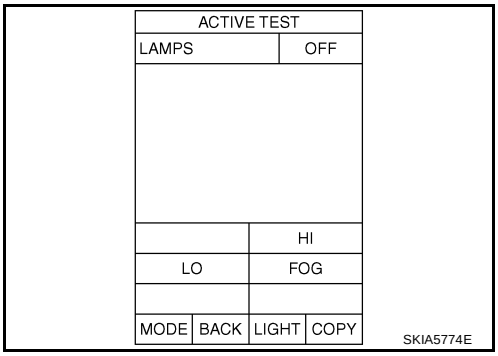
NG >> Check lighting switch. Refer to LT-170, "Combination Switch Inspection" .

2. HEADLAMP ACTIVE TEST

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

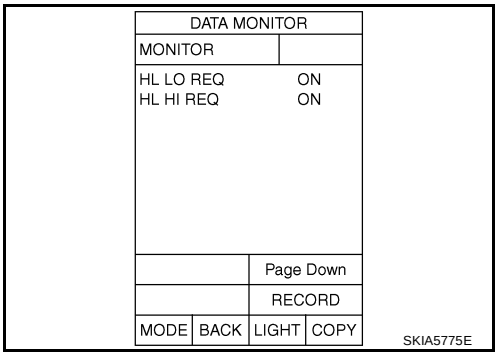
OK >> GO TO 3.

NG >> GO TO 4.

3. CHECK IPDM E/R

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

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



OK or NG

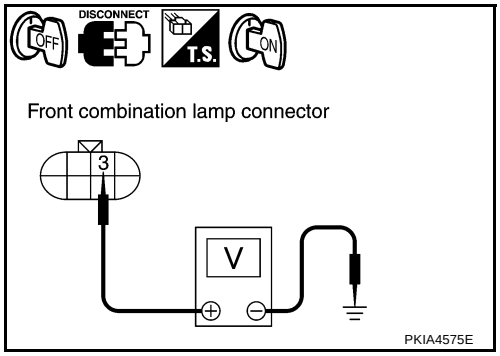
OK >> Replace IPDM E/R.

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

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.
6. 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)		
RH	E24	3 (BR)	Ground	Battery voltage
LH	E40	3 (R/Y)		

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.

Terminals				Voltage
(+)			(-)	
Connector		Terminal (Wire color)		
RH	E24	3 (BR)	Ground	Battery voltage
LH	E40	3 (R/Y)		

OK or NG

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

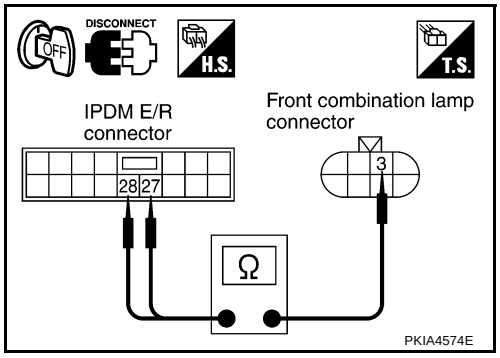
5. CHECK HEADLAMP CIRCUIT

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

27 (BR) – 3 (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 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.

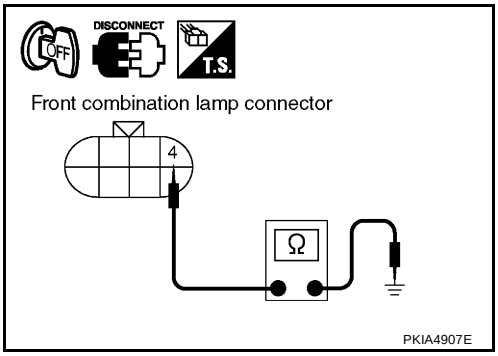
6. CHECK HEADLAMP GROUND

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 bulb.
NG >> Repair harness or connector.

Headlamp High Beam Does Not Illuminate (One Side)

AKS00AOM

1. CHECK BULB

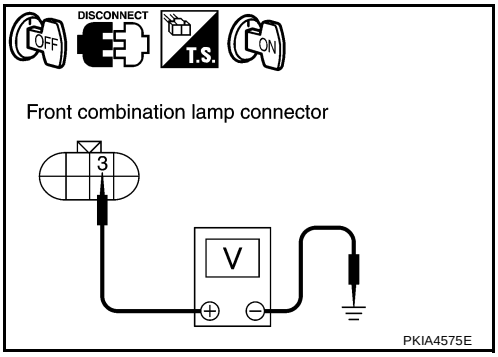
Check halogen bulb of lamp which does not illuminate.

OK or NG

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

2. CHECK HEADLAMP INPUT SIGNAL

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



Terminals				Voltage
(+)			(-)	
Connector		Terminal (Wire color)		
RH	E24	3 (BR)	Ground	Battery voltage
LH	E40	3 (R/Y)		

OK or NG

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

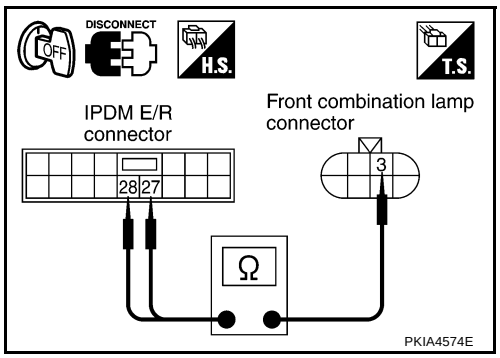
3. CHECK HEADLAMP CIRCUIT

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

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

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



OK or NG

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

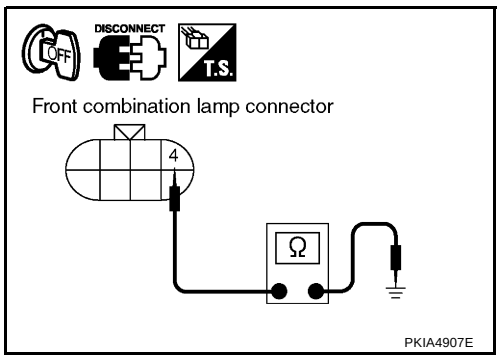
4. CHECK HEADLAMP GROUND

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

AKS00AON

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)

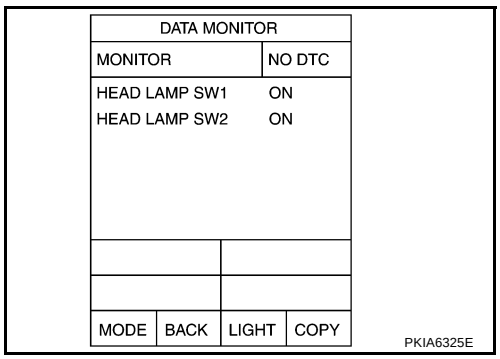
AKS00AOO

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 position : HEAD LAMP SW 1 ON
: HEAD LAMP SW 2 ON



Without CONSULT-II

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

OK or NG

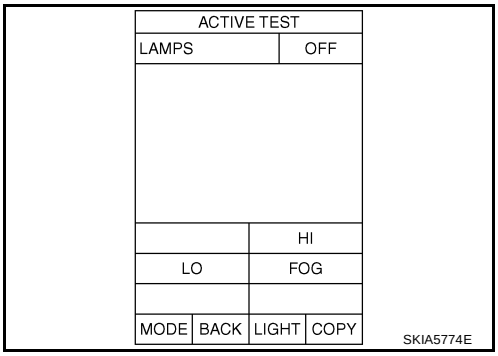
OK >> GO TO 2.
NG >> Check lighting switch. Refer to LT-170, "Combination Switch Inspection" .

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 “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

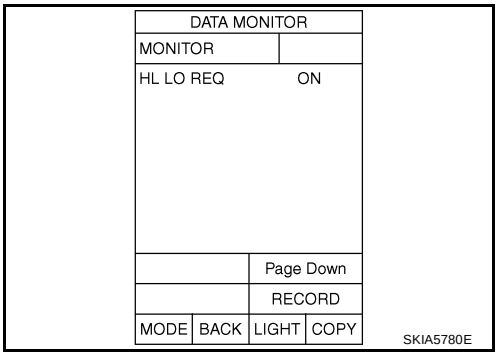
OK >> GO TO 3.
NG >> GO TO 4.

3. CHECK IPDM E/R

With CONSULT-II

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

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



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 position : HL LO REQ ON

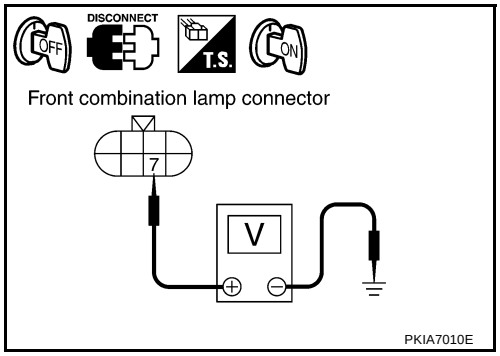
OK or NG

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

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

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

OK or NG

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

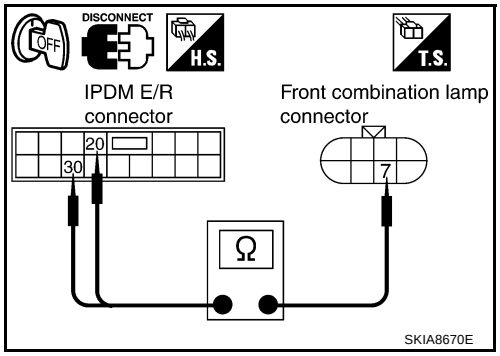
5. CHECK HEADLAMP CIRCUIT

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.

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

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



OK or NG

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

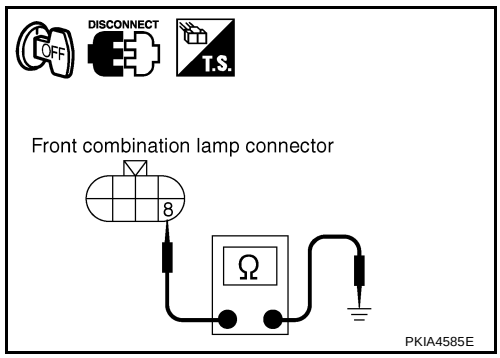
6. CHECK HEADLAMP GROUND

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

8 (B) – Ground : Continuity should exist.

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

8 (B) – Ground : Continuity should exist.



OK or NG

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

NG >> Repair harness or connector.

Headlamp Low Beam Does Not Illuminate (One Side)

AKS00AOP

1. CHECK BULB

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

OK or NG

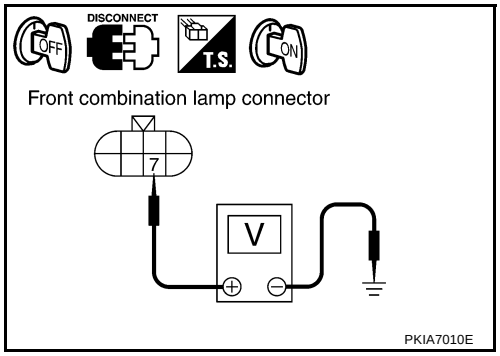
OK >> GO TO 2.

NG >> Repair malfunctioning part.

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.



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

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

OK or NG

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

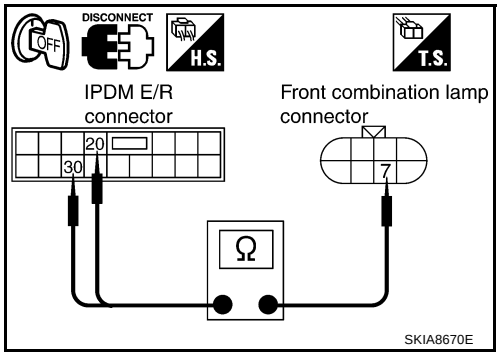
3. CHECK HEADLAMP CIRCUIT

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.

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

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



OK or NG

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

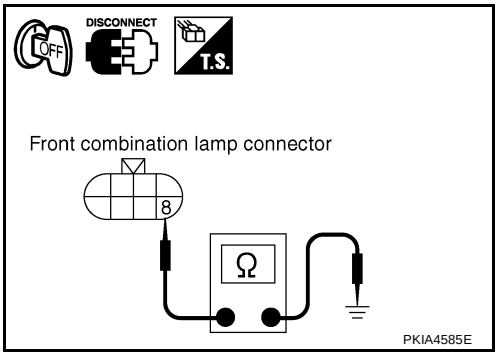
4. CHECK HEADLAMP GROUND

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

   8 (B) – Ground : Continuity should exist.

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

   8 (B) – Ground : Continuity should exist.



OK or NG

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

Headlamps Does Not Turn OFF

AKS00AOQ

1. CHECK HEADLAMP TURN OFF

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

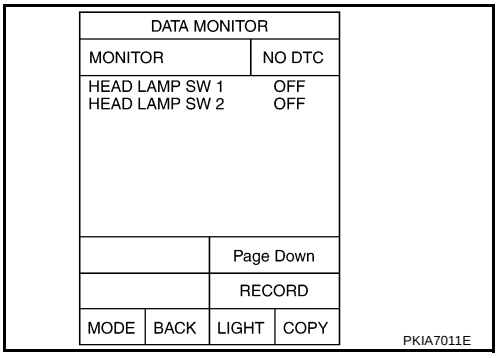
OK or NG

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

2. CHECK COMBINATION SWITCH INPUT SIGNAL

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

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



OK or NG

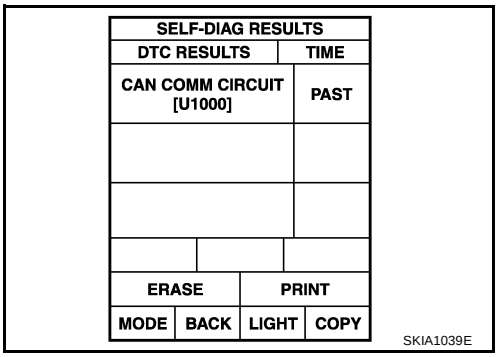
OK >> Replace IPDM E/R.
NG >> Check lighting switch. Refer to LT-170, "Combination Switch Inspection" .

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)" .



CAUTION:

AKS009RK

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

Xenon Headlamp Trouble Diagnosis

AKS009RL

1. CHECK 1: XENON HEADLAMP LIGHTING

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

OK or NG

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

2. CHECK 2: XENON HEADLAMP LIGHTING

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

OK or NG

OK >> Replace HID control unit.
NG >> GO TO 3.

3. CHECK 3: XENON HEADLAMP LIGHTING

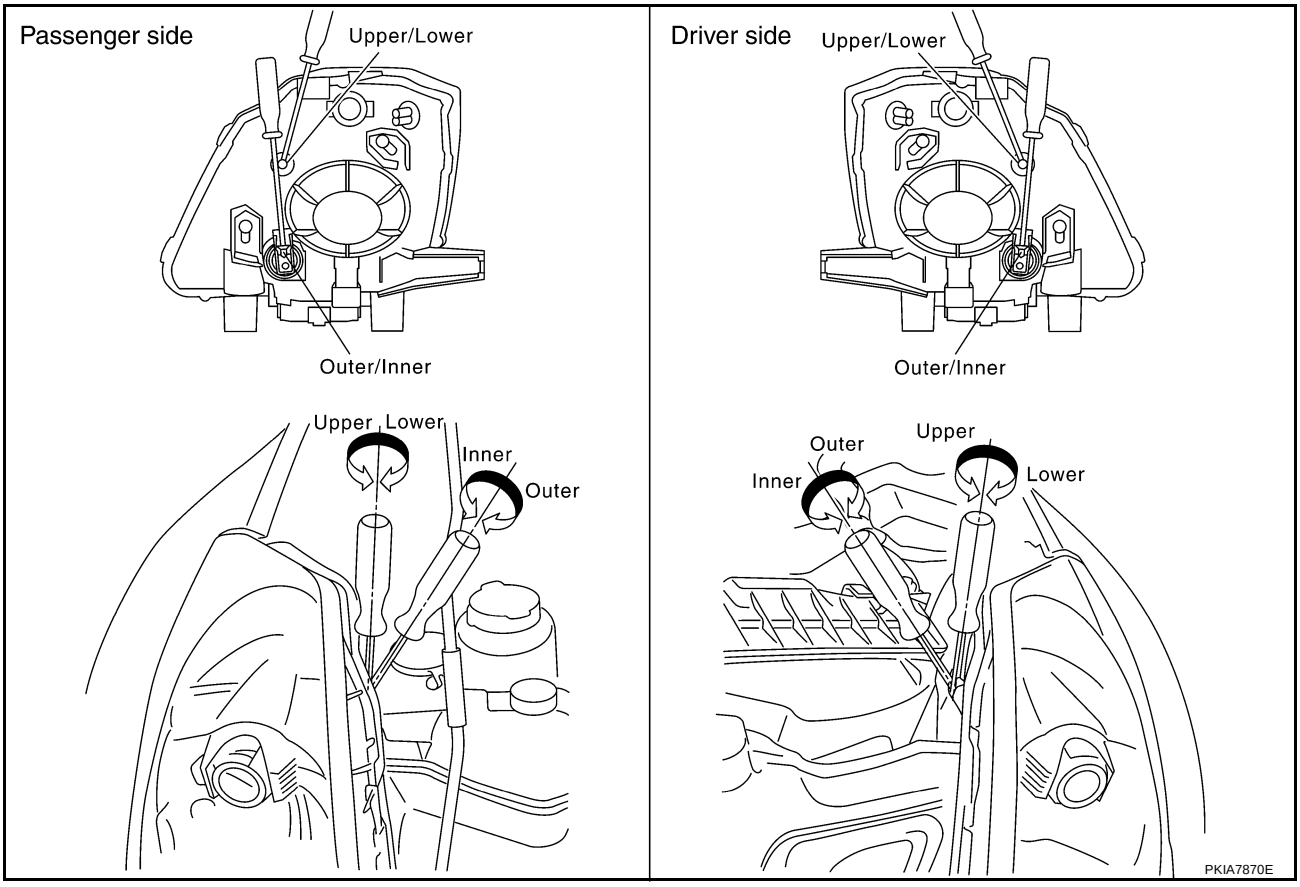
Install normal xenon lamp housing assembly to corresponding xenon headlamp, and check if lamp lights up.

OK or NG

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

Aiming Adjustment

AKS009O6



PREPARATION BEFORE ADJUSTING

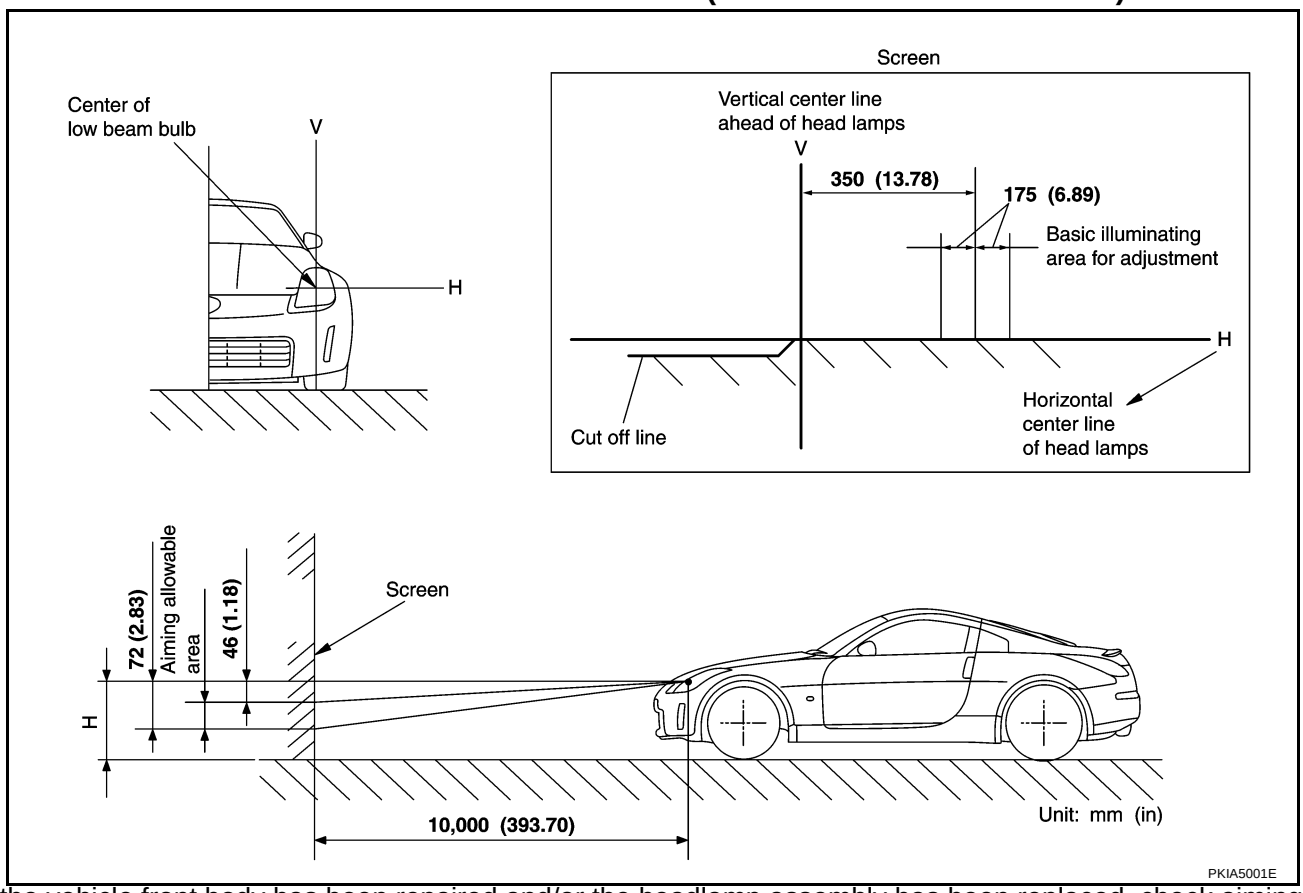
For details, refer to the regulations in your own country.
Before performing aiming adjustment, check the following.

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

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

ADJUSTMENT USING AN ADJUSTMENT SCREEN (LIGHT/DARK BORDERLINE)



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

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

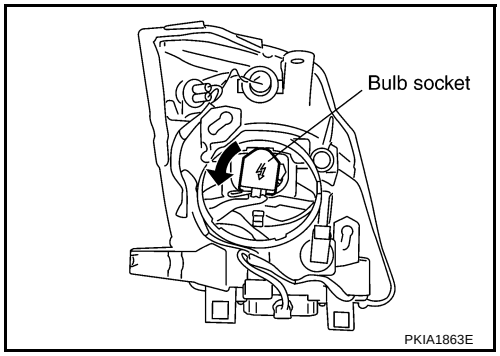
Bulb Replacement

AKS009O7

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 LT-33, "Aiming Adjustment" .



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

HEADLAMP (LOWER) HIGH BEAM

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

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

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

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

PARKING LAMP (CLEARANCE LAMP)

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

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

FRONT TURN SIGNAL LAMP

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

Front turn signal lamp : 12V - 21W

FRONT SIDE MARKER LAMP

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

Front side marker lamp : 12V - 5W

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

Removal and Installation

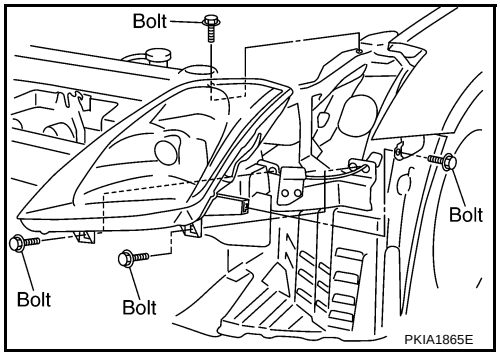
AKS009O8

REMOVAL

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

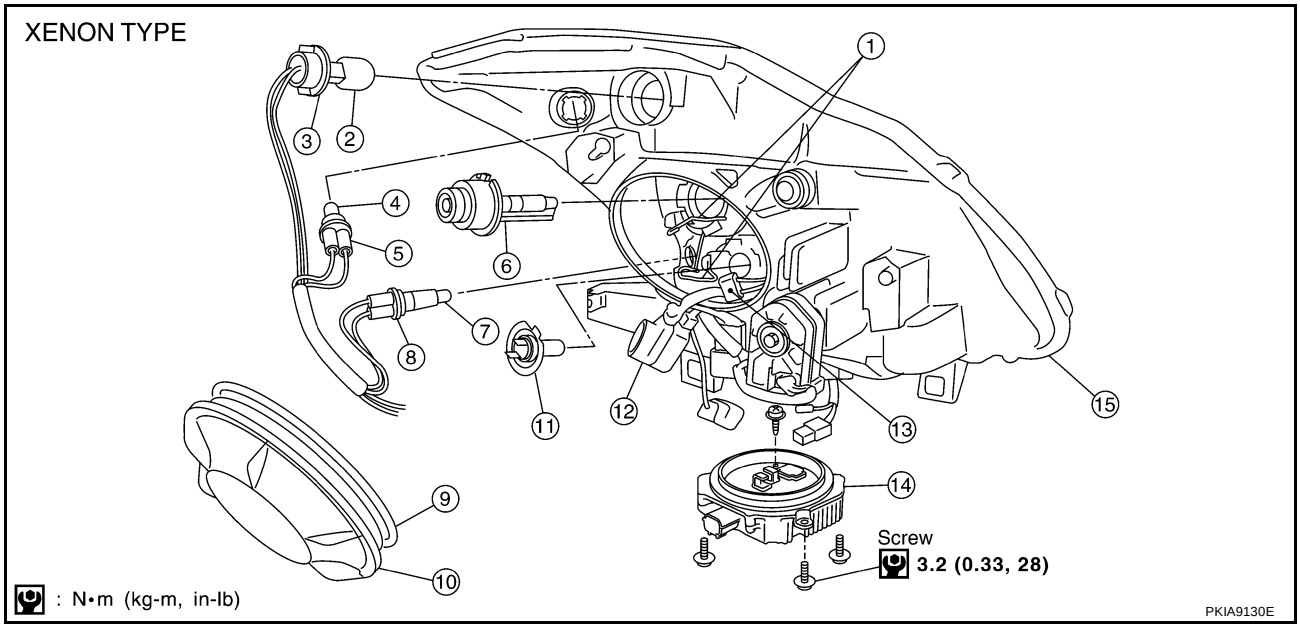
Installation in the reverse order if removal. Be careful of the following.

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

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

Disassembly and Assembly

AKS009O9



1. Retaining spring	2. Front turn signal lamp bulb	3. Front turn signal lamp bulb socket
4. Side marker lamp bulb	5. Side marker lamp bulb socket	6. Xenon bulb
7. Parking lamp (Clearance lamp) bulb	8. Parking lamp (Clearance lamp) bulb socket	9. Seal rubber
10. Plastic cap	11. Halogen bulb (high)	12. Xenon bulb socket
13. Halogen bulb socket	14. HID C/U	15. Headlamp housing 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)

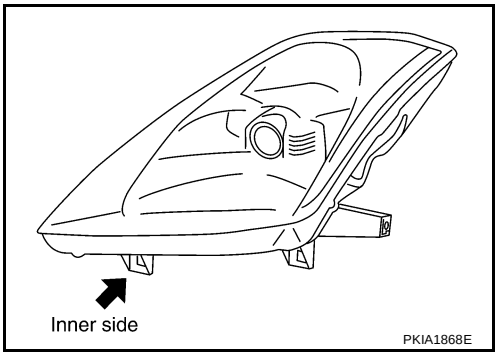
CAUTION:

- **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**

Servicing to Replace Headlamps When Damaged

AKS009OA

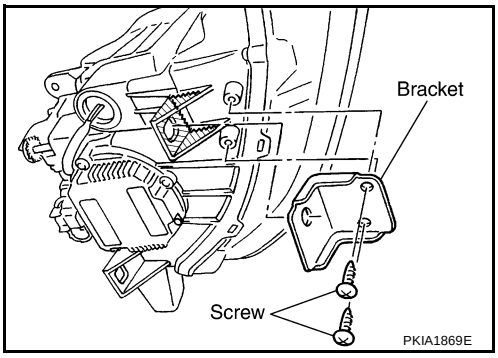
If only installation part as shown in the figure is damaged, and headlamp housing itself is not damaged, repair can be completed easily by installing correction brackets.



INSTALLATION OF HEADLAMP BRACKET

1. Remove headlamps. Refer to LT-36, "Removal and Installation" .
2. Cut damaged section of installation part, then shape with 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**

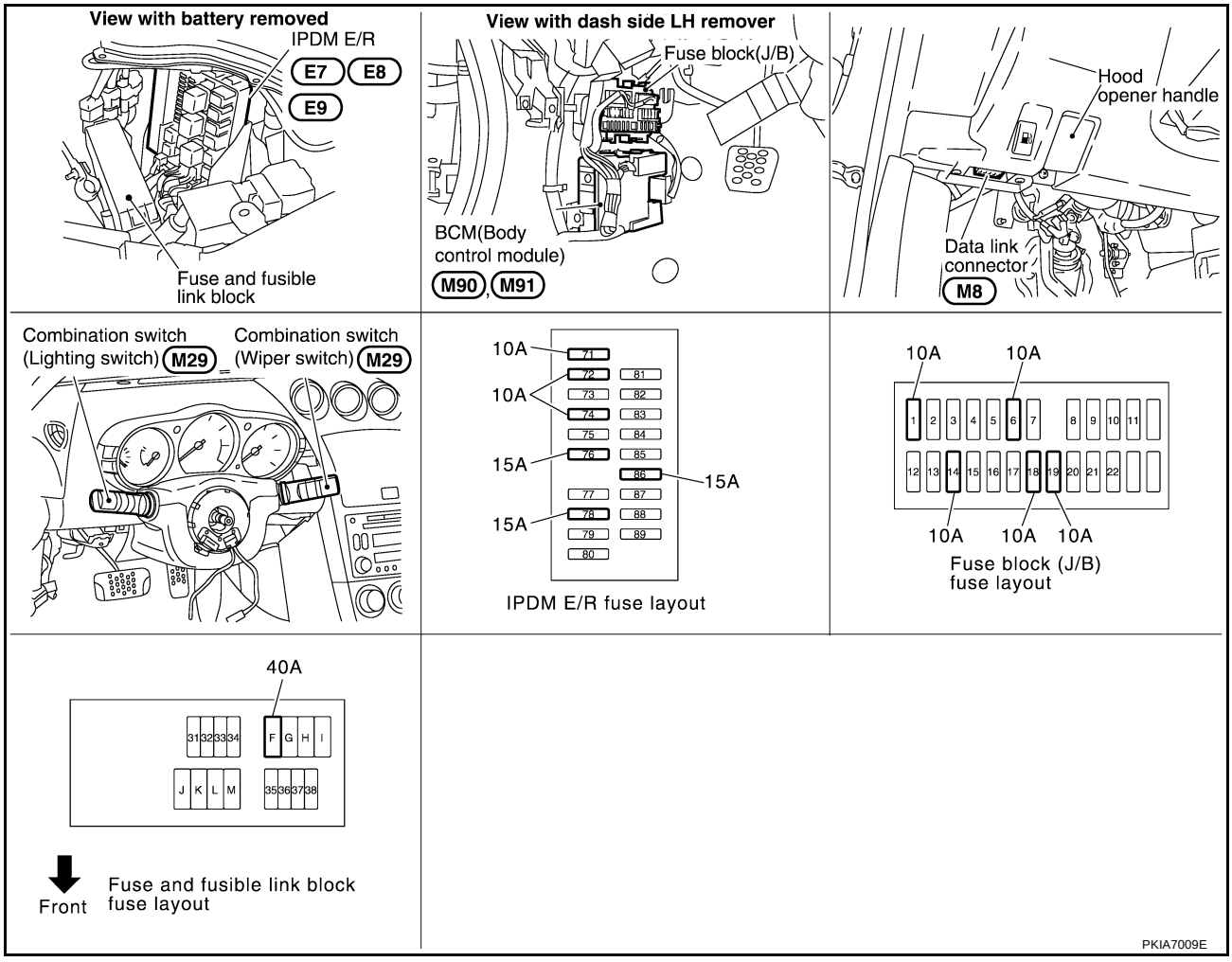


HEADLAMP (FOR USA) - CONVENTIONAL TYPE -

PFP:26010

Component Parts and Harness Connector Location

AKS009P1



System Description

AKS009P2

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

OUTLINE

Power is supplied at all times

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

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

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

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

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

Ground is supplied

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

Low Beam Operation

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

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

Ground is supplied

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

High Beam Operation/Flash-to-Pass Operation

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

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

Ground is supplied

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

With power and ground supplied, high beam headlamps illuminate.
Unified meter and A/C amp. receives signal from BCM across CAN communication lines, and then combination meter indicator illuminates high beam.

COMBINATION SWITCH READING FUNCTION

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

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 BL-129, "VEHICLE SECURITY (THEFT WARNING) SYSTEM" .

CAN Communication System Description

AKS009P3

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

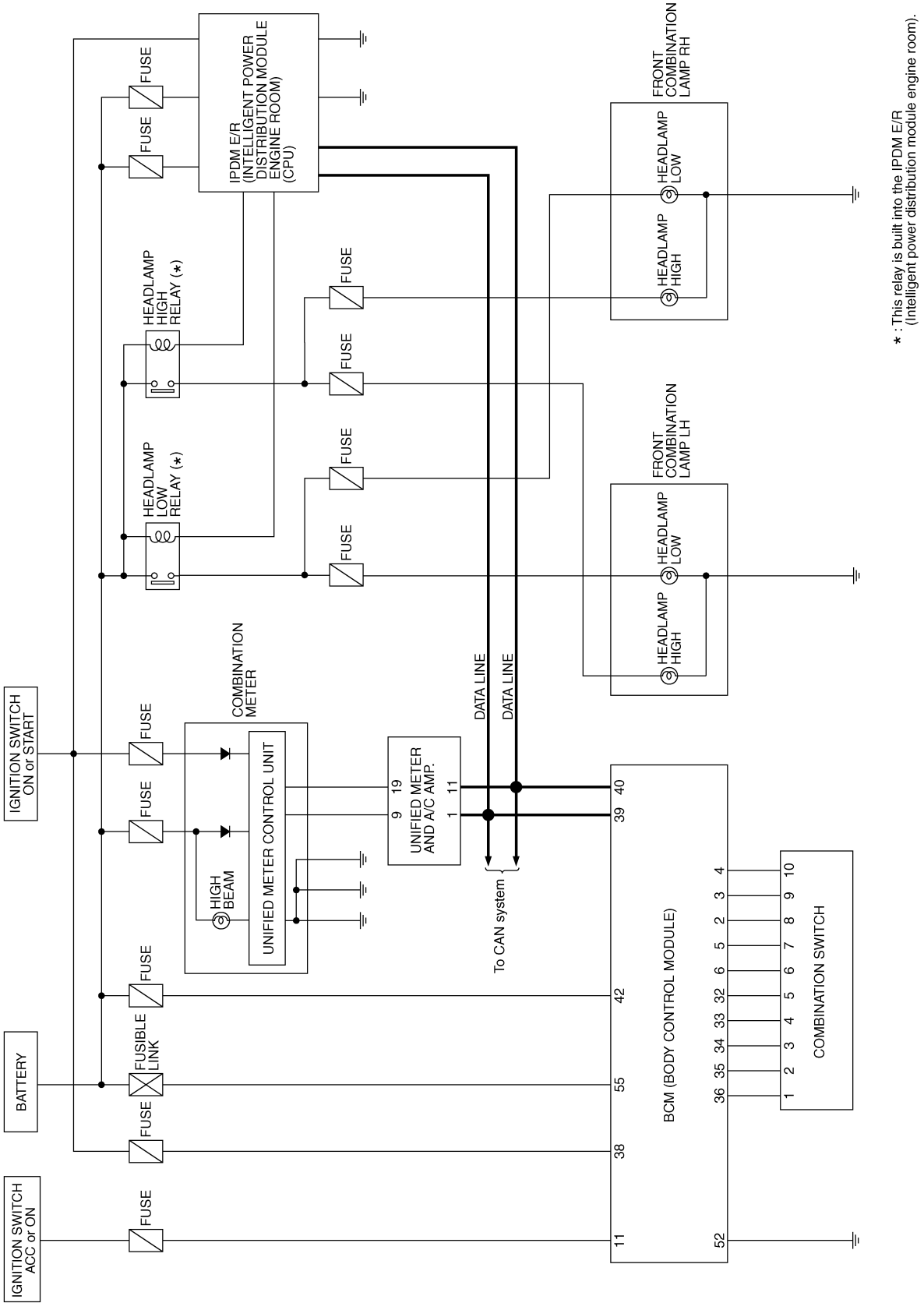
CAN Communication Unit

AKS009P4

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

Schematic

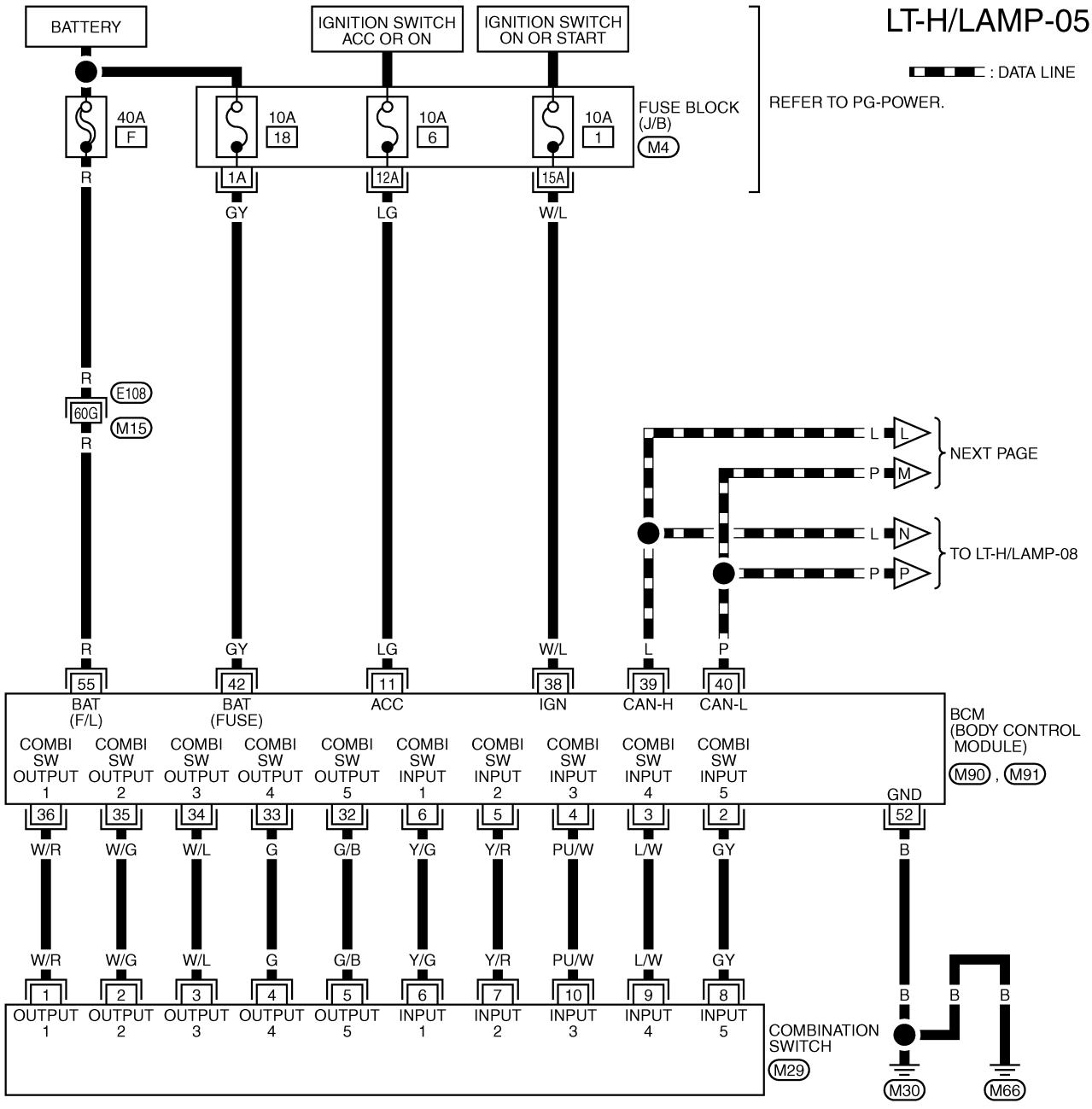
AKS009P5



TKWT1775E

Wiring Diagram — H/LAMP —

AKS009P6



REFER TO THE FOLLOWING.

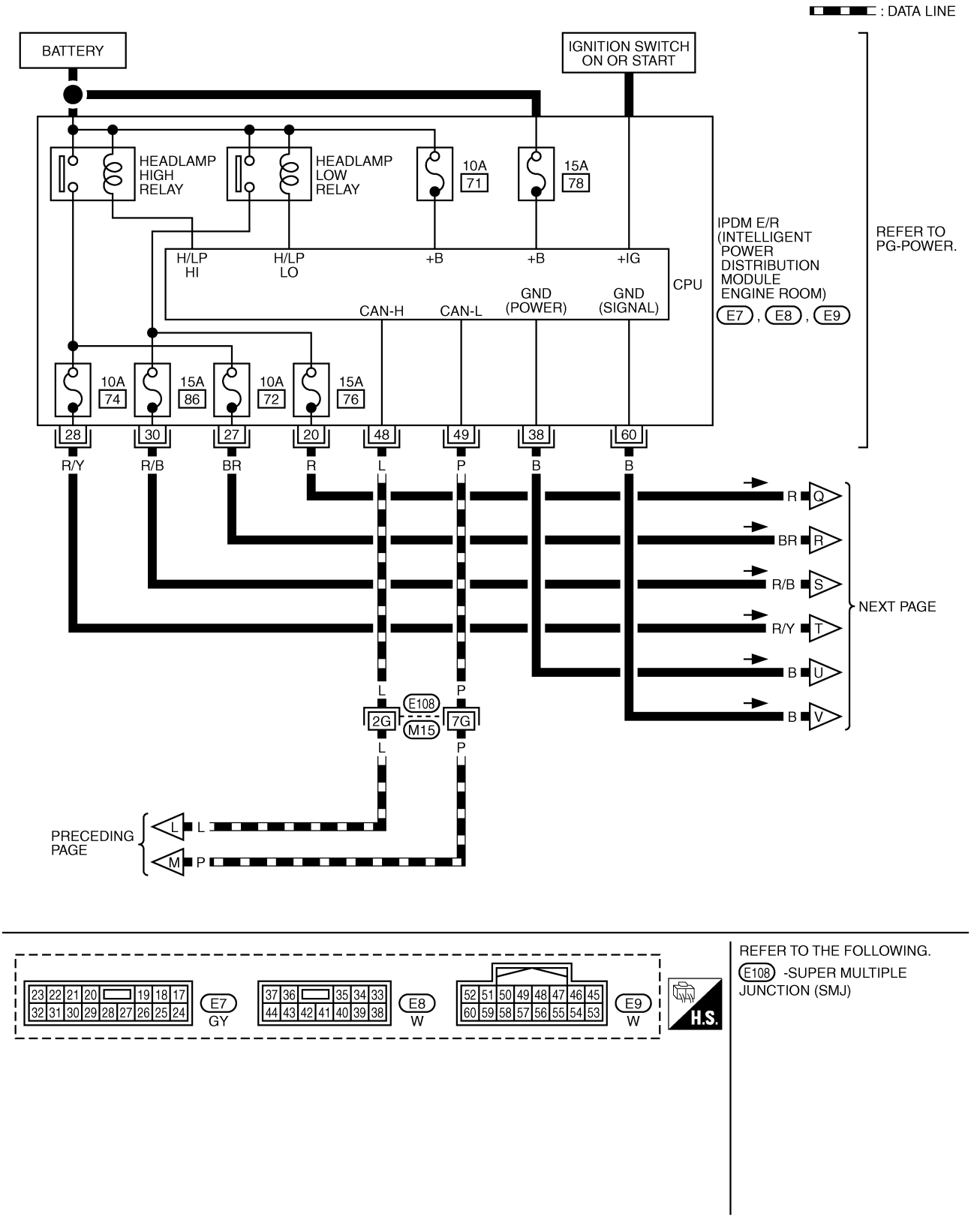
E108 -SUPER MULTIPLE JUNCTION (SMJ)

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

M90 , M91 -ELECTRICAL UNITS

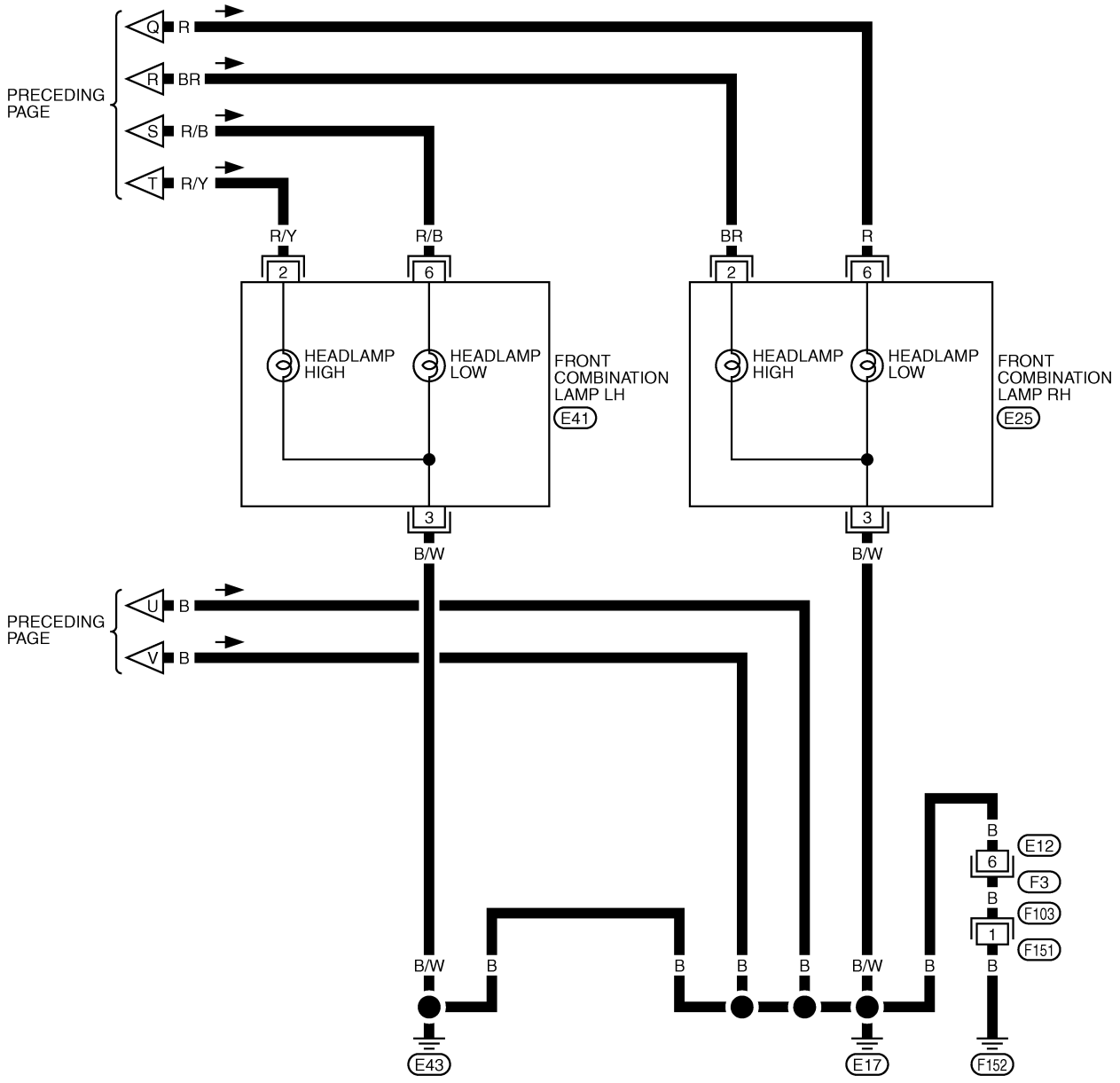
TKWT1776E

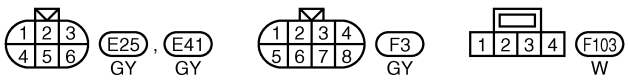
LT-H/LAMP-06



TKWT1777E

LT-H/LAMP-07

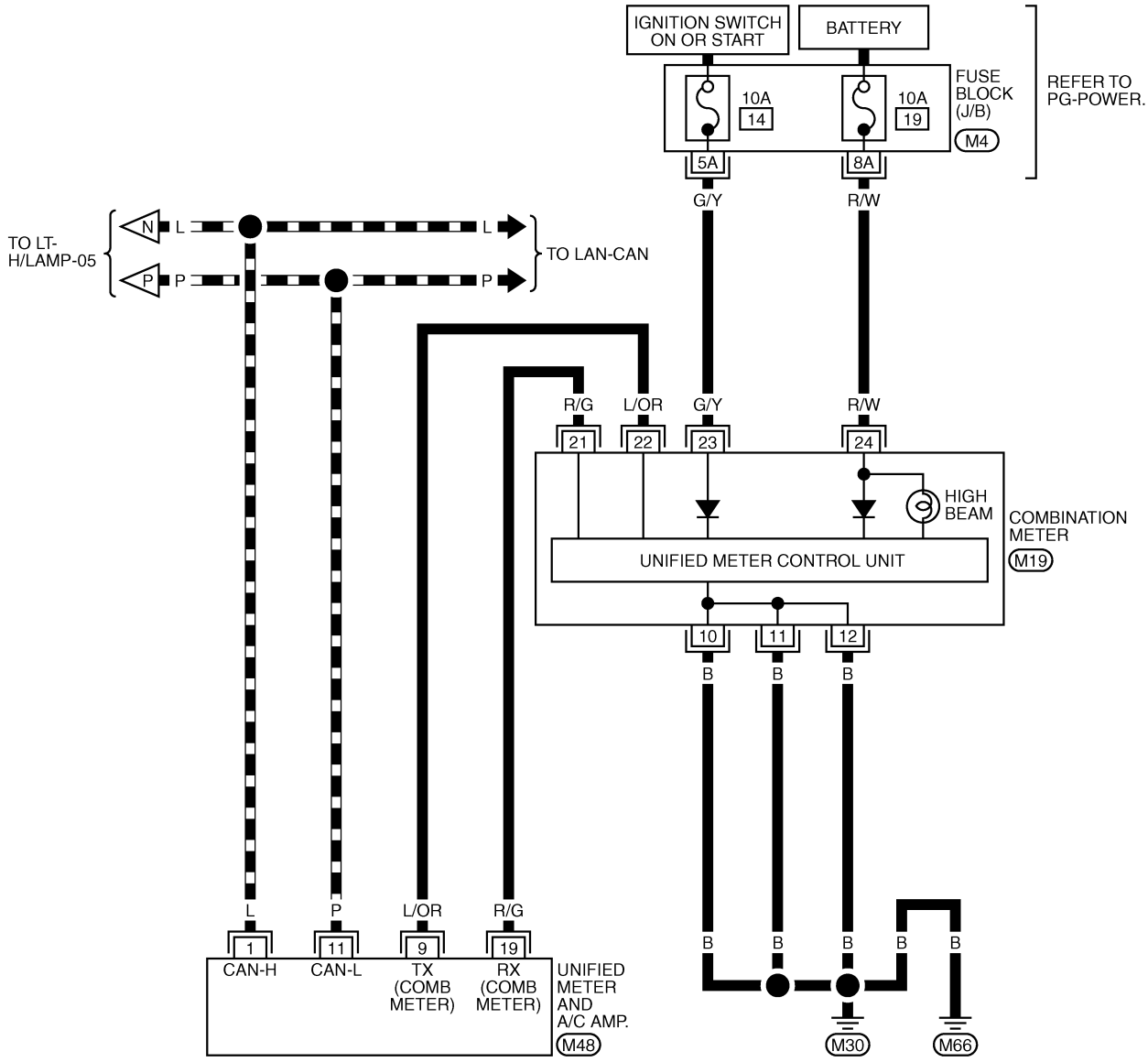


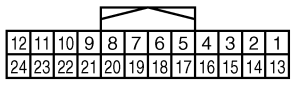


TKWT1778E

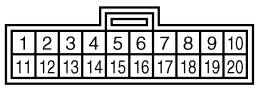
LT-H/LAMP-08

: DATA LINE





M19
W



M48
GY

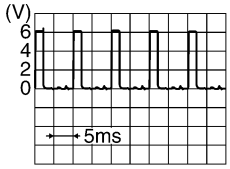
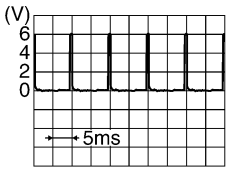
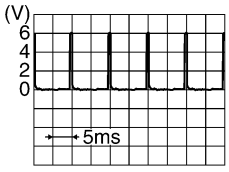
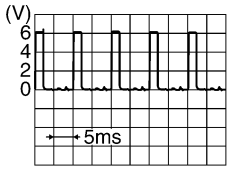
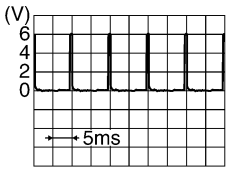
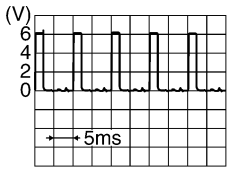
H.S.

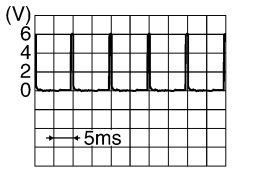
REFER TO THE FOLLOWING.
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT1779E

Terminals and Reference Values for BCM

AKS00AOR

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

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

Terminals and Reference Values for IPDM E/R

AKS009R9

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

How to Proceed With Trouble Diagnosis

AKS009RA

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-38, "System Description" .
3. Perform the preliminary check. Refer to LT-48, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the headlamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. INSPECTION END

Preliminary Check

AKS009P9

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown fuses.

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

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

OK or NG

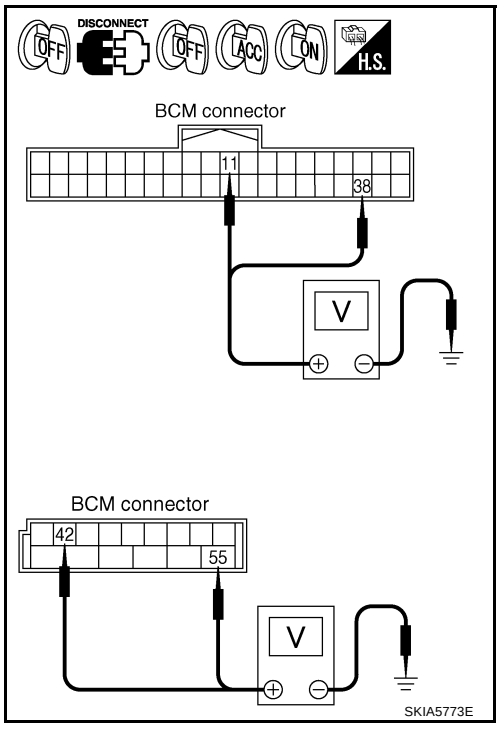
OK >> GO TO 2.

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

2. CHECK POWER SUPPLY CIRCUIT

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

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



OK or NG

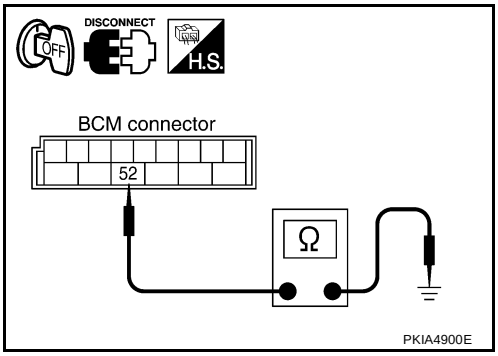
OK >> GO TO 3.

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

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



OK or NG

OK >> INSPECTION END
NG >> Check ground circuit harness.

CONSULT-II Functions (BCM)

AKS009PA

CONSULT-II performs the following functions communicating with BCM.

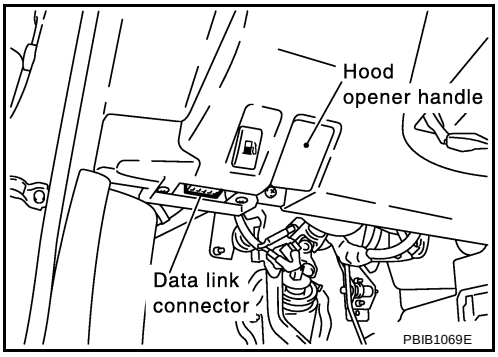
BCM diagnosis part	Check item, diagnosis mode	Description
HEADLAMP	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
BCM	CAN DIAG SUPPORT MNTR	The result of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

CONSULT-II BASIC OPERATION

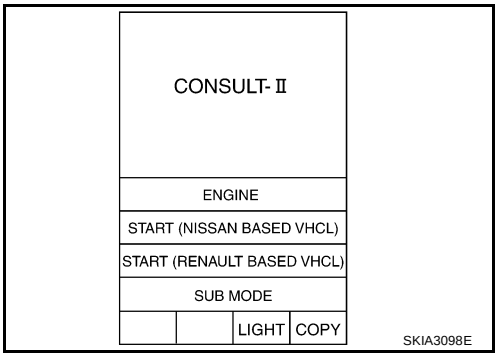
CAUTION:

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

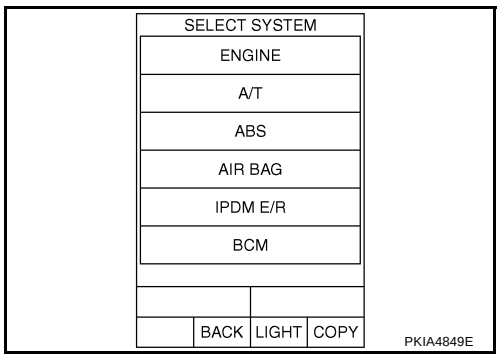
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



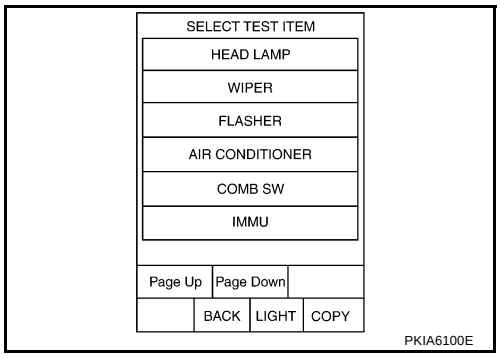
2. Touch “START (NISSAN BASED VHCL)”.



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



4. Touch “HEAD LAMP” on “SELECT TEST ITEM” screen.



WORK SUPPORT

Operation Procedure

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
BATTERY SAVER SET	Exterior lamp battery saver control mode can be changed in this mode. Selects exterior lamp battery saver control mode between two ON/OFF.	ON	×
		OFF	—

DATA MONITOR

Operation Procedure

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

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

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

Display Item List

Monitor item		Contents
IGN ON SW	“ON/OFF”	Displays “IGN position (ON)/OFF, ACC position (OFF)” judged from the ignition switch signal.
ACC ON SW	“ON/OFF”	Displays “ACC (ON)/OFF, Ignition OFF (OFF)” status judged from ignition switch signal.
HI BEAM SW	“ON/OFF”	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
HEAD LAMP SW 1	“ON/OFF”	Displays status (headlamp switch 1: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
HEAD LAMP SW 2	“ON/OFF”	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
LIGHT SW 1 ST	“ON/OFF”	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
AUTO LIGHT SW[NOTE]	“ON/OFF”	—
PASSING SW	“ON/OFF”	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW[NOTE]	“ON/OFF”	—
DOOR SW - DR	“ON/OFF”	Displays status of 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 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)

AKS009RB

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

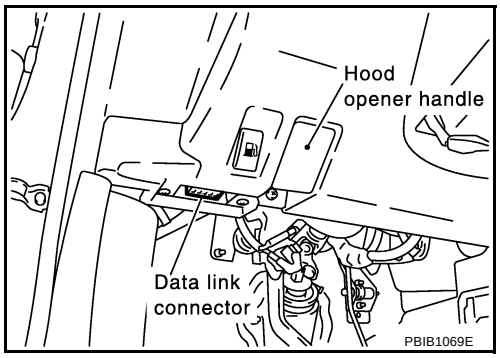
Inspection Item, Diagnosis Mode	Description
SELF-DIAGNOSTIC RESULTS	IPDM E/R performs self-diagnosis of CAN communication.
DATA MONITOR	The input/output data of IPDM E/R is displayed in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE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

CONSULT-II OPERATION

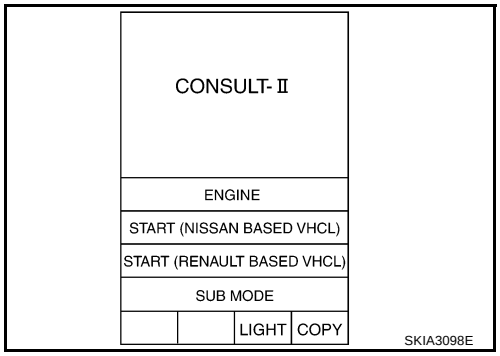
CAUTION:

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

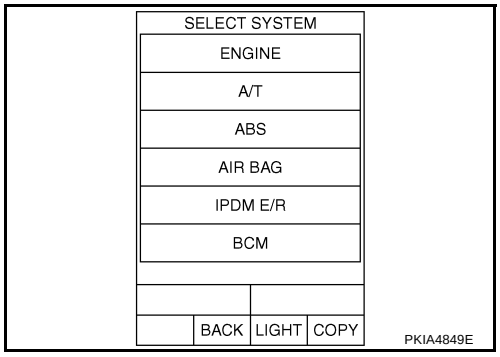
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



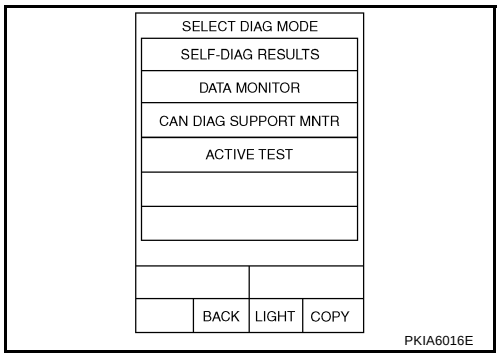
2. Touch “START (NISSAN BASED VHCL)”.



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



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

Item name	CONSULT-II screen display	Display or unit	Monitor item selection			Description
			ALL SIGNALS	MAIN SIGNALS	SELECT FROM MENU	
Position lights request	TAIL&CLR REQ	ON/OFF	×	×	×	Signal status input from BCM
Headlamp low beam request	HL LO REQ	ON/OFF	×	×	×	Signal status input from BCM
Headlamp high beam request	HL HI REQ	ON/OFF	×	×	×	Signal status input from BCM

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

ACTIVE TEST

Operation Procedure

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

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

SELF-DIAGNOSTIC RESULTS

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

Headlamp High Beam Does Not Illuminate (Both Sides)

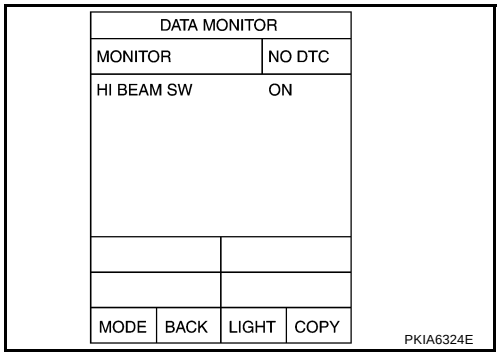
AKS00AOS

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 HIGH BEAM position : HI BEAM SW ON



Without CONSULT-II

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

OK or NG

OK >> GO TO 2.

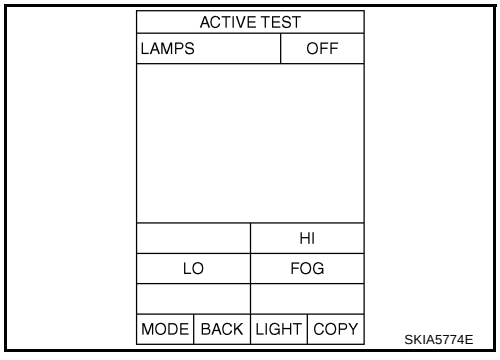
NG >> Check lighting switch. Refer to LT-170, "Combination Switch Inspection" .

2. HEADLAMP ACTIVE TEST

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

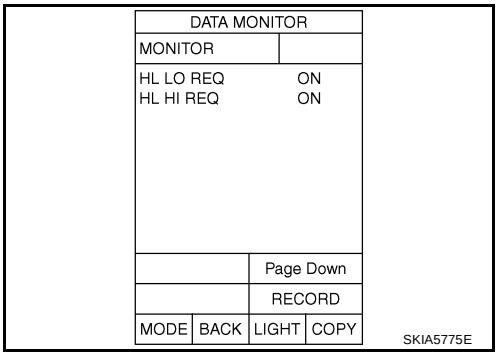
OK >> GO TO 3.

NG >> GO TO 4.

3. CHECK IPDM E/R

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

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



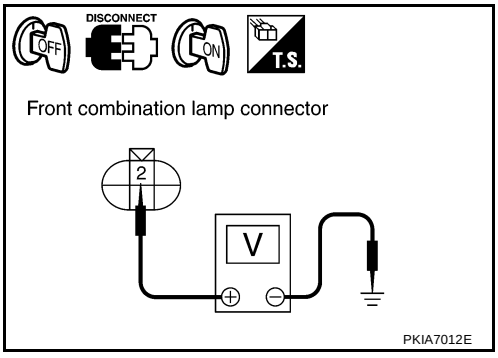
OK or NG

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

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.
6. 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)		
RH	E25	2 (BR)	Ground	Battery voltage
LH	E41	2 (R/Y)		

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.

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

OK or NG

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

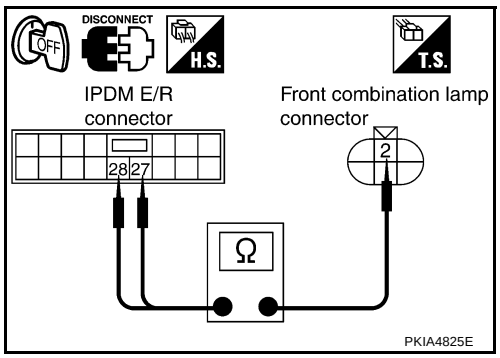
5. CHECK HEADLAMP CIRCUIT

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

27 (BR) – 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.

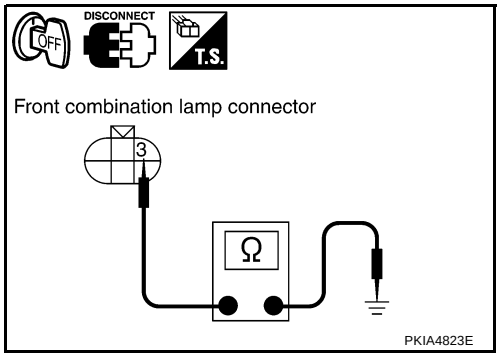
6. CHECK HEADLAMP GROUND

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)

AKS00AOT

1. CHECK BULB

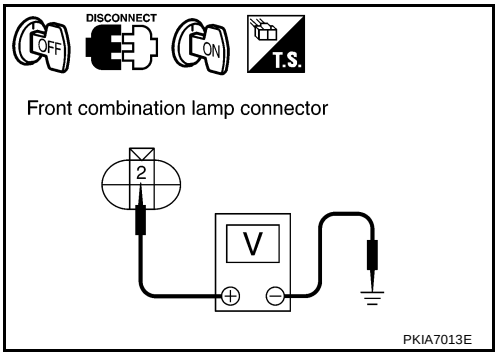
Check bulb of lamp which does not illuminate.

OK or NG

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

2. CHECK HEADLAMP INPUT SIGNAL

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.



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

OK or NG

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

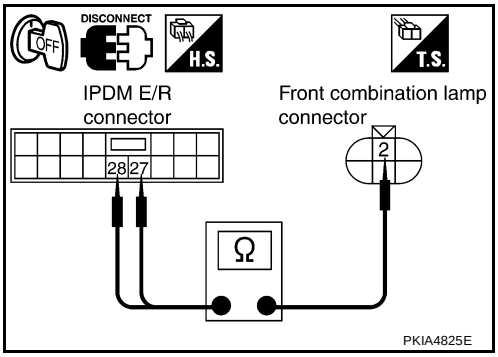
3. CHECK HEADLAMP CIRCUIT

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

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.

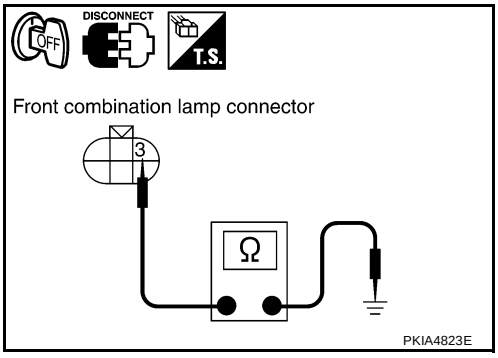
4. CHECK HEADLAMP GROUND

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

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 harness and connector.
NG >> Repair harness or connector.

High Beam Indicator Lamp Does Not Illuminate

AKS00AOU

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)

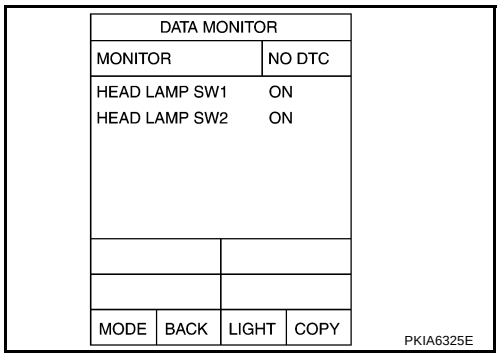
AKS00AOV

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 position : HEAD LAMP SW 1 ON
: HEAD LAMP SW 2 ON



Without CONSULT-II

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

OK or NG

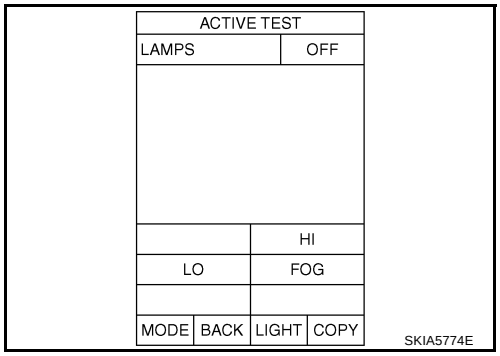
OK >> GO TO 2.
NG >> Check lighting switch. Refer to LT-170, "Combination Switch Inspection" .

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 “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.

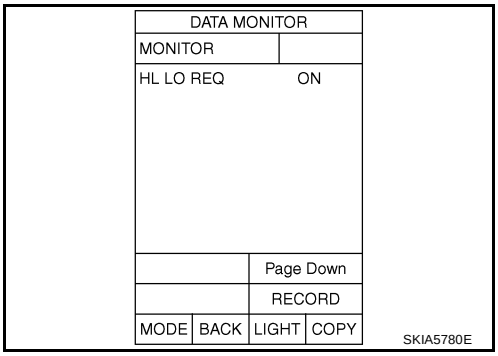
OK or NG

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

3. CHECK IPDM E/R

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

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



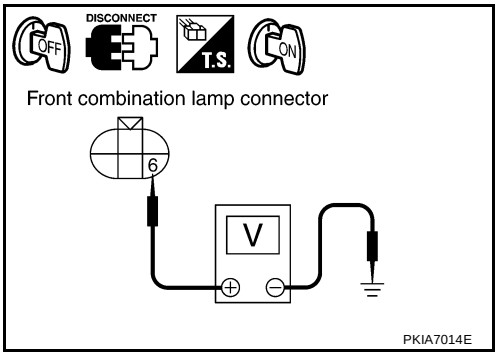
OK or NG

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

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
(+)			(-)	
Connector		Terminal (Wire color)		
RH	E25	6 (R)	Ground	Battery voltage
LH	E41	6 (R/B)		

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
(+)			(-)	
Connector		Terminal (Wire color)		
RH	E25	6 (R)	Ground	Battery voltage
LH	E41	6 (R/B)		

OK or NG

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

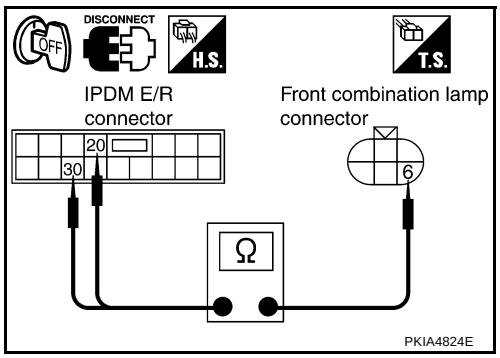
5. CHECK HEADLAMP CIRCUIT

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 E25 terminal 6 (R).

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

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

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



OK or NG

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

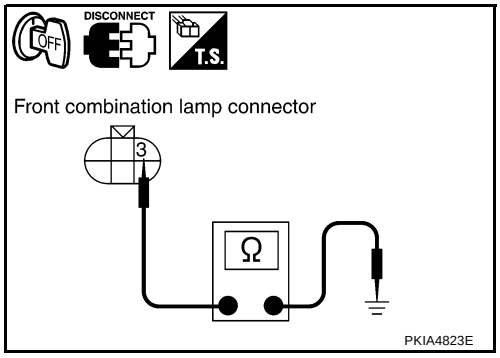
6. CHECK HEADLAMP GROUND

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)

AKS00AOW

1. CHECK BULB

Check bulb of lamp which does not illuminate.

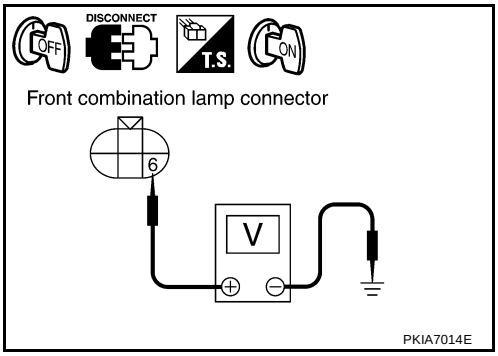
OK or NG

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

2. CHECK HEADLAMP INPUT SIGNAL

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
(+)			(-)	
Connector		Terminal (Wire color)		
RH	E25	6 (R)	Ground	Battery voltage
LH	E41	6 (R/B)		

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
(+)			(-)	
Connector		Terminal (Wire color)		
RH	E25	6 (R)	Ground	Battery voltage
LH	E41	6 (R/B)		

OK or NG

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

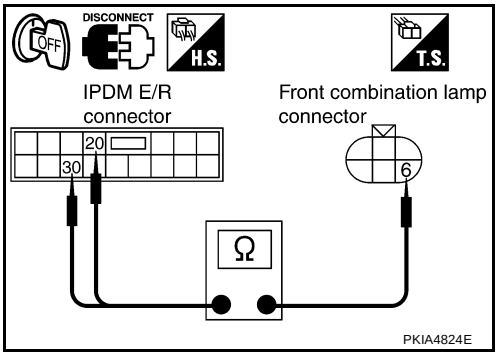
3. CHECK HEADLAMP CIRCUIT

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 6 (R).

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

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

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



OK or NG

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

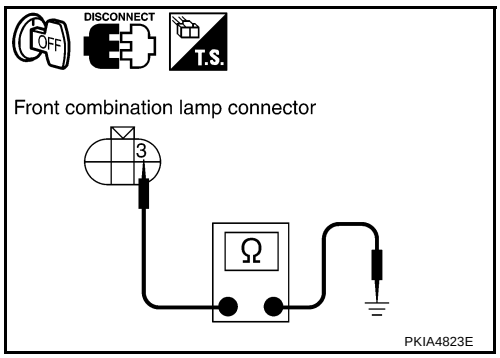
4. CHECK HEADLAMP GROUND

1. Check continuity between front combination lamp RH harness connector 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 harness and connector.
NG >> Repair harness or connector.

Headlamps Does Not Turn OFF

AKS00AOX

1. CHECK HEADLAMP TURN OFF

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

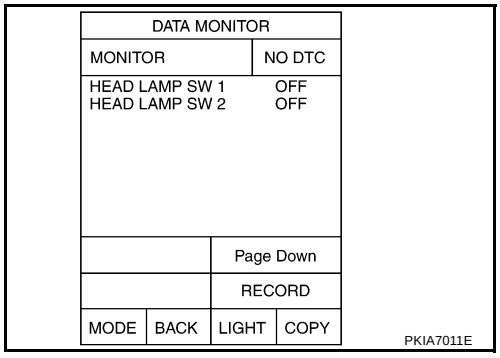
OK or NG

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

2. CHECK COMBINATION SWITCH INPUT SIGNAL

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

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



OK or NG

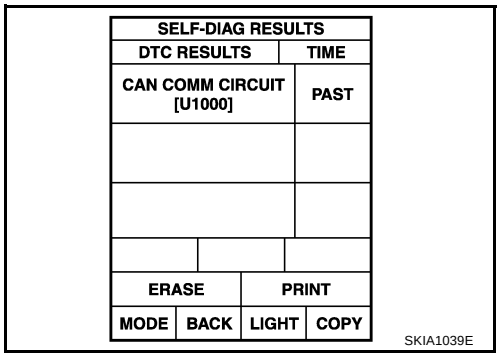
OK >> Replace IPDM E/R.
NG >> Check lighting switch. Refer to LT-170, "Combination Switch Inspection" .

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

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

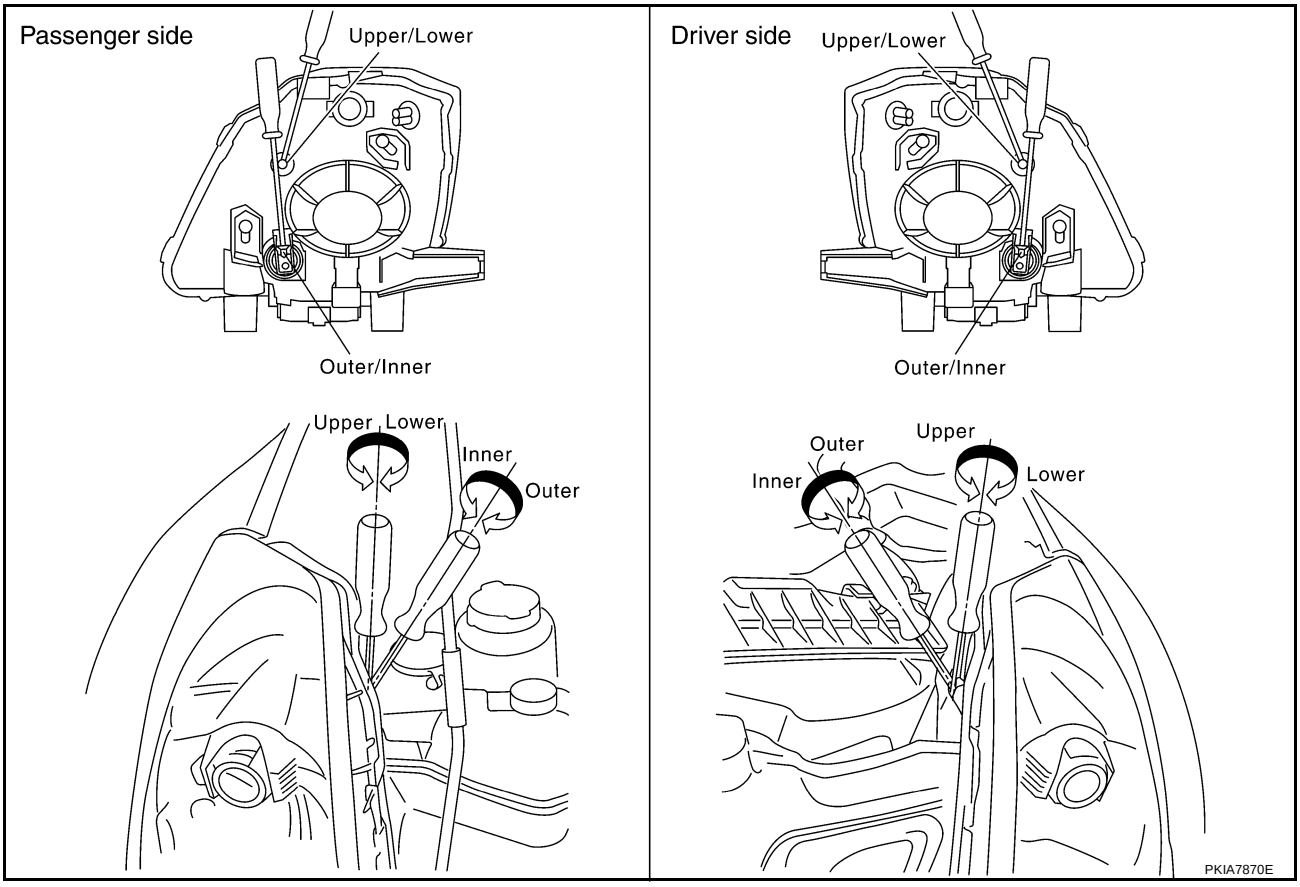
Display of self-diagnosis results

NO DTC>> Replace IPDM E/R.
CAN COMM CIRCUIT>> Refer to BCS-16, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" .



Aiming Adjustment

AKS00ABI



PREPARATION BEFORE ADJUSTING

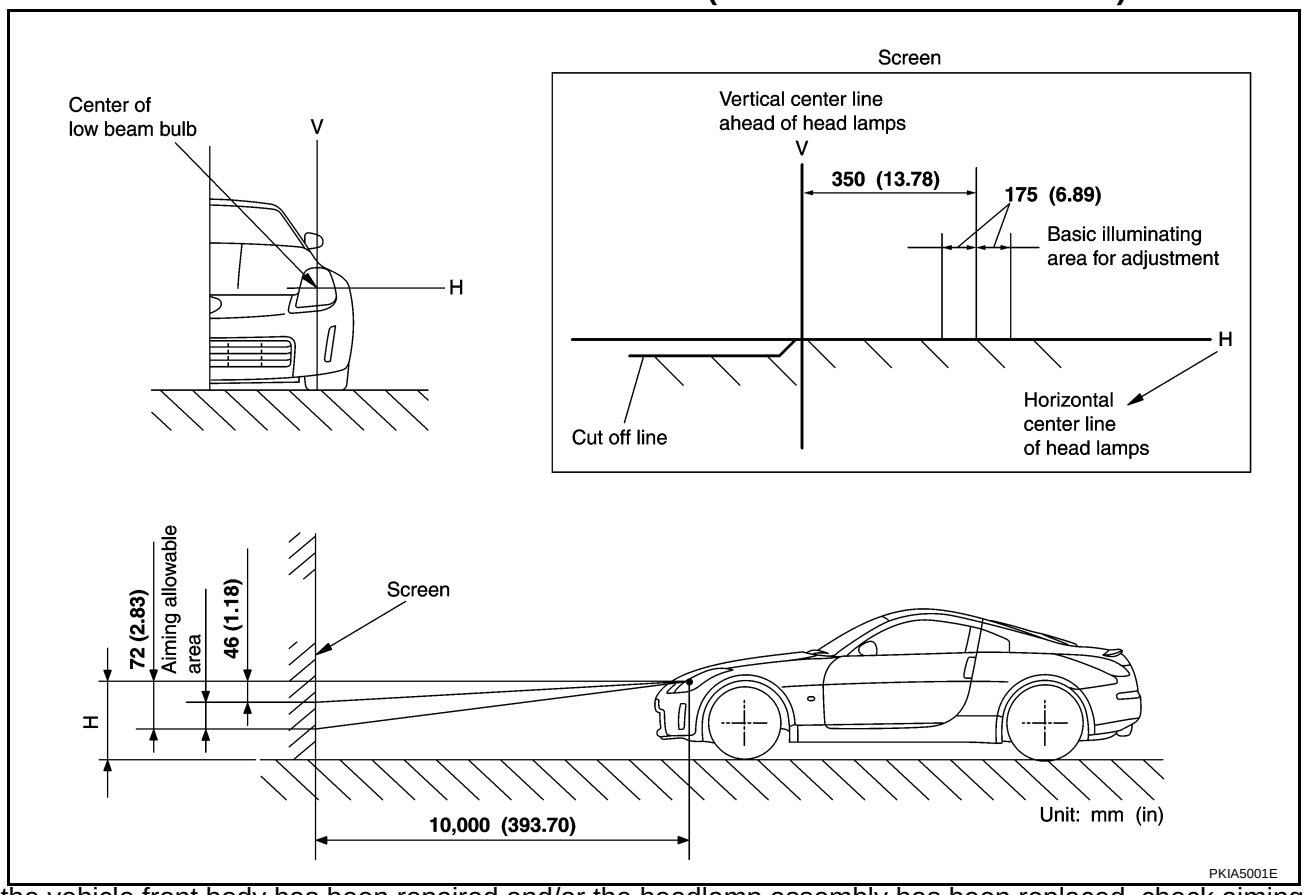
For details, refer to the regulations in your own country.
Before performing aiming adjustment, check the following.

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

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

ADJUSTMENT USING AN ADJUSTMENT SCREEN (LIGHT/DARK BORDERLINE)



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

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

Bulb Replacement

AKS00ABJ

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 (Halogen) : **12V - 55W (H7)**

HEADLAMP (LOWER) HIGH BEAM

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

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

PARKING LAMPS (CLEARANCE LAMPS)

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

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

FRONT TURN SIGNAL LAMP

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

Front turn signal lamp : 12V - 21W

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

FRONT SIDE MARKER LAMP

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

Front side marker lamp : 12V - 5W

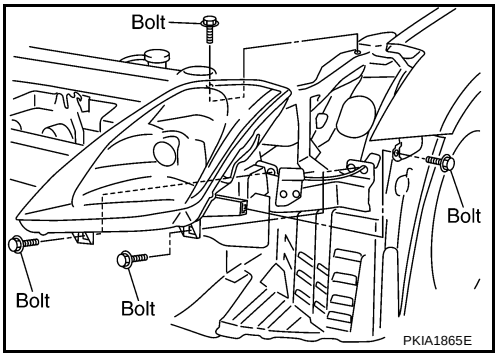
CAUTION:
After installing bulb, be sure to install plastic cap and socket securely to insure watertightness.

Removal and Installation

AKS00ABK

REMOVAL

1. Remove front bumper. Refer to EI-14, "FRONT BUMPER" 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:

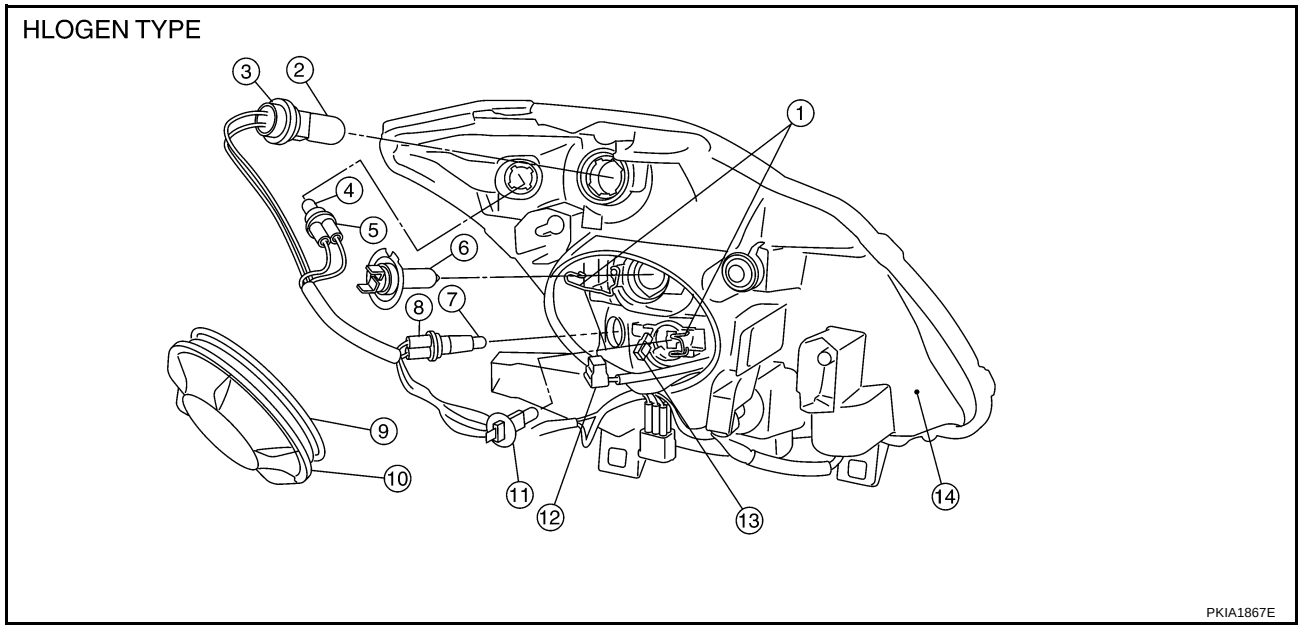
: 6.1 N·m (0.62 kg-m, 54 in-lb)

NOTE:

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

Disassembly and Assembly

AKS00ABL



1. Retaining spring
2. Front turn signal lamp bulb
3. Front turn signal lamp bulb socket
4. Side marker lamp bulb
5. Side marker lamp bulb socket
6. Halogen bulb (low)
7. Clearance lamp bulb
8. Clearance lamp bulb socket
9. Seal rubber
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).
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:

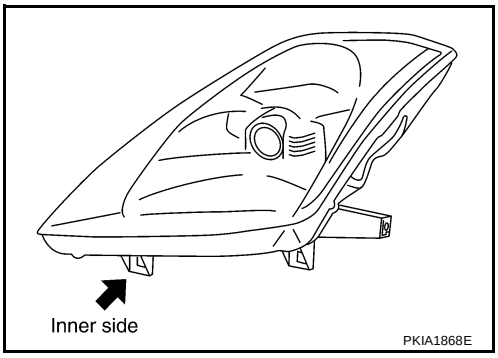
CAUTION:

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

Servicing to Replace Headlamps When Damaged

AKS00ABN

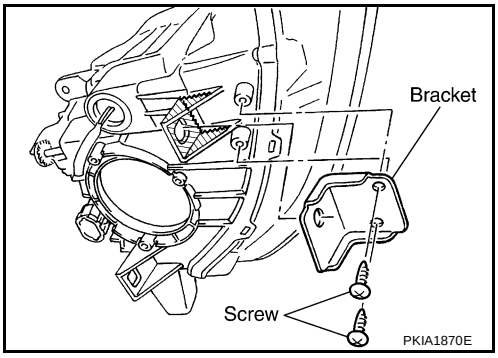
If only installation part as shown in the figure is damaged, and headlamp housing itself is not damaged, repair can be completed easily by installing correction brackets.



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**

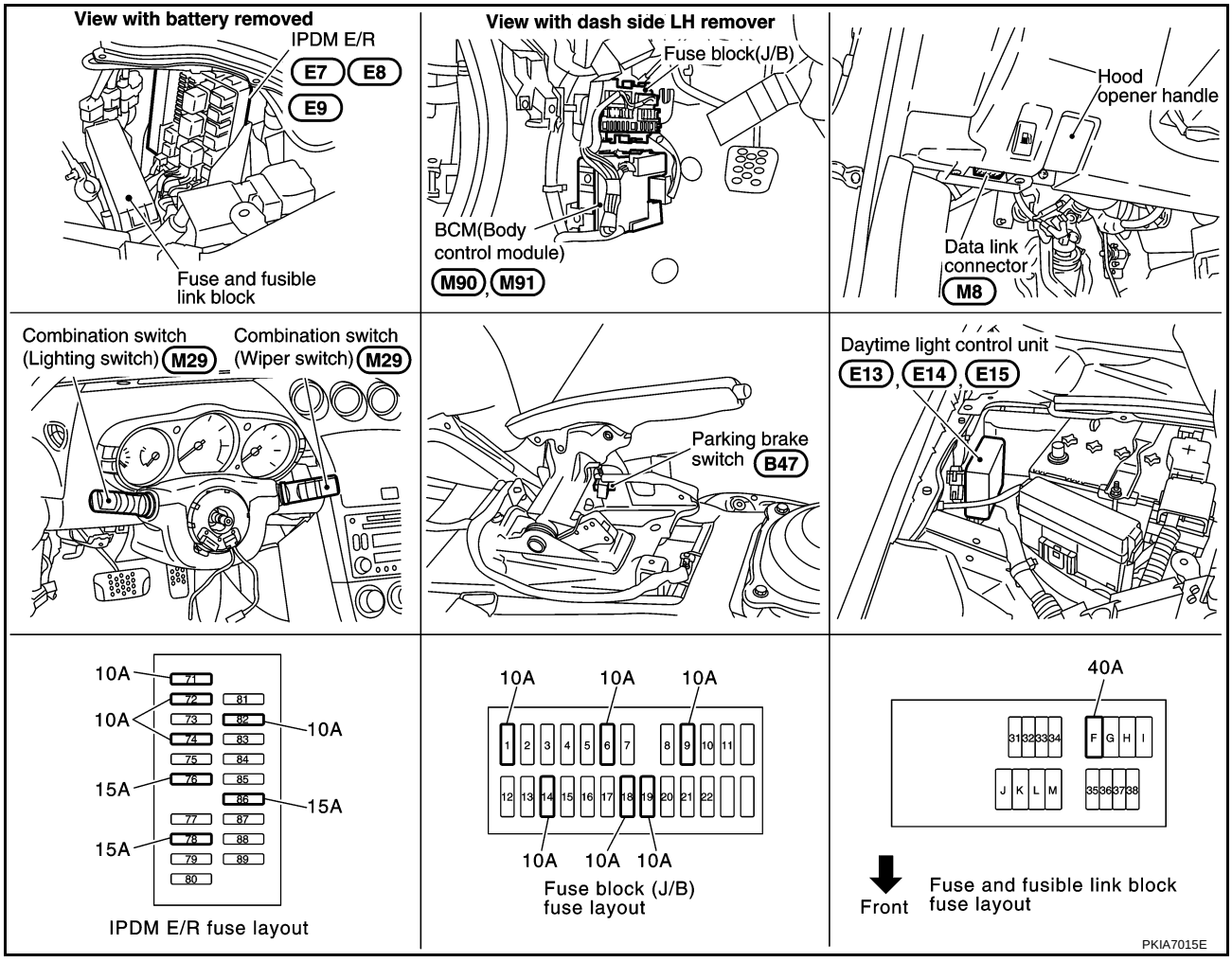


HEADLAMP (FOR CANADA) - XENON TYPE -

PFP:26010

Component Parts and Harness Connector Location

AKS009N4



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)]

- 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 groundsE17, 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 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 at all times

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

With power and ground supplied, low beam headlamps illuminate.

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

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

- through 15A fuse [No. 76, located in IPDM E/R]
- through IPDM E/R terminal 20
- to front combination lamp RH terminal 7, and
- through 15A fuse [No. 86, located in IPDM E/R]
- through IPDM E/R terminal 30
- to front combination lamp LH terminal 7
- through 10A fuse [No.74, located in IPDM E/R]
- through IPDM E/R terminal 28
- to daytime light control unit terminal 4
- through daytime light control unit terminal 7
- to front combination lamp LH terminal 3

- 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.

Engine		With engine stopped									With engine running								
Lighting switch		OFF			1ST			2ND			OFF			1ST			2ND		
		Hi	Lo	P	Hi	Lo	P	Hi	Lo	P	Hi	Lo	P	Hi	Lo	P	Hi	Lo	P
Head-lamp	High beam	–	–	–	–	–	×	×	–	×	●*	●*	×	●*	●*	×	×	–	×
	Low beam	–	–	–	–	–	×	×	×	×	–	–	×	–	–	×	×	×	×

Engine	With engine stopped									With engine running								
Lighting switch	OFF			1ST			2ND			OFF			1ST			2ND		
	Hi	Lo	P	Hi	Lo	P	Hi	Lo	P	Hi	Lo	P	Hi	Lo	P	Hi	Lo	P
Tail lamp	–	–	–	×	×	×	×	×	×	–	–	–	×	×	×	×	×	×
License and instrument illumination lamp	–	–	–	×	×	×	×	×	×	–	–	–	×	×	×	×	×	×

- Hi: “HIGH BEAM” position
- Lo: “LOW BEAM” position
- P: “FLASH TO PASS” position
- ×: Lamp “ON”
- –: Lamp “OFF”
- ●: Lamp dims. (Added functions)
- *: When starting the engine with the parking brake released, the daytime 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

AKS009N6

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.

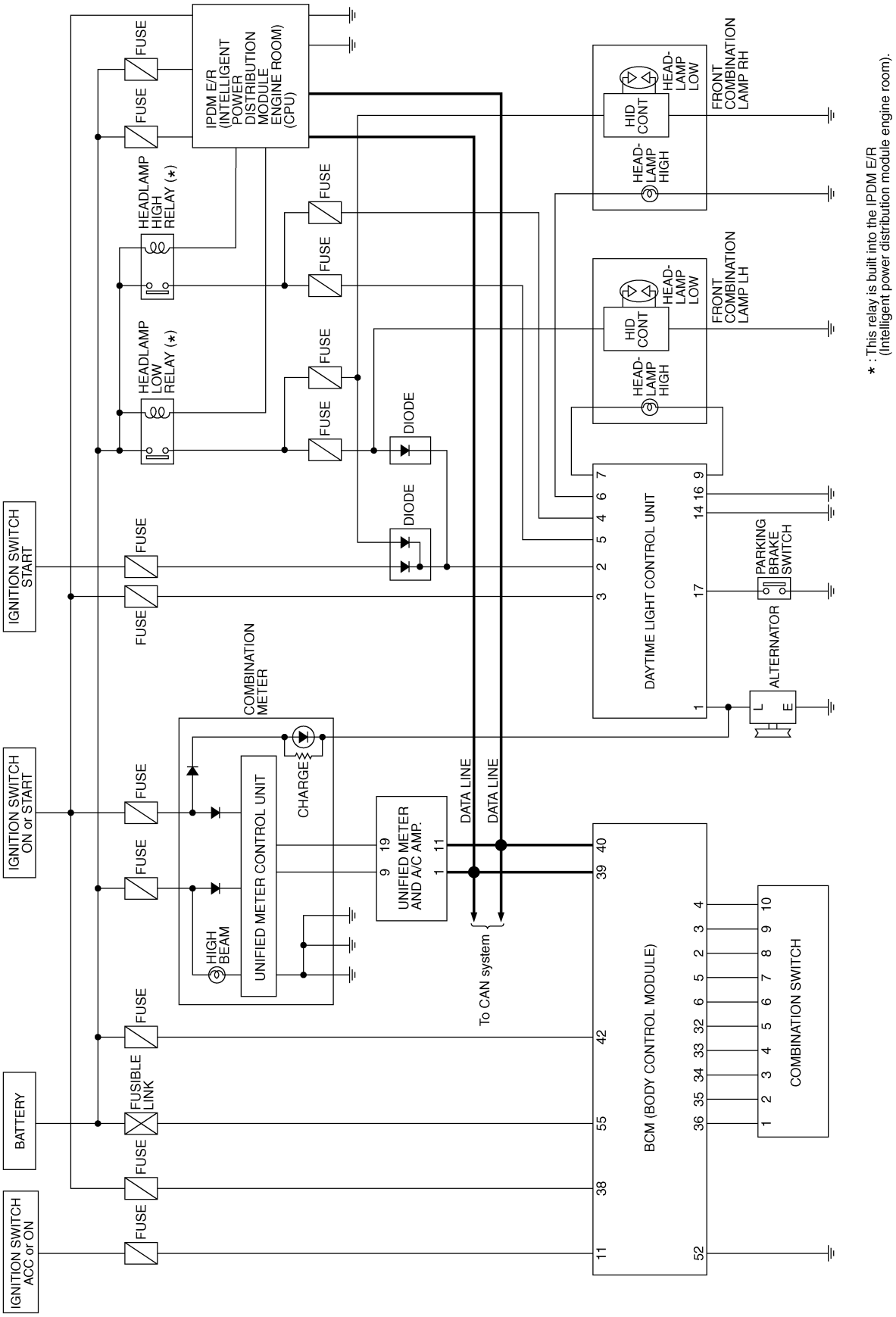
CAN Communication Unit

AKS009N7

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

Schematic

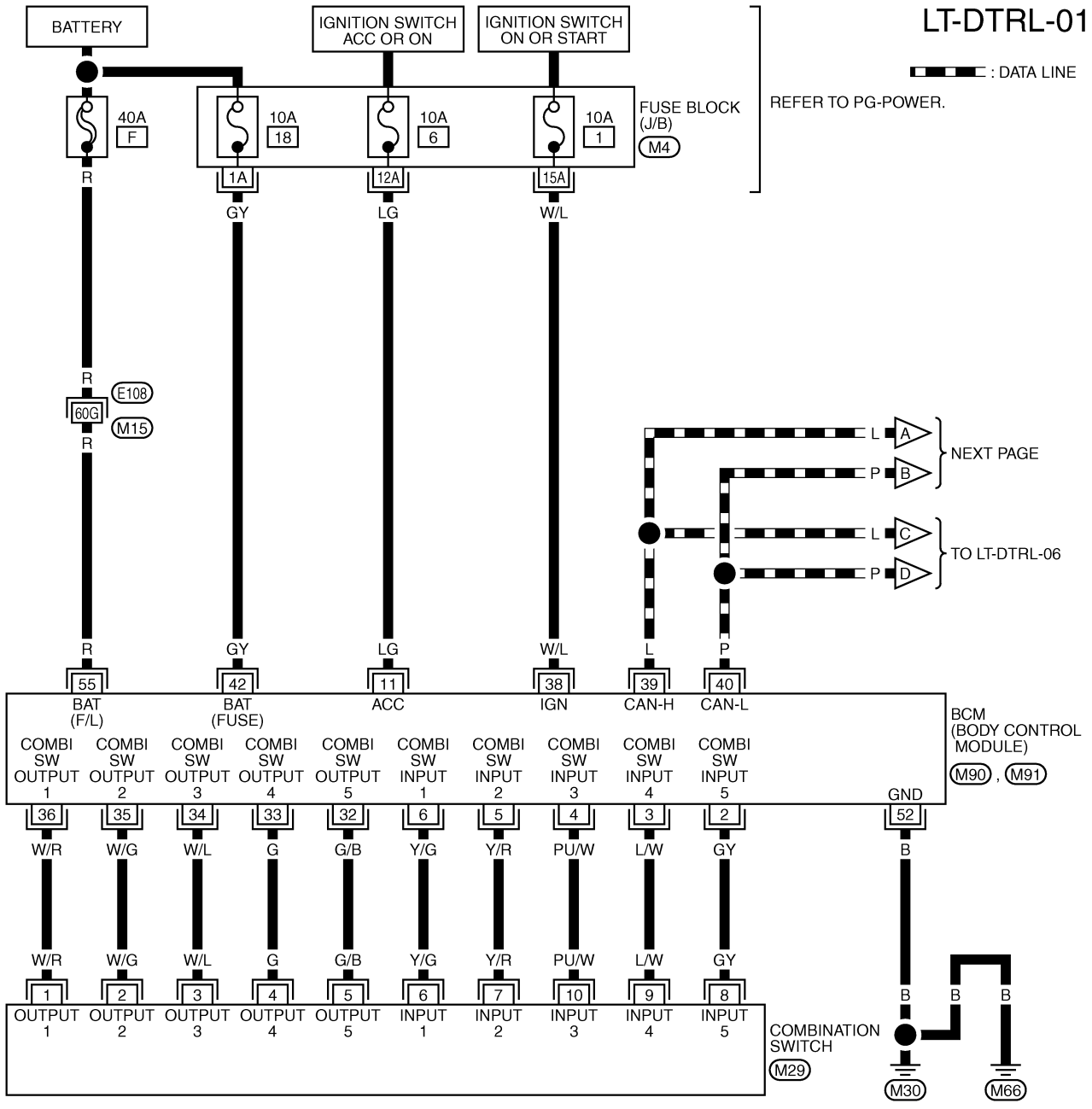
AKS009N8



TKWT1780E

Wiring Diagram — DTRL —

AKS009N9



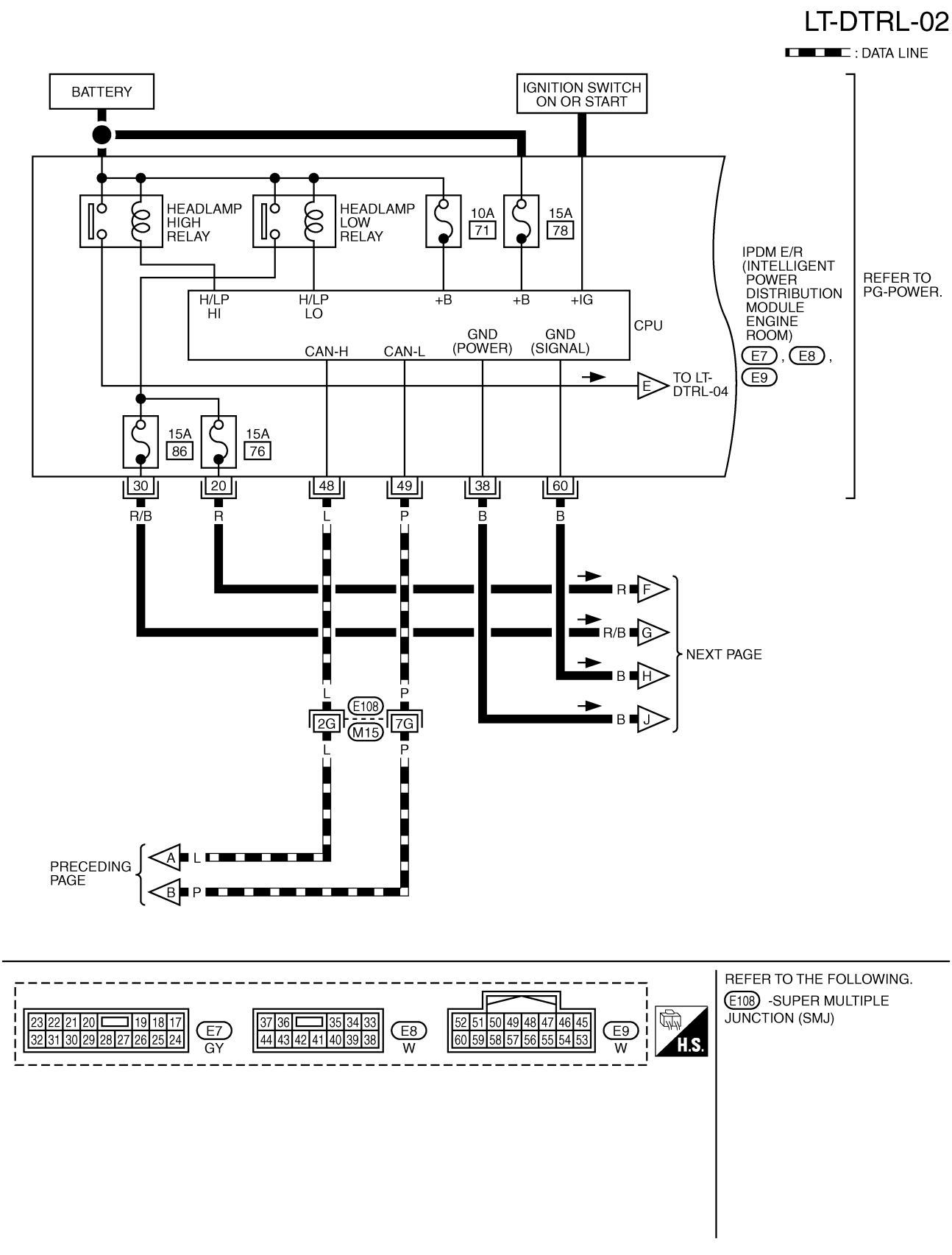
REFER TO THE FOLLOWING.

E108 -SUPER MULTIPLE JUNCTION (SMJ)

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

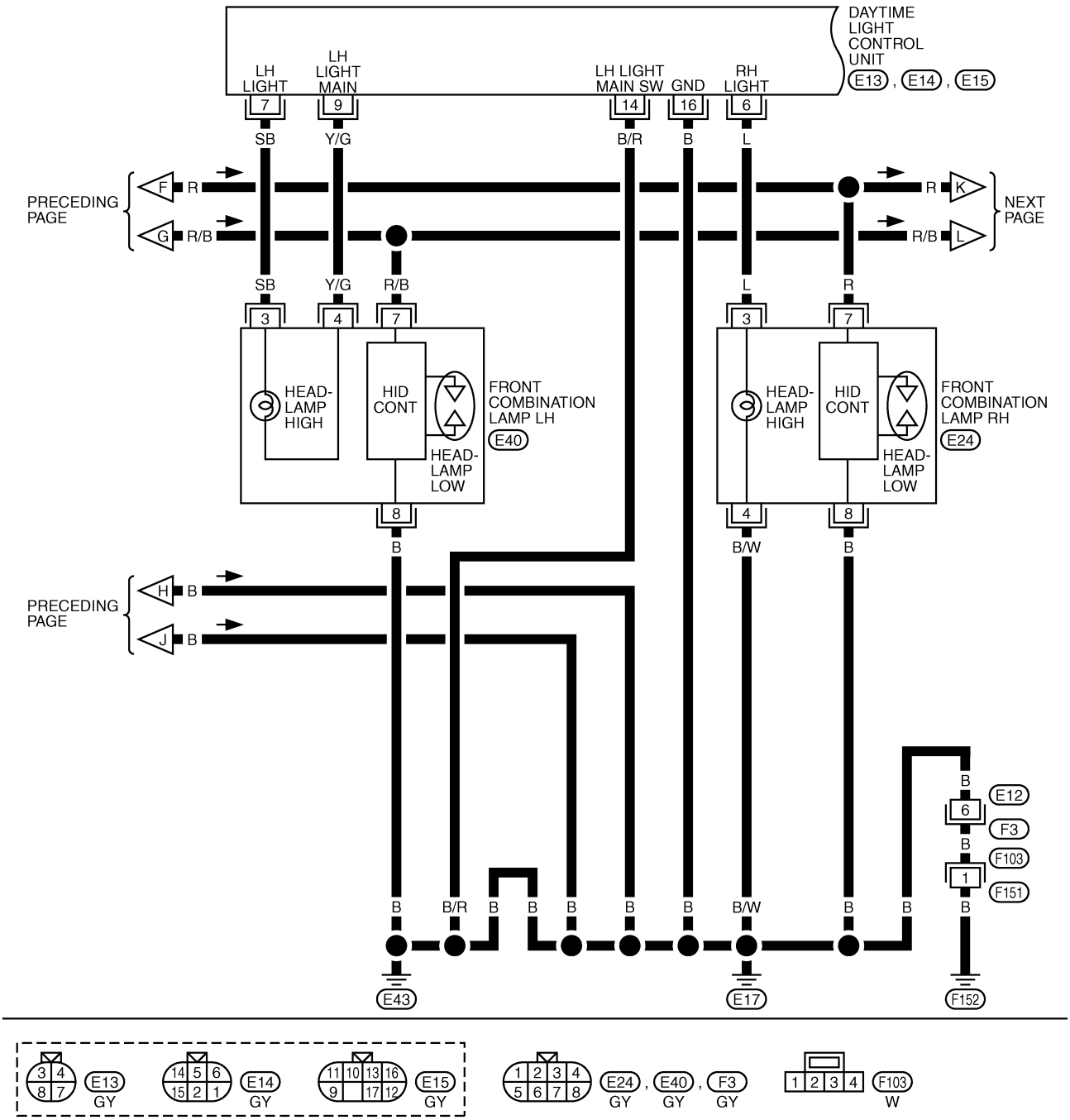
M90 , M91 -ELECTRICAL UNITS

TKWT1781E


LT-DTRL-02
: DATA LINE
BATTERY
IGNITION SWITCH ON OR START
HEADLAMP HIGH RELAY
HEADLAMP LOW RELAY
10A 71
15A 78
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E7 , E8 , E9
REFER TO PG-POWER.
H/LP HI
H/LP LO
+B
+B
+IG
CPU
CAN-H
CAN-L
GND (POWER)
GND (SIGNAL)
E
TO LT-DTRL-04
15A 86
15A 76
30
20
48
49
38
60
R/B
R
L
P
B
B
R F
R/B G
B H
B J
NEXT PAGE
L
P
E108
2G
M15
7G
L
P
PRECEDING PAGE
A L
B P
23 22 21 20 19 18 17
32 31 30 29 28 27 26 25 24
E7
GY
37 36 35 34 33
44 43 42 41 40 39 38
E8
W
52 51 50 49 48 47 46 45
60 59 58 57 56 55 54 53
E9
W
H.S.
REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)

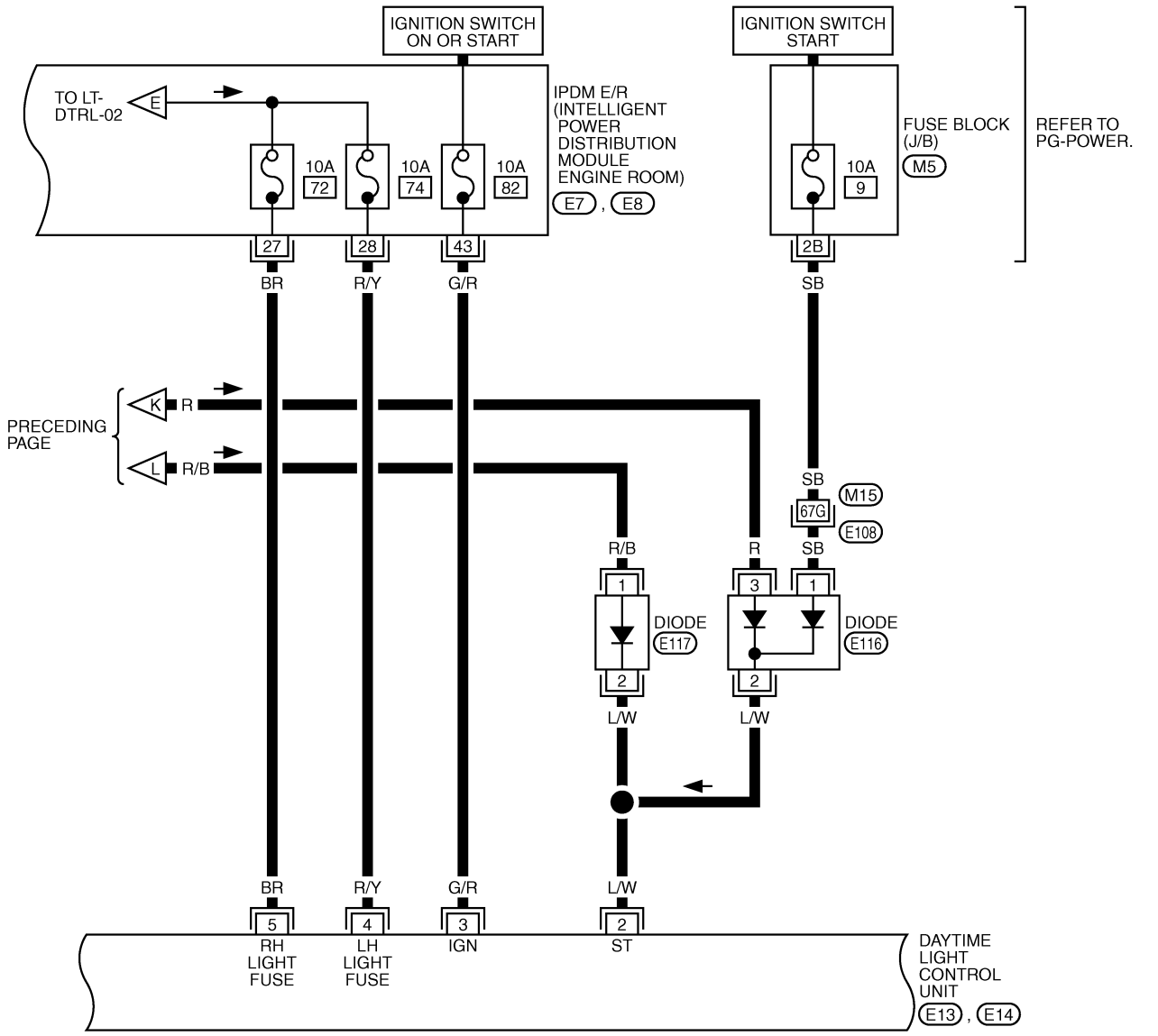
TKWT1782E

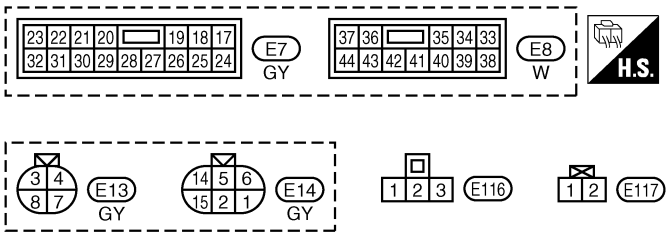
LT-DTRL-03



TKWT1783E

LT-DTRL-04





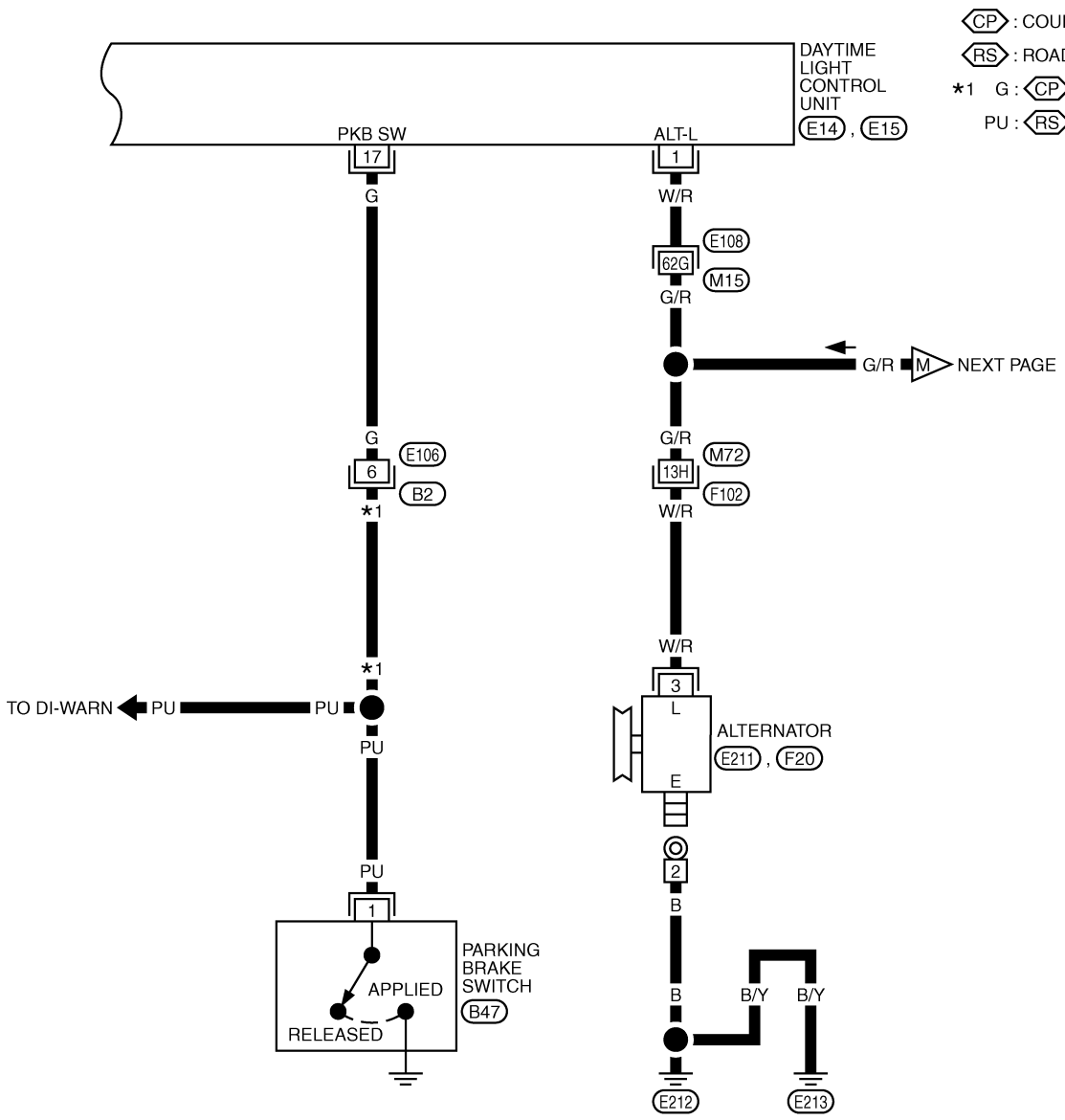
REFER TO THE FOLLOWING.

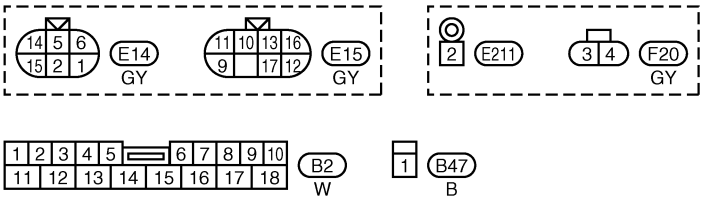
E108 -SUPER MULTIPLE JUNCTION (SMJ)

M5 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT1784E

LT-DTRL-05



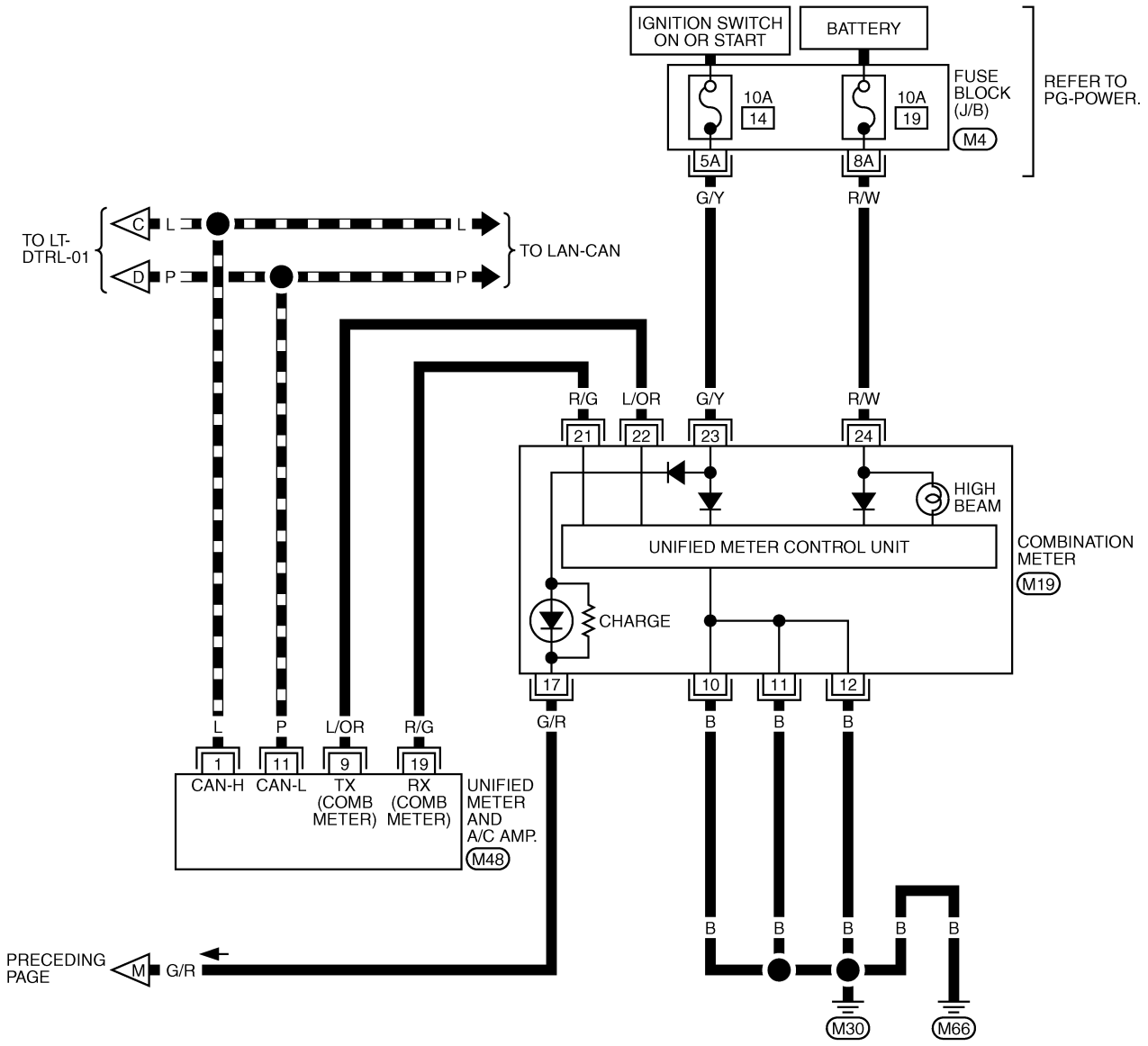


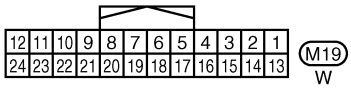
REFER TO THE FOLLOWING.
E108 , F102 -SUPER MULTIPLE JUNCTION (SMJ)

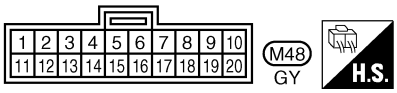
TKWT1589E

LT-DTRL-06

: DATA LINE







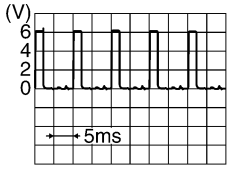
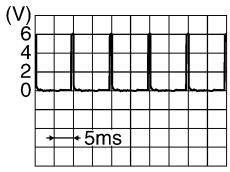
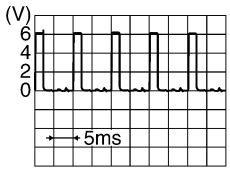
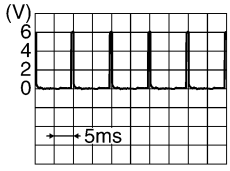
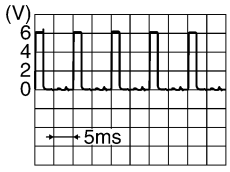
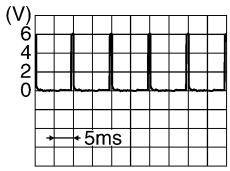
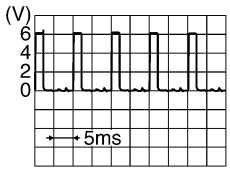
REFER TO THE FOLLOWING.

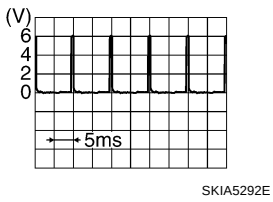
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT1730E

Terminals and Reference Values for BCM

AKS00AOY

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

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

Terminals and Reference Values for IPDM E/R

AKS009QR

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

Terminals and Reference Value for Daytime Light Control Unit

AKS009NA

Terminal No.	Wire color	Item	Condition	Reference value
1	W/R	Alternator	When turning ignition switch to “ON”	Approx. 0V
			When engine is running	Battery voltage
			When turning ignition switch to “OFF”	Approx. 0V
2	L/W	Start signal	When turning ignition switch to “START”	Battery voltage
			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
6	L	RH hi beam	When lighting switch is turned to the 2ND position with “HI BEAM” or “FLASH TO PASS” position	Battery voltage
			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
7	SB	LH hi beam	When lighting switch is turned to the 2ND position with “HI BEAM” or “FLASH TO PASS” position	Battery voltage
			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
9	Y/G	LH hi beam (ground)	When turning lighting switch to the 2ND position with “HI BEAM” or “FLASH TO PASS” position	Approx. 0V
			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	B	Ground	—	—
17	G	Parking brake switch	When parking brake is released	Battery voltage
			When parking brake is allied	Approx. 0V

How to Proceed With Trouble Diagnosis

AKS009NB

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

Preliminary Check

AKS00AOZ

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown fuses.

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

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

OK or NG

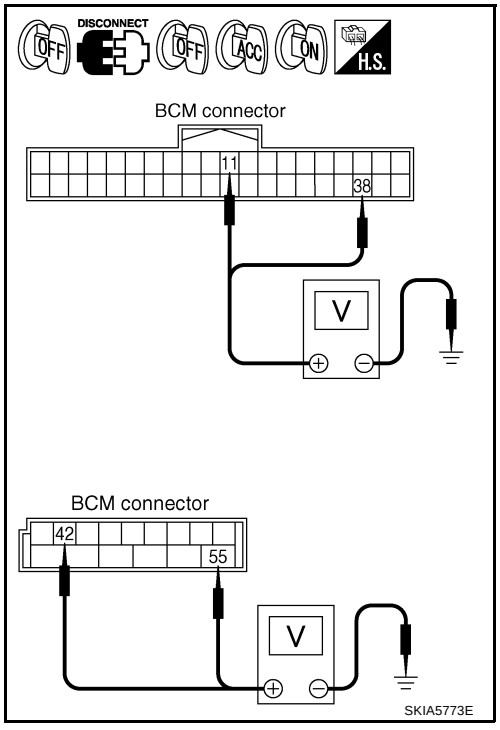
OK >> GO TO 2.

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

2. CHECK POWER SUPPLY CIRCUIT

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

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



OK or NG

OK >> GO TO 3.

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

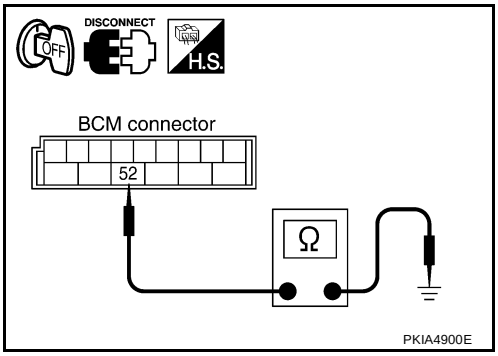
3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

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

OK or NG

OK >> INSPECTION END
NG >> Check ground circuit harness.



CONSULT-II Functions (BCM)

AKS009ND

CONSULT-II performs the following functions communicating with BCM.

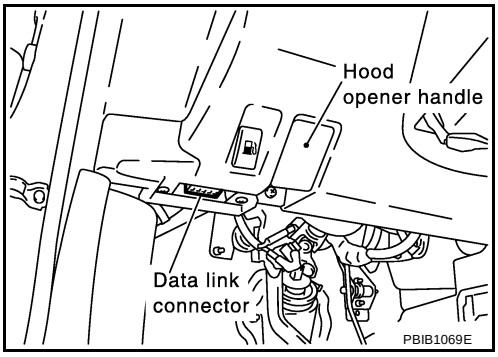
BCM diagnosis part	Check item, diagnosis mode	Description
HEADLAMP	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
BCM	CAN DIAG SUPPORT MNTR	The result transmit/receive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

CONSULT-II BASIC OPERATION

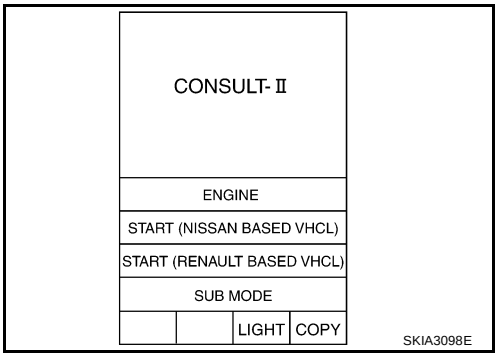
CAUTION:

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

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

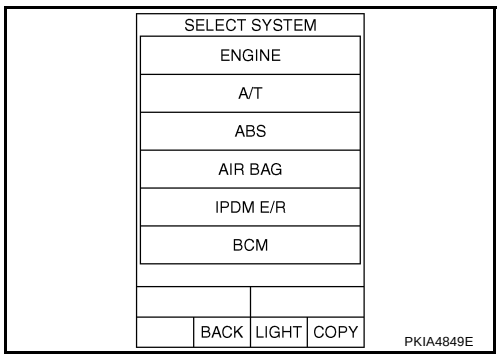


2. Touch “START(NISSAN BASED VHCL)”.

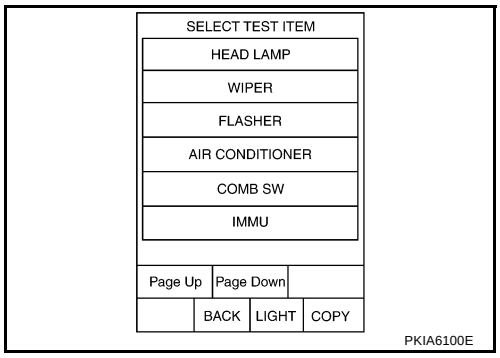


3. Touch “BCM” on “SELECT SYSTEM” screen.

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



4. Touch “HEAD LAMP” on “SELECT TEST ITEM” screen.



WORK SUPPORT

Operation Procedure

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

Display Item List

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

DATA MONITOR

Operation Procedure

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

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

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

Display Item List

Monitor item		Contents
IGN ON SW	“ON/OFF”	Displays “IGN position (ON)/OFF, ACC position (OFF)” judged from the ignition switch signal.
ACC ON SW	“ON/OFF”	Displays “ACC (ON)/OFF, Ignition OFF (OFF)” status judged from ignition switch signal.
HI BEAM SW	“ON/OFF”	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
HEAD LAMP SW 1	“ON/OFF”	Displays status (headlamp switch 1: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
HEAD LAMP SW 2	“ON/OFF”	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
LIGHT SW 1 ST	“ON/OFF”	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
AUTO LIGHT SW[NOTE]	“ON/OFF”	—
PASSING SW	“ON/OFF”	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW[NOTE]	“ON/OFF”	—
DOOR SW - DR	“ON/OFF”	Displays status of 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 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)

AKS00ABO

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

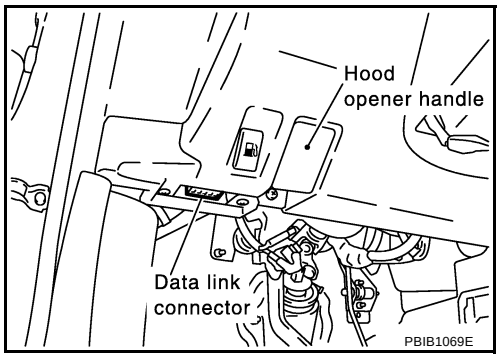
Check Item, Diagnosis Mode	Description
SELF-DIAGNOSTIC RESULTS	IPDM E/R performs self-diagnosis of CAN communication.
DATA MONITOR	The input/output data of IPDM E/R is displayed in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST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

CONSULT-II BASIC OPERATION

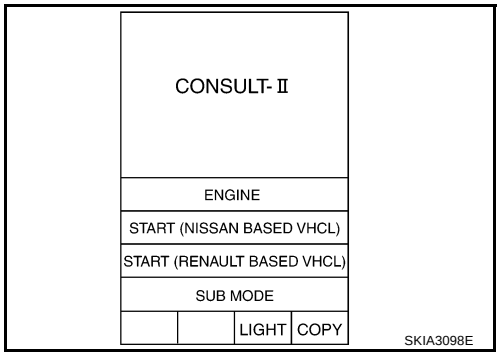
CAUTION:

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

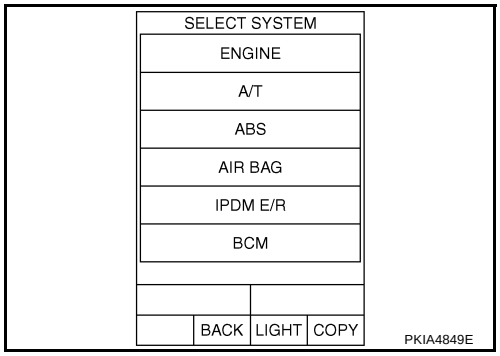
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



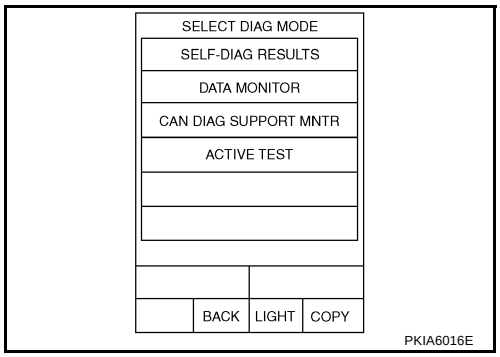
2. Touch “START (NISSAN BASED VHCL)”.



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



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

Item name	CONSULT-II screen display	Display or unit	Monitor item selection			Description
			ALL SIG-NALS	MAIN SIGNALS	SELECTION FROM MENU	
Position lights request	TAIL&CLR REQ	ON/OFF	×	×	×	Signal status input from BCM
Headlamp low beam request	HL LO REQ	ON/OFF	×	×	×	Signal status input from BCM
Headlamp high beam request	HL HI REQ	ON/OFF	×	×	×	Signal status input from BCM

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

ACTIVE TEST

Operation Procedure

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

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

SELF-DIAGNOSTIC RESULTS

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

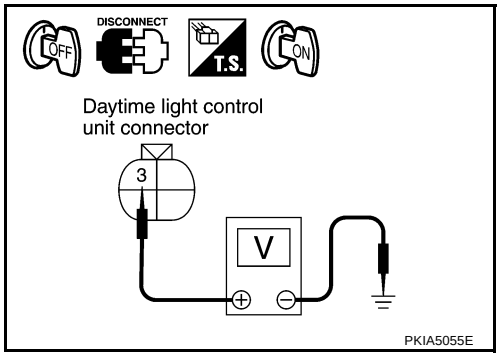
Daytime Light Control Does Not Operate Properly

AKS009NE

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.

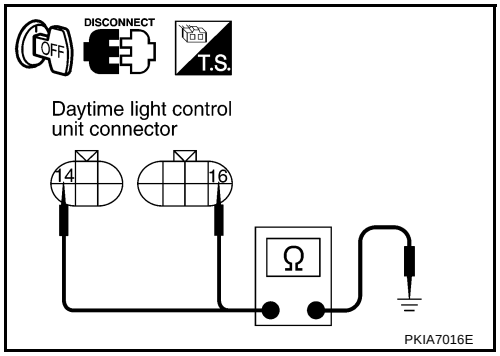
2. CHECK DAYTIME LIGHT CONTROL UNIT AND GROUND

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.

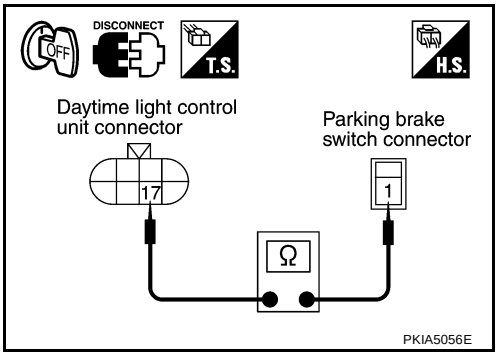
3. CHECK PARKING BRAKE SWITCH CIRCUIT

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.

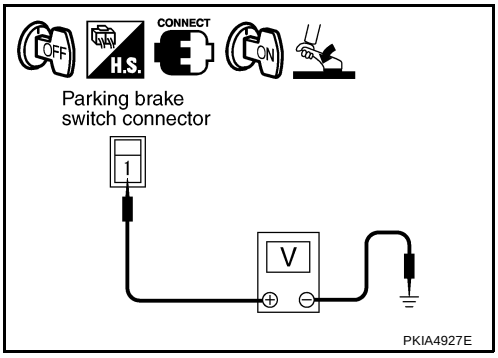
1 (PU) – Ground : Battery voltage should exist.

4. 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.



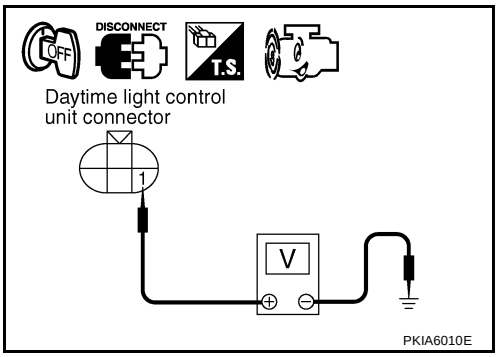
5. CHECK ALTERNATOR CIRCUIT

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.



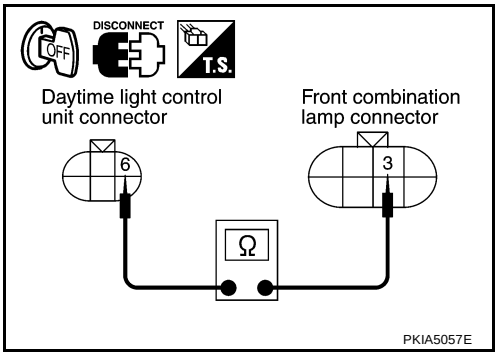
6. CHECK DAYTIME LIGHT CONTROL UNIT CIRCUIT

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 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.



Headlamp High Beam Does Not Illuminate (Both Sides)

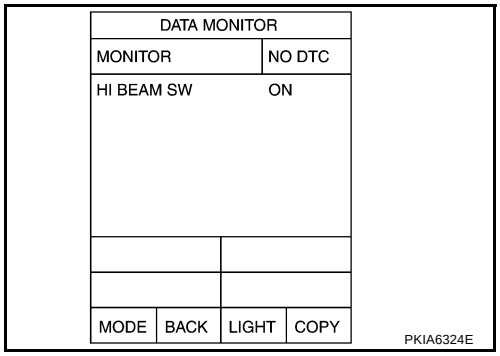
AKS00AT9

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 HIGH BEAM position : HI BEAM SW ON



Without CONSULT-II

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

OK or NG

OK >> GO TO 2.

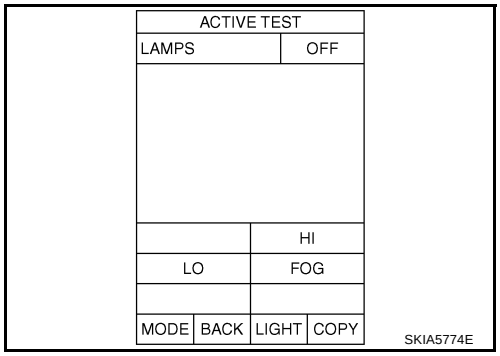
NG >> Check lighting switch. Refer to LT-170, "Combination Switch Inspection" .

2. HEADLAMP ACTIVE TEST

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

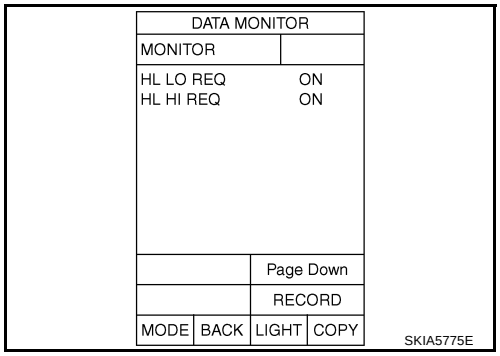
OK >> GO TO 3.

NG >> GO TO 4.

3. CHECK IPDM E/R

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

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



OK or NG

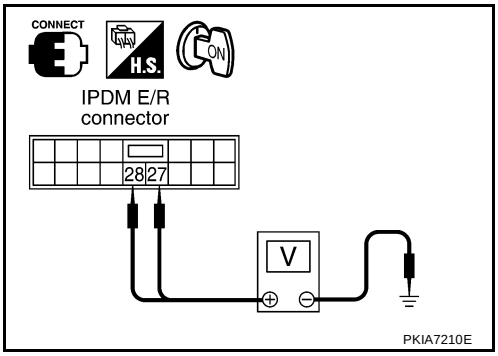
OK >> Replace IPDM E/R.

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

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.
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	Terminal (Wire color)		
E7	27 (BR)	Ground	Battery voltage
	28 (R/Y)		

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)		
E7	27 (BR)	Ground	Battery voltage
	28 (R/Y)		

OK or NG

OK >> Check headlamp bulbs.
NG >> GO TO 5.

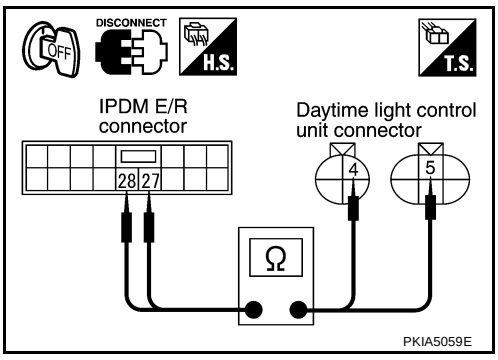
5. CHECK IPDM E/R CIRCUIT

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

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



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

AKS009NG

1. CHECK BULB

Inspect bulb of lamp.

OK or NG

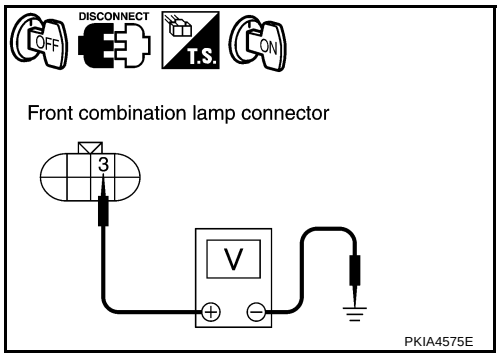
OK >> GO TO 2.
NG >> Replace headlamp bulb.

2. CHECK HEADLAMP INPUT SIGNAL

With CONSULT-II

1. Connect daytime light control unit connector.
2. Select “IPDM E/R” on CONSULT-II and select “ACTIVE TEST” on “SELECT DIAG MODE” screen.
3. Touch “HI” screen.
4. When headlamp high beam is operating, check voltage between front combination lamp 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.

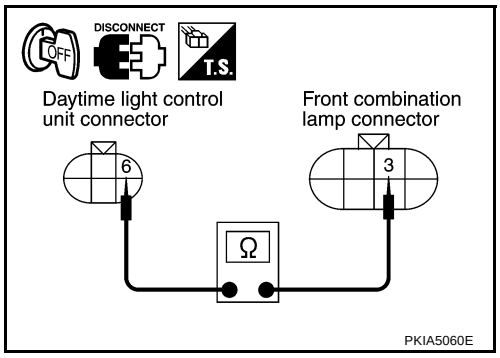
3. CHECK DAYTIME LIGHT CONTROL CIRCUIT

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.

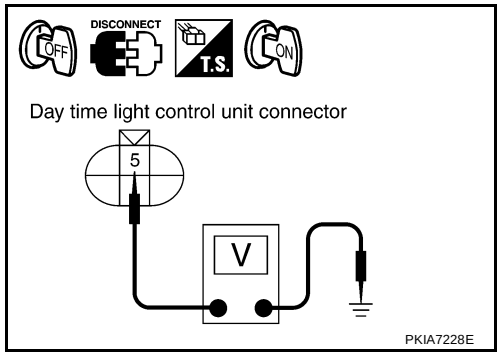


4. CHECK DAYTIME LIGHT CONTROL UNIT INPUT SIGNAL

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.
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

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 E14 terminal 5 (BR) and ground.

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

OK or NG

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

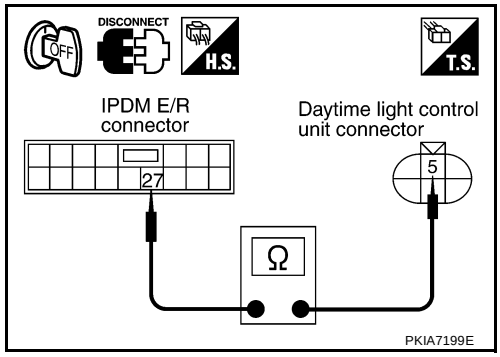
5. CHECK IPDM E/R CIRCUIT

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



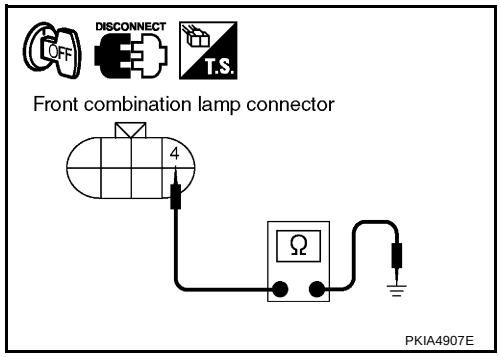
6. CHECK HEADLAMP GROUND

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

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

OK or NG

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



LH High Beam Does Not Illuminate But LH Low Beam Illuminates

AKS009NH

1. CHECK BULB

Inspect bulb of lamp.

OK or NG

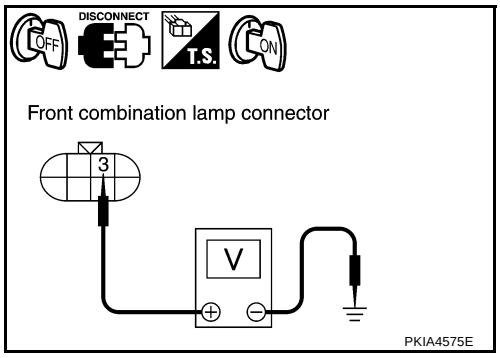
OK >> GO TO 2.
NG >> Replace bulb of lamp.

2. CHECK HEADLAMP INPUT SIGNAL

With CONSULT-II

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

3 (SB) – 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 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.

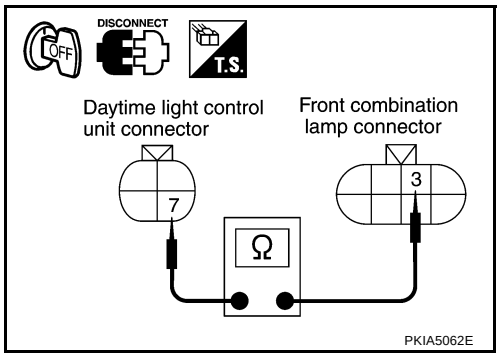
3. CHECK DAYTIME LIGHT CONTROL UNIT CIRCUIT

1. Disconnect daytime light control unit connector and front combination lamp LH connector.
2. 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.

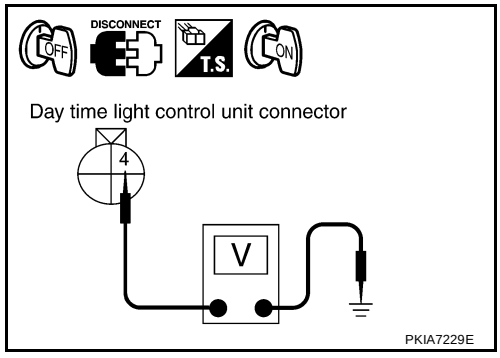


4. CHECK DAYTIME LIGHT CONTROL UNIT INPUT SIGNAL

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.
4. 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.

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

OK or NG

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

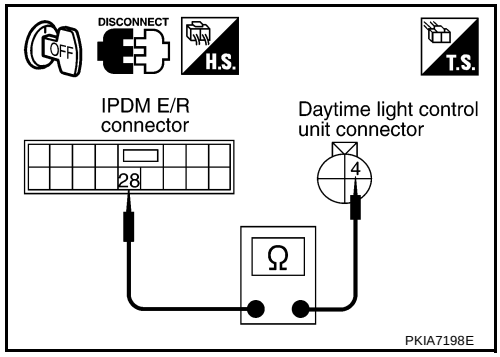
5. CHECK IPDM E/R CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check harness continuity 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.



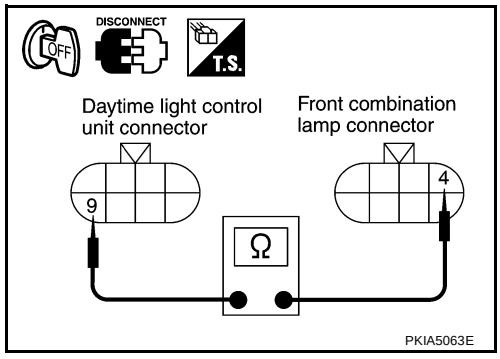
6. CHECK DAYTIME LIGHT CONTROL UNIT CIRCUIT

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

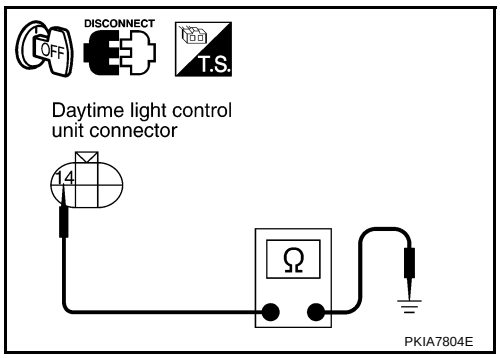
OK >> GO TO 7.
NG >> Repair harness or connector.



7. CHECK DAYTIME LIGHT CONTROL UNIT GROUND

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

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



OK or NG

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

Headlamp Low Beam Does Not Illuminate (Both Sides)

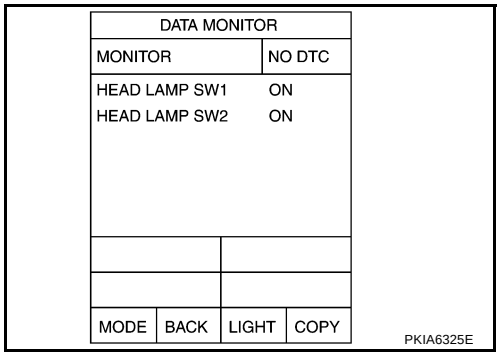
AKS00ABP

1. CHECK COMBINATION SWITCH INPUT SIGNAL

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

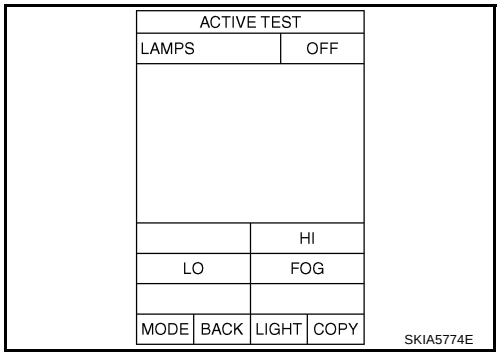
OK >> GO TO 2.
NG >> Check lighting switch. Refer to LT-170, "Combination Switch Inspection" .

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 “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.

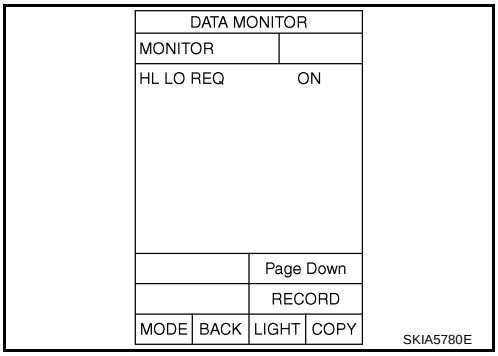
OK or NG

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

3. CHECK IPDM E/R

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

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



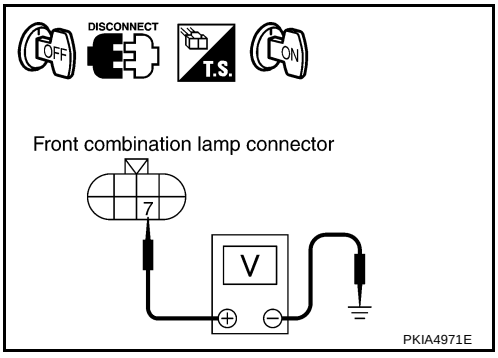
OK or NG

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

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

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

OK or NG

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

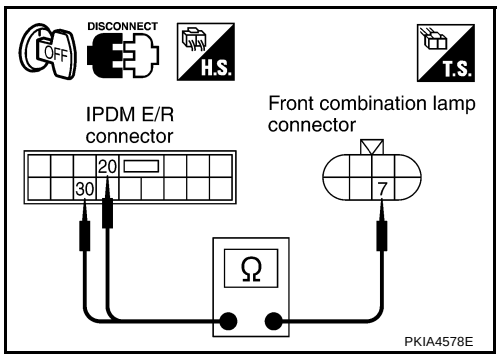
5. CHECK HEADLAMP CIRCUIT

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.

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

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



OK or NG

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

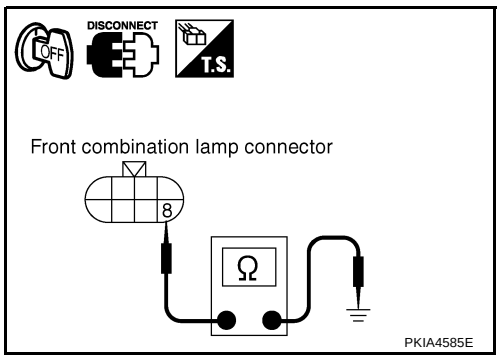
6. CHECK HEADLAMP GROUND

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)

AKS00ABQ

1. CHECK BULB

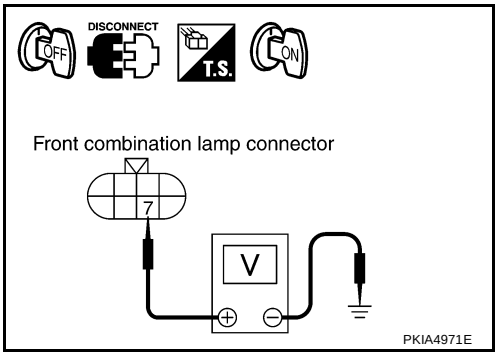
Check ballasts (HID control unit) and xenon bulb of lamp which does not illuminate. Refer to LT-32, "Xenon Headlamp Trouble Diagnosis" .

OK or NG

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

2. CHECK HEADLAMP INPUT SIGNAL

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



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

OK or NG

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

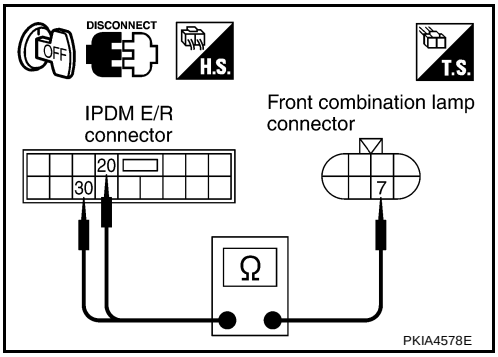
3. CHECK HEADLAMP CIRCUIT

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.

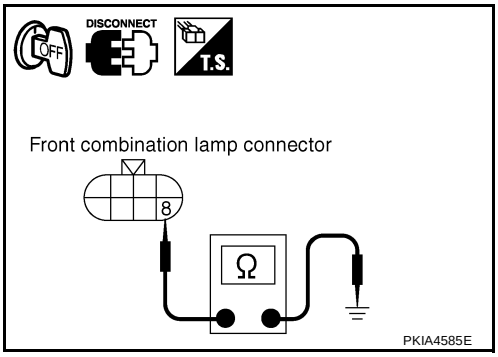
4. CHECK HEADLAMP GROUND

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

8 (B) – Ground : Continuity should exist.

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

8 (B) – Ground : Continuity should exist.

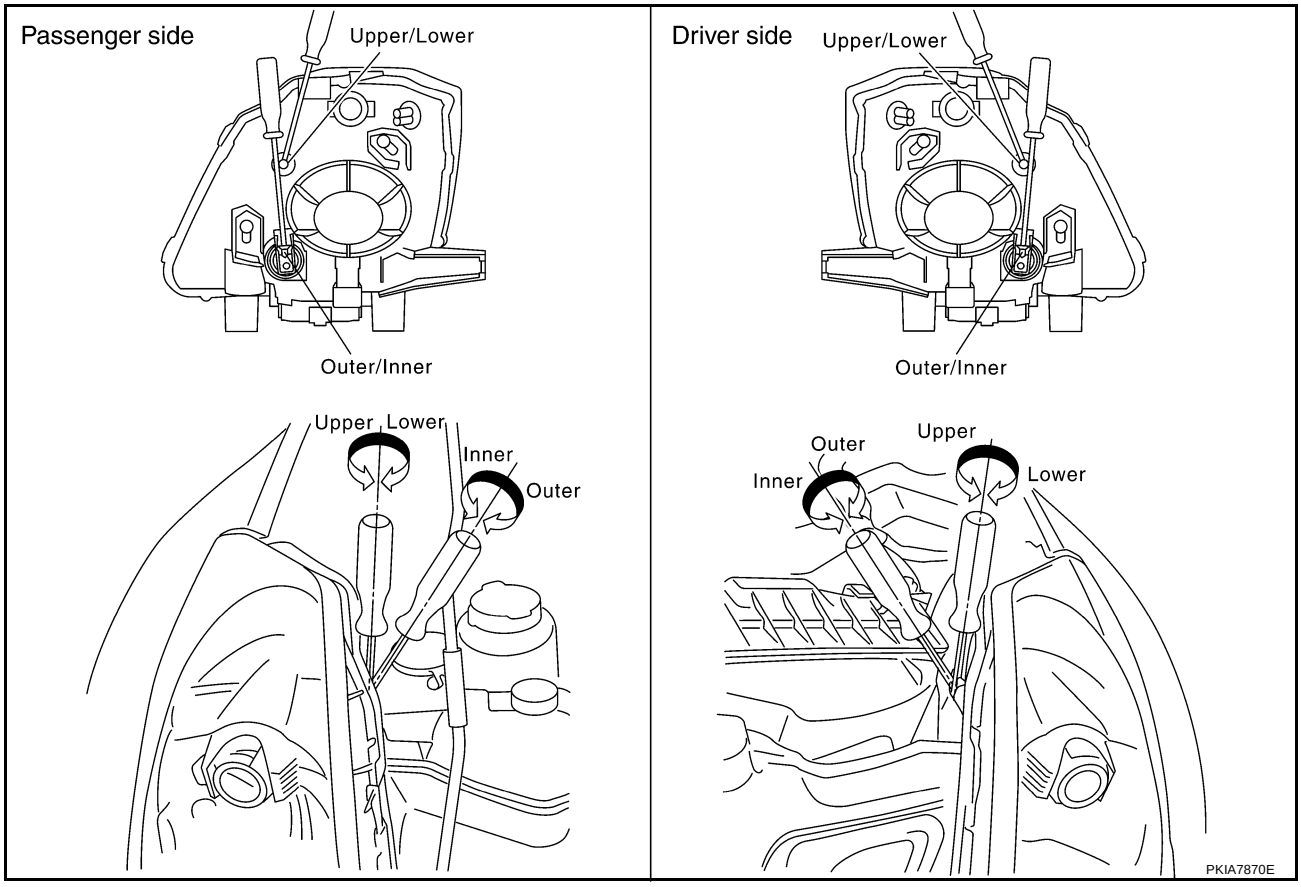


OK or NG

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

Aiming Adjustment

AKS009NL



PREPARATION BEFORE ADJUSTING

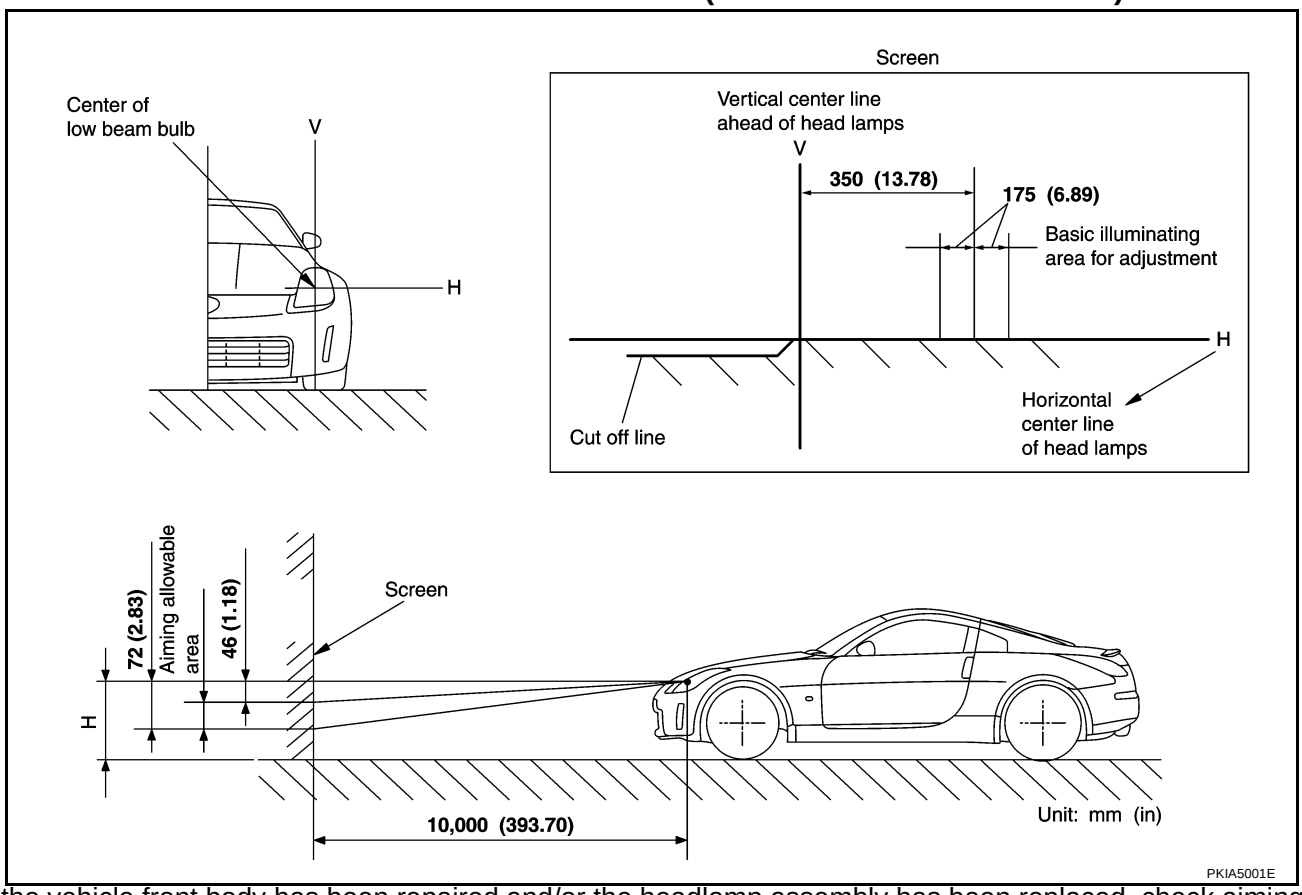
For details, refer to the regulations in your own country.
Before performing aiming adjustment, check the following.

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

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

ADJUSTMENT USING AN ADJUSTMENT SCREEN (LIGHT/DARK BORDERLINE)



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

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

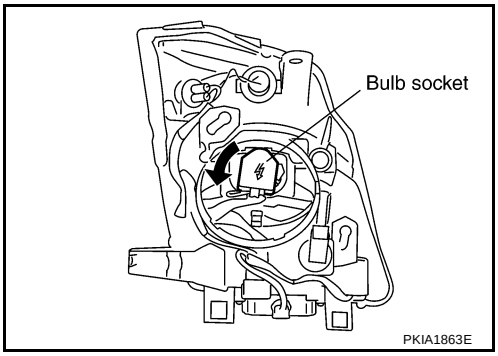
Bulb Replacement

AKS009NM

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 LT-100, "Aiming Adjustment" .



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

HEADLAMP (LOWER) HIGH BEAM

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

   CAUTION:
   After the battery cables are disconnected, do not open/close the driver and/or front passenger door with the window in the full up position. The automatic window adjusting function will not work and the side roof panel may be damaged.
3. Remove fender protector (front). Refer to EI-21, "FENDER PROTECTOR" in “EI” section.
4. Turn plastic cap counterclockwise and unlock it.
5. Disconnect bulb socket.
6. Unlock retaining spring and remove bulb from headlamp.
7. Install in reverse order of removal.

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

PARKING LAMP (CLEARANCE LAMP)

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

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

FRONT TURN SIGNAL LAMP

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

Front turn signal lamp	**: 12V - 21W**

FRONT SIDE MARKER LAMP

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

Front side marker lamp	**: 12V - 5W**

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

Removal and Installation

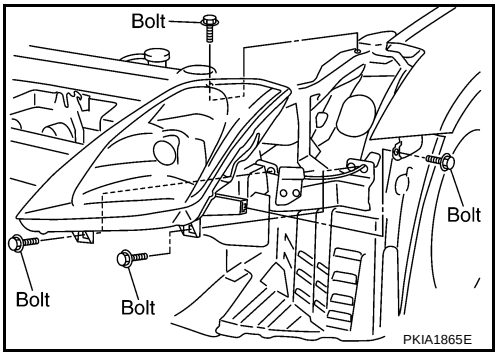
AKS009NN

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.



INSTALLATION

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

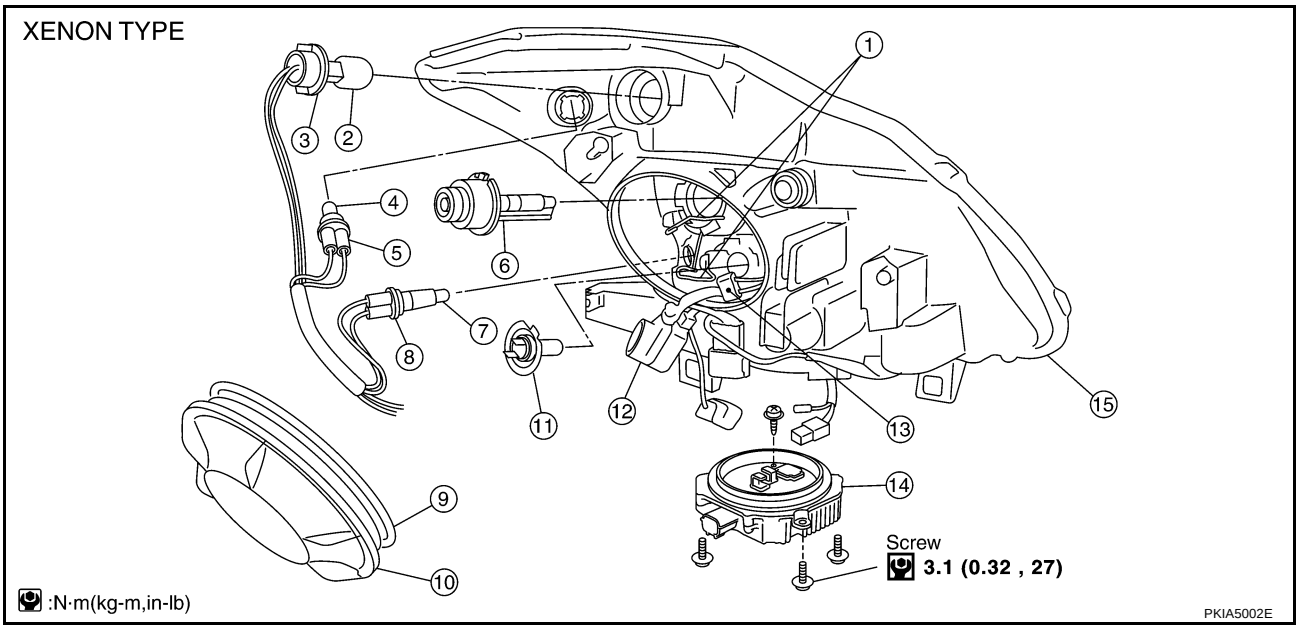
Headlamp mounting bolt:

: 6.1N·m (0.62 kg-m, 54 in lb)

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

Disassembly and Assembly

AKS009NO



1. Retaining spring	2. Front turn signal lamp bulb	3. Front turn signal lamp bulb socket
4. Side marker lamp bulb	5. Side marker lamp bulb socket	6. Xenon bulb
7. Parking lamp (Clearance lamp) bulb	8. Parking lamp (Clearance lamp) bulb socket	9. Seal rubber
10. Plastic cap	11. Halogen bulb (high)	12. Xenon bulb socket
13. Halogen bulb socket	14. HID C/U	15. Headlamp housing 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)

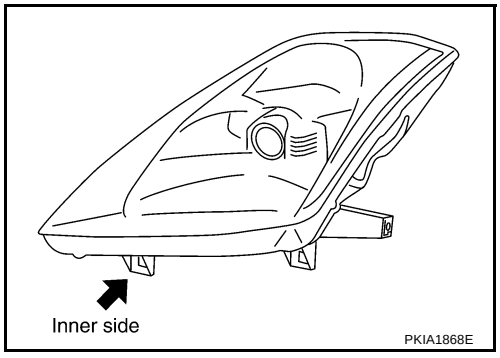
CAUTION:

- **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

AKS009NP

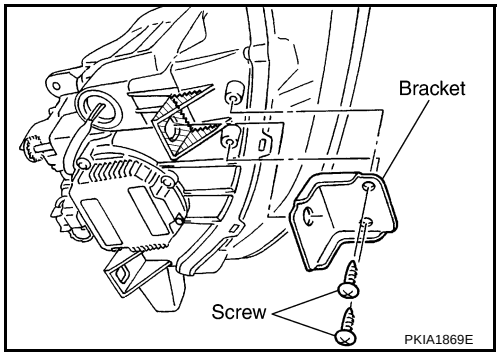
If only installation part as shown in the figure is damaged, and headlamp housing itself is not damaged, repair can be completed easily by installing correction brackets.



INSTALLATION OF HEADLAMP BRACKET

1. Remove headlamps. Refer to LT-103, "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**

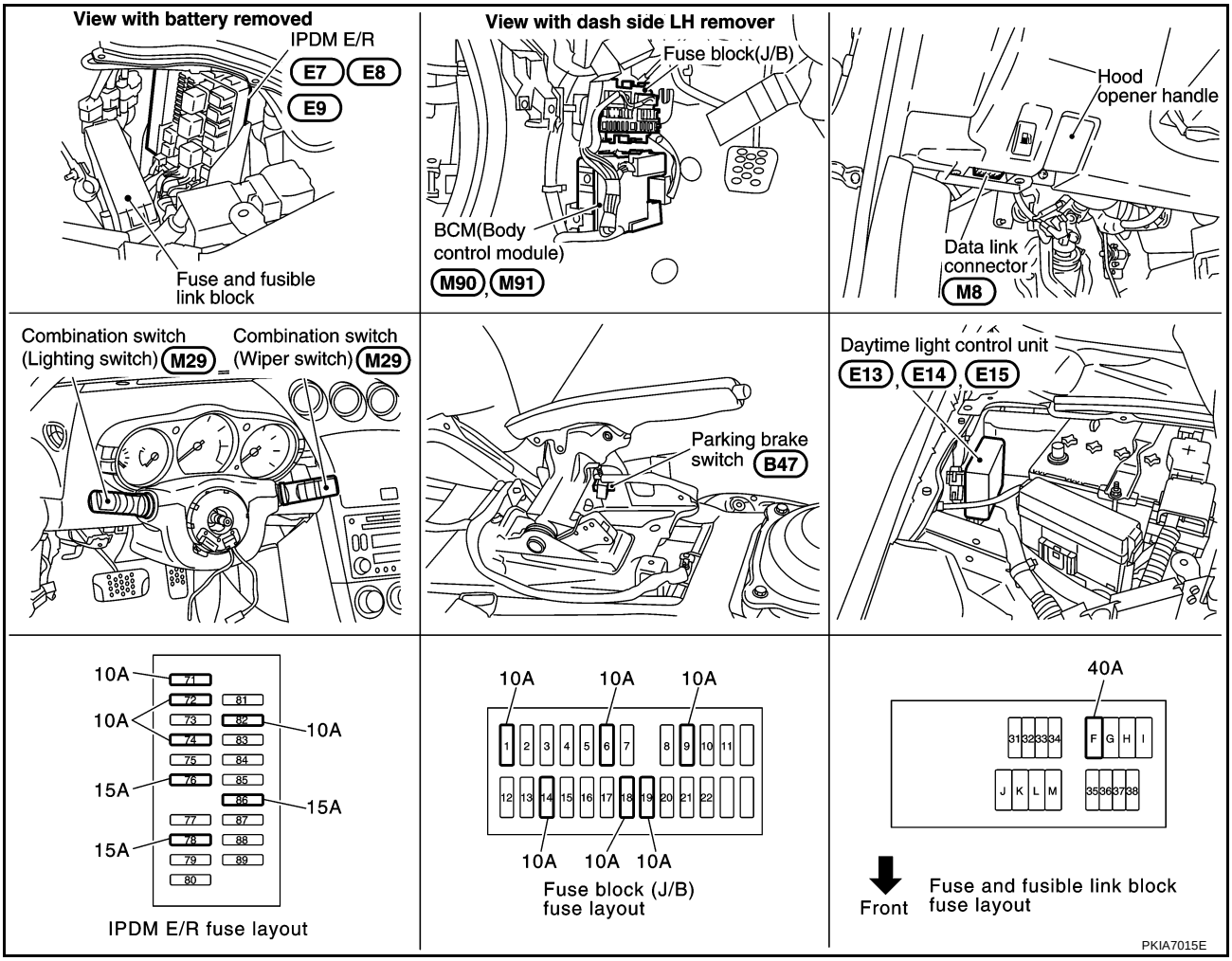


HEADLAMP (FOR CANADA) - CONVENTIONAL TYPE -

PFP:26010

Component Parts and Harness Connector Location

AKS009SK



System Description

AKS009SL

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

OUTLINE

Power is supplied at all times

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

Power is also supplied at all times

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

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

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

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

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

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

With ignition switch in START position, power is supplied

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

Ground is supplied

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

HEADLAMP OPERATION

Low Beam Operation

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

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

Ground is supplied at all times

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

With power and ground supplied, low beam headlamps illuminate.

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

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

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

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

Ground is supplied

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

With power and ground supplied, the high beam headlamps illuminate.
Unified meter and A/C amp. receives signal from BCM across CAN communication lines, and then combination meter indicator illuminates high beam.

COMBINATION SWITCH READING FUNCTION

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

EXTERIOR LAMP BATTERY SAVER CONTROL

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

DAYTIME LIGHT OPERATION

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

- through daytime light control unit terminal 7
- to front combination lamp LH terminal 2
- through front combination lamp LH terminal 3
- to daytime light control unit terminal 9
- through daytime light control unit terminal 6
- to front combination lamp RH terminal 2.

Ground is supplied

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

Because high beam headlamps are now wired in series, they operate at half illumination.
If lighting switch is in the 2nd position, daytime light operation is canceled.

OPERATION

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

Engine		With engine stopped									With engine running								
Lighting switch		OFF			1ST			2ND			OFF			1ST			2ND		
		Hi	Lo	P	Hi	Lo	P	Hi	Lo	P	Hi	Lo	P	Hi	Lo	P	Hi	Lo	P
Head-lamp	High beam	–	–	–	–	–	×	×	–	×	●*	●*	×	●*	●*	×	×	–	×
	Low beam	–	–	–	–	–	×	×	×	×	–	–	×	–	–	×	×	×	×
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

AKS009SM

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

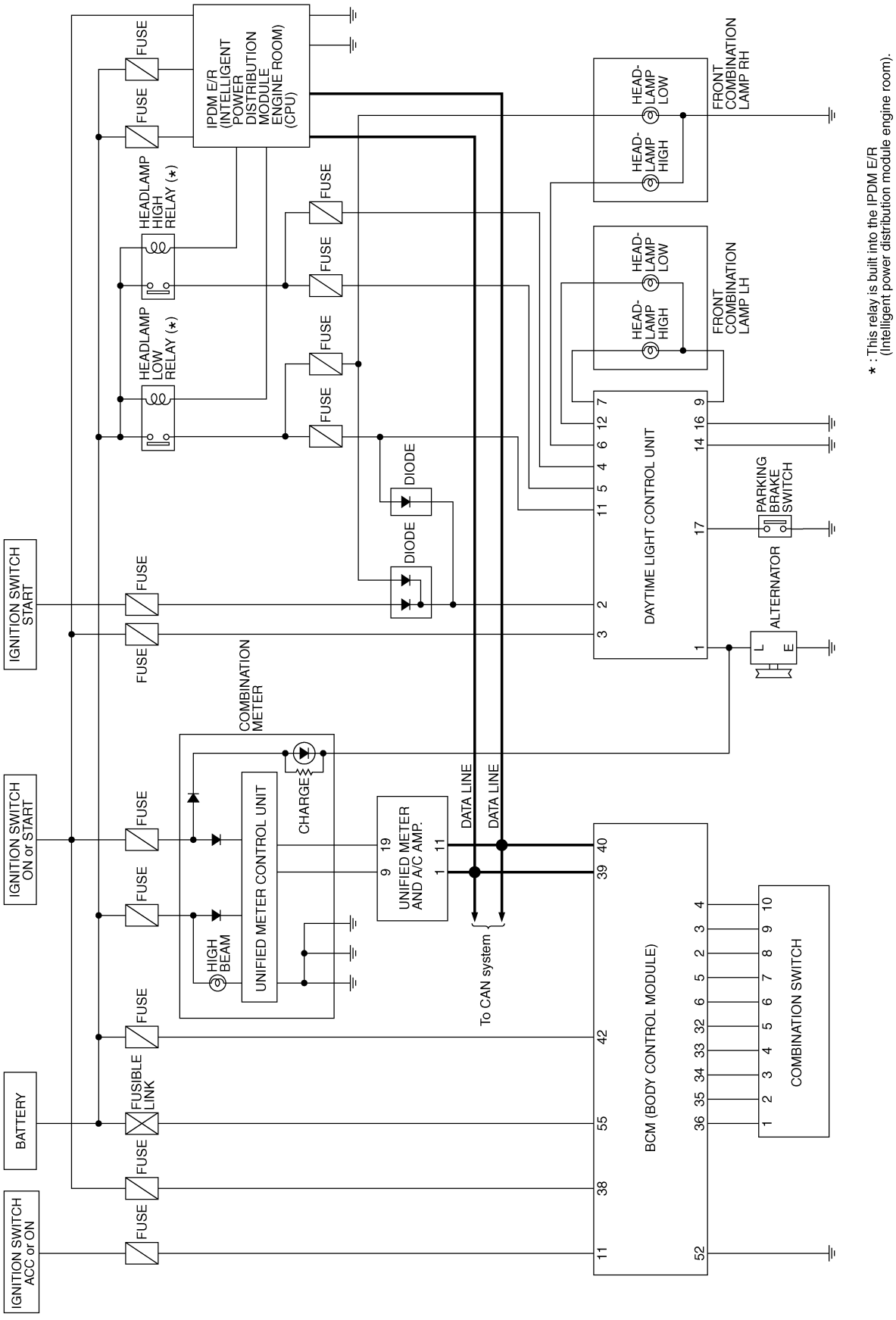
CAN Communication Unit

AKS009SN

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

Schematic

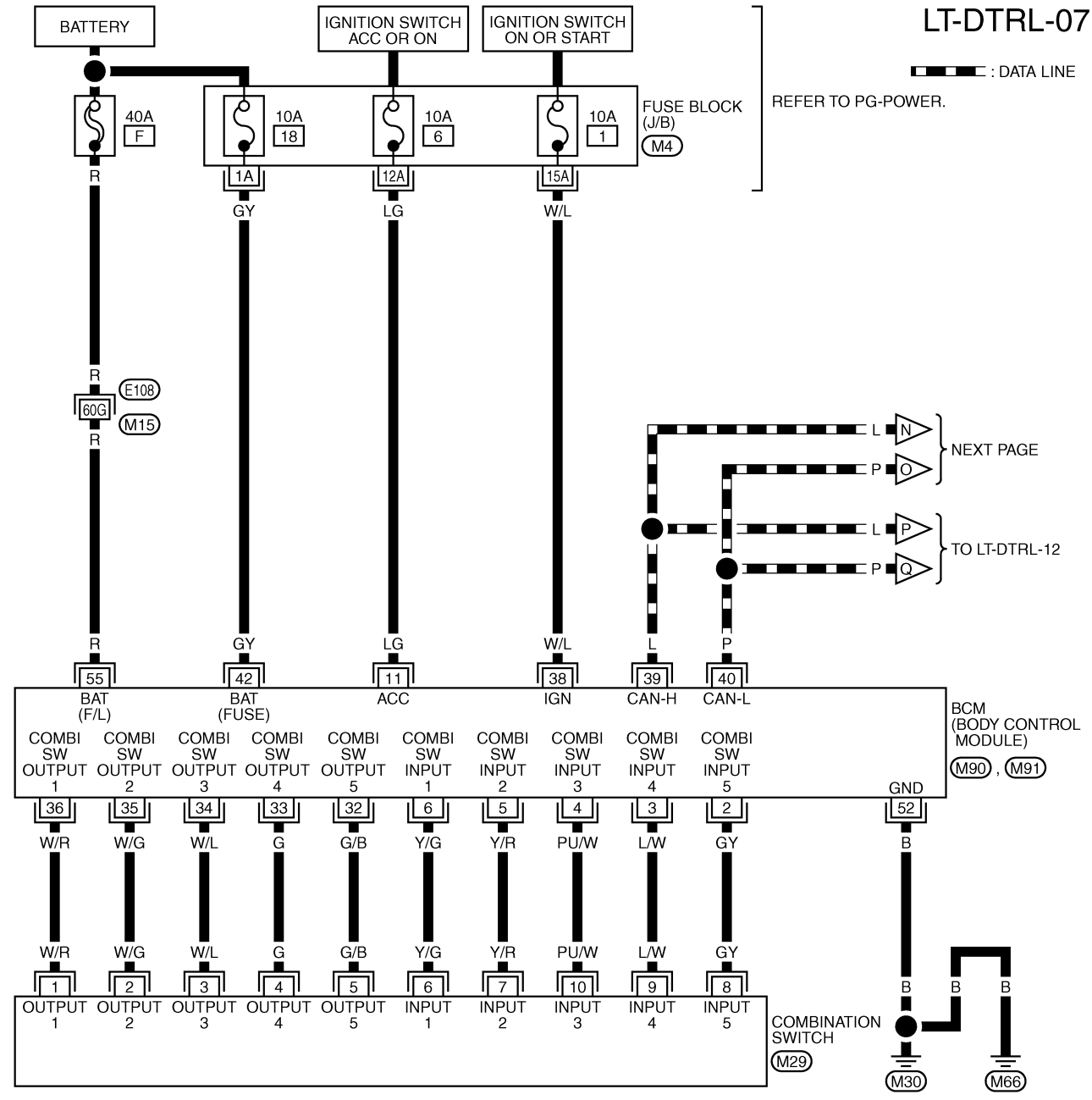
AKS009SO



TKWT1793E

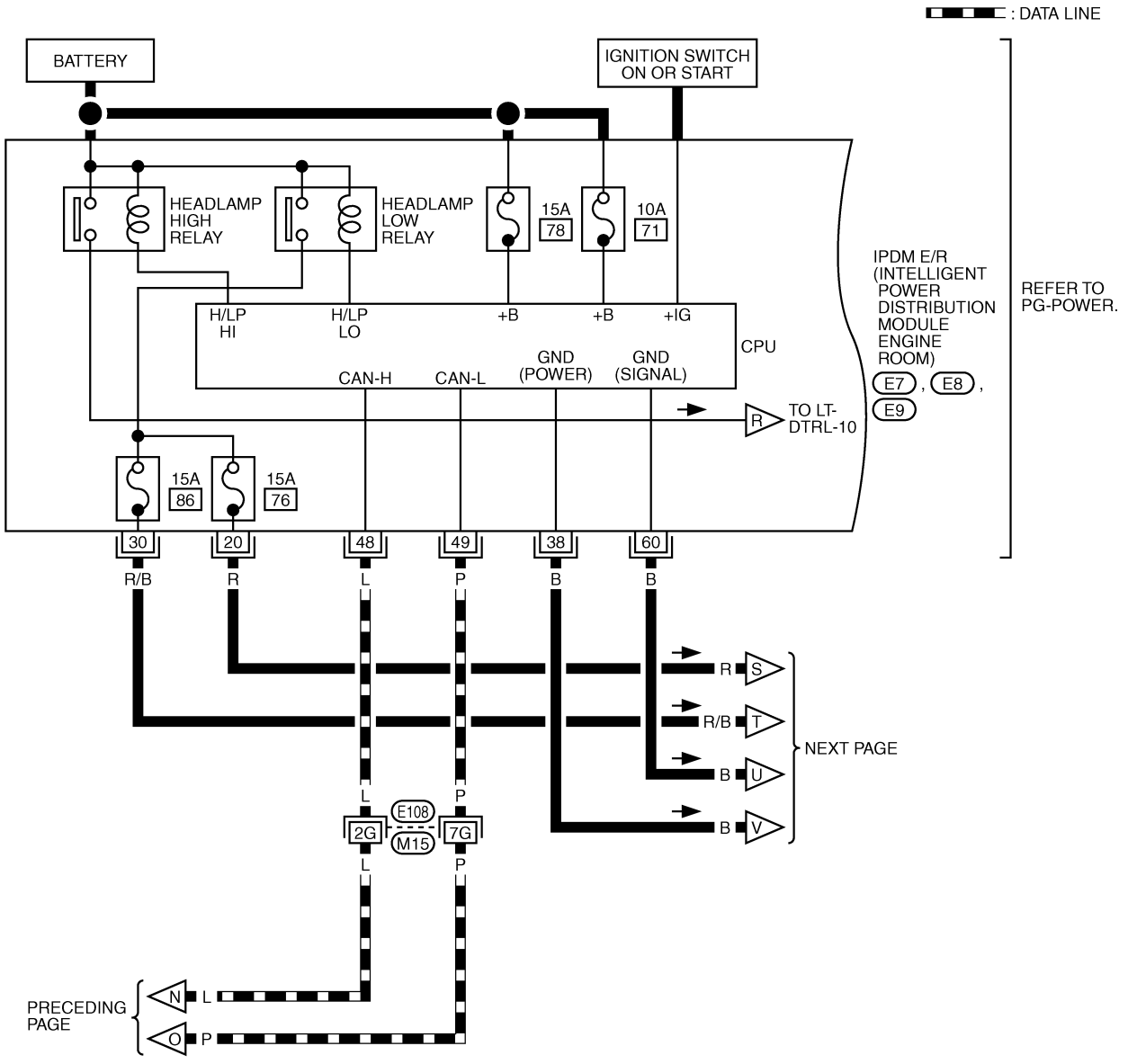
Wiring Diagram — DTRL —

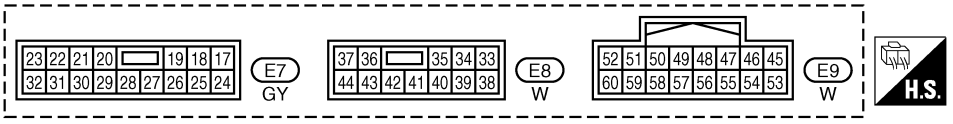
AKS009SP



TKWT1794E

LT-DTRL-08

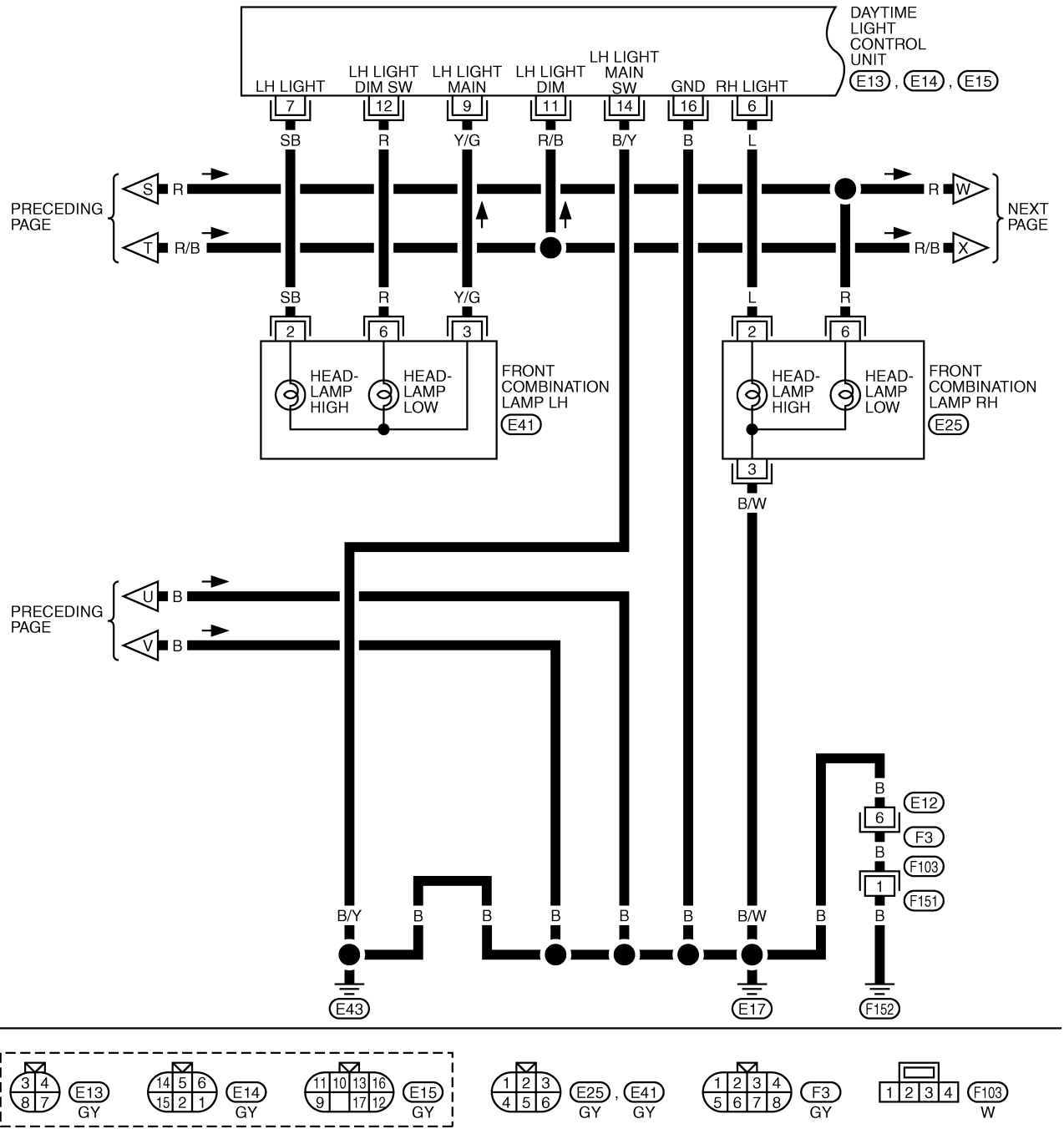




REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)

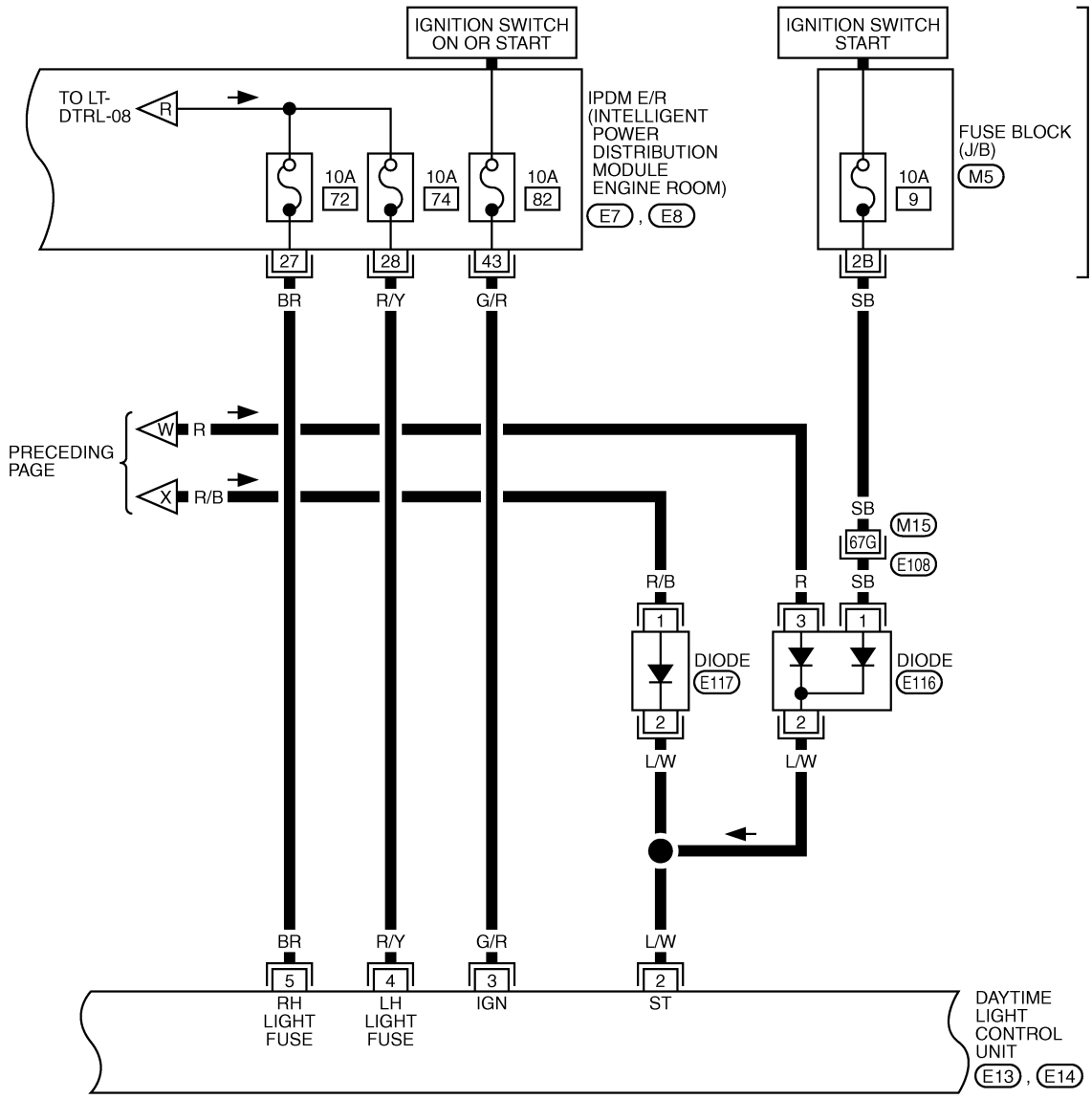
TKWT1795E

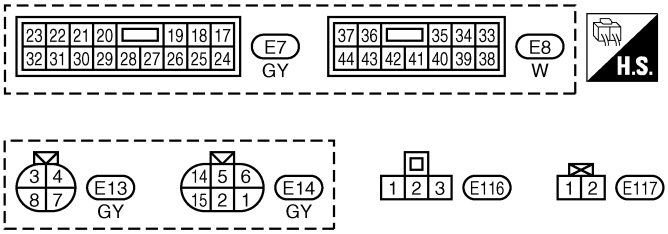
LT-DTRL-09



TKWT1796E

LT-DTRL-10





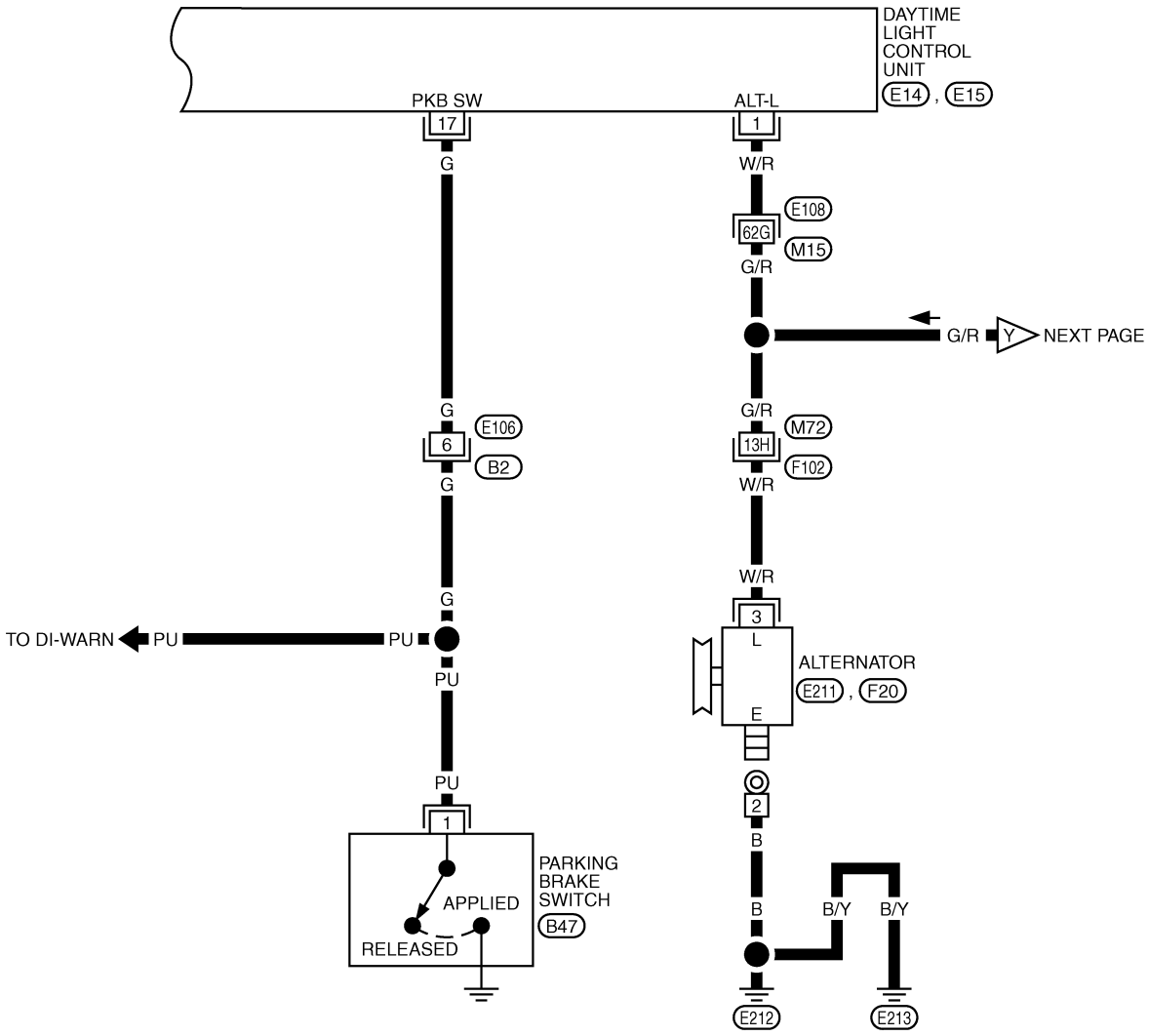
REFER TO THE FOLLOWING.

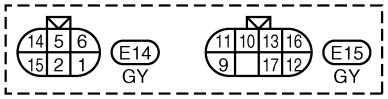
E108 -SUPER MULTIPLE JUNCTION (SMJ)

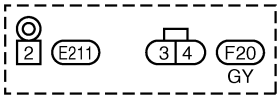
M5 -FUSE BLOCK-JUNCTION BOX (J/B)

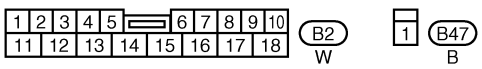
TKWT1797E

LT-DTRL-11







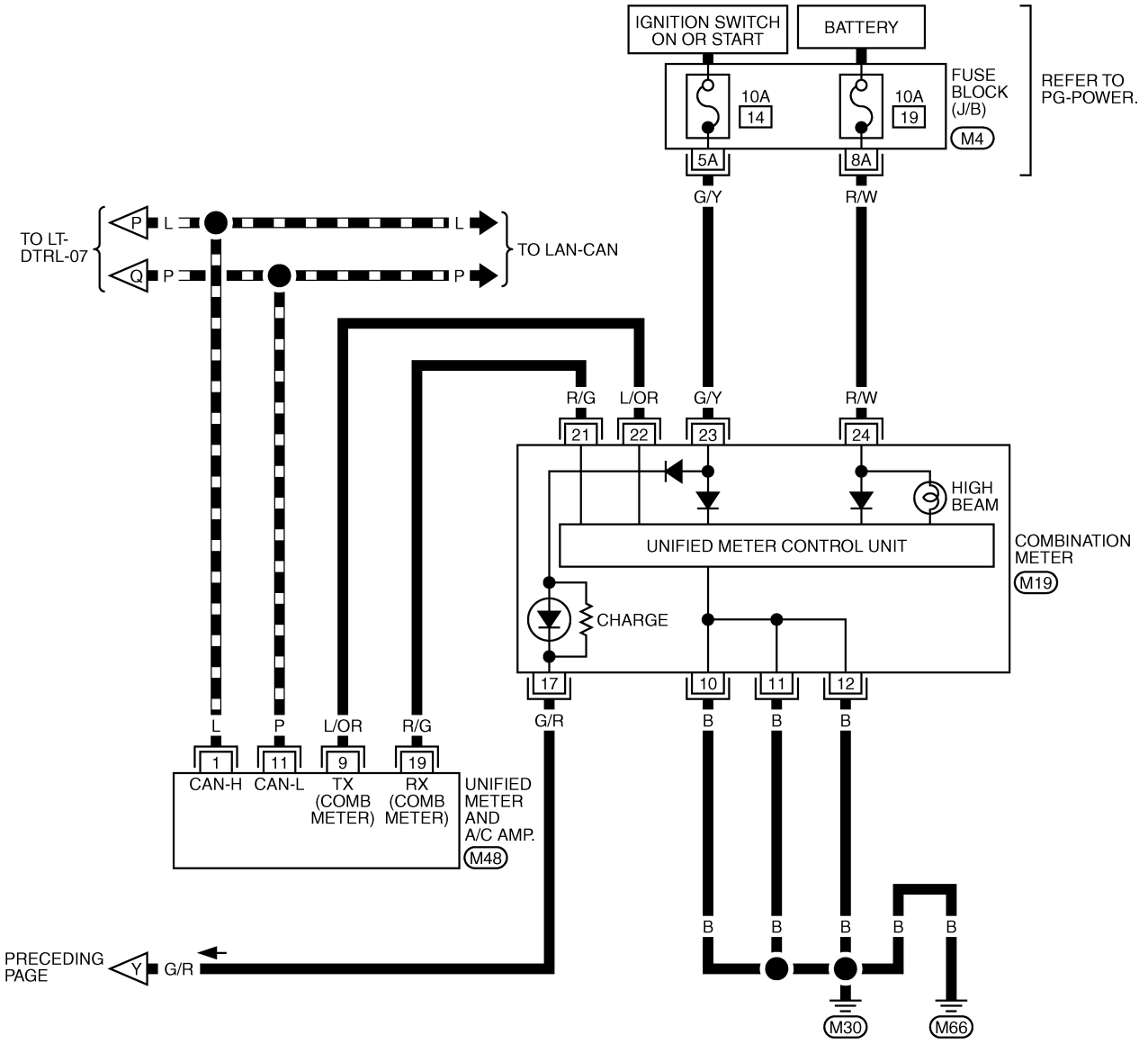


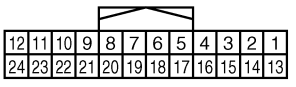
REFER TO THE FOLLOWING.
E108 , F102 -SUPER MULTIPLE JUNCTION (SMJ)

TKWT1798E

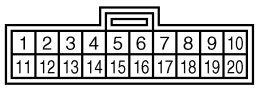
LT-DTRL-12

: DATA LINE





M19
W



M48
GY

H.S.

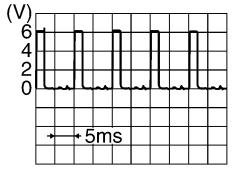
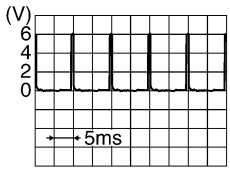
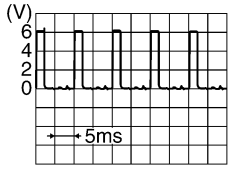
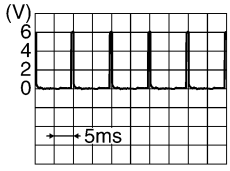
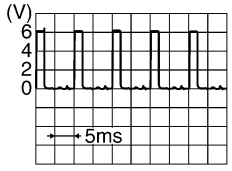
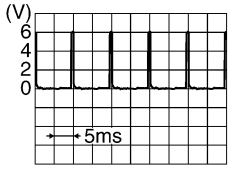
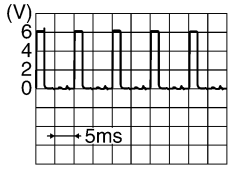
REFER TO THE FOLLOWING.

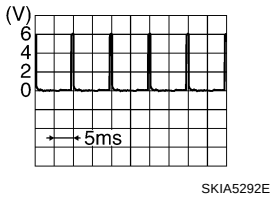
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT1799E

Terminals and Reference Values for BCM

AKS00AQE

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

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

Terminals and Reference Values for IPDM E/R

AKS009T8

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

Terminals and Reference Value for Daytime Light Control Unit

AKS009SQ

Terminal No.	Wire color	Item	Condition	Reference value
1	W/R	Alternator	When turning ignition switch to “ON”	Approx. 0V
			When engine is running	Battery voltage
			When turning ignition switch to “OFF”	Approx. 0V
2	L/W	Start signal	When turning ignition switch to “START”	Battery voltage
			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
6	L	RH hi beam	When lighting switch is turned to the 2ND position with “HI BEAM” or “ FLASH TO PASS” position	Battery voltage
			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
7	SB	LH hi beam	When lighting switch is turned to the 2ND position with “HI BEAM” or “FLASH TO PASS” position	Battery voltage
			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
9	Y/G	LH hi/low beam (ground)	When turning lighting switch to the 2ND position with “HI BEAM” or “FLASH TO PASS” position	Approx. 0V
			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	B	Ground	—	—
17	G	Parking brake switch	When parking brake is released	Battery voltage
			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

AKS009SS

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown fuses.

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

Refer to LT-110, "Wiring Diagram — DTRL —" .

OK or NG

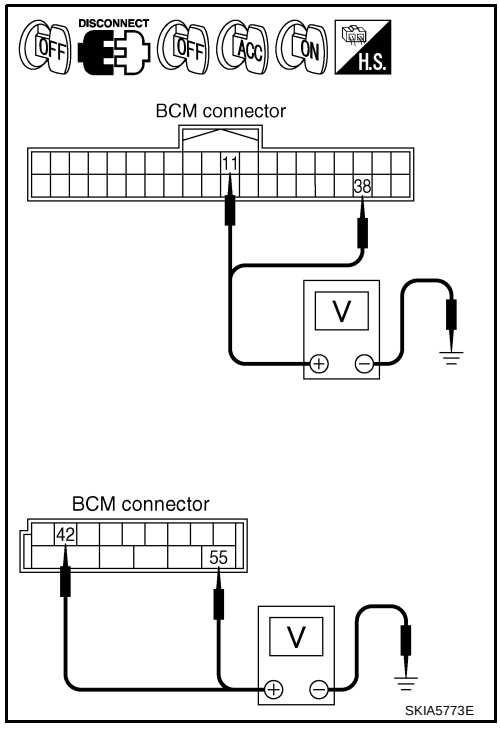
OK >> GO TO 2.

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

2. CHECK POWER SUPPLY CIRCUIT

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

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



OK or NG

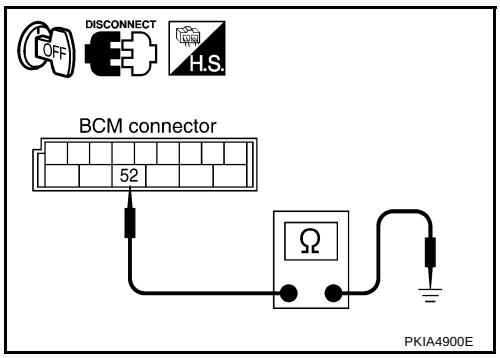
OK >> GO TO 3.

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

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



OK or NG

OK >> INSPECTION END
NG >> Check ground circuit harness.

CONSULT-II Functions (BCM)

AKS00ABR

CONSULT-II performs the followings communicating with BCM.

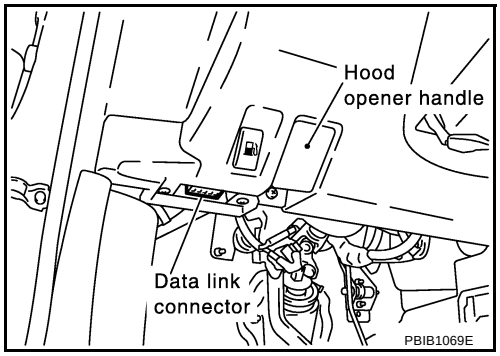
BCM diagnosis part	Check item, diagnosis mode	Description
HEADLAMP	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
BCM	CAN DIAG SUPPORT MNTR	The result of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

CONSULT-II BASIC OPERATION

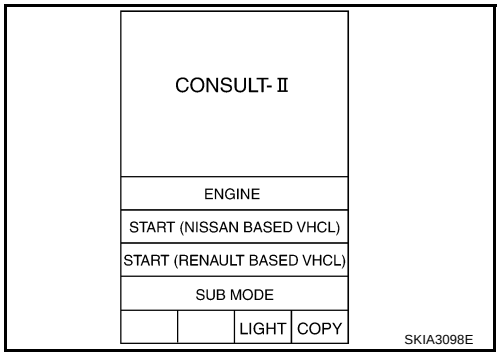
CAUTION:

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

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

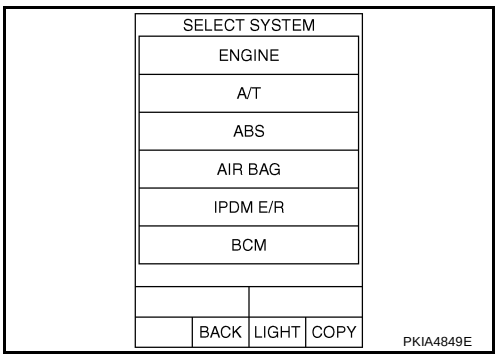


2. Touch “START(NISSAN BASED VHCL)”.

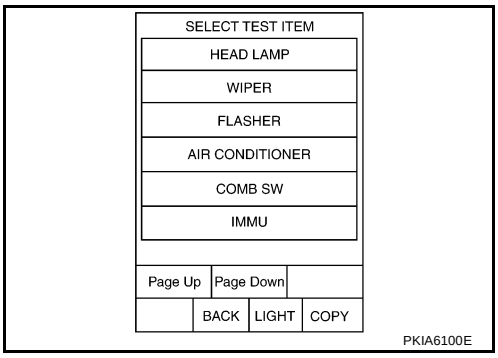


3. Touch “BCM” on “SELECT SYSTEM” screen.

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



4. Touch “HEAD LAMP” on “SELECT TEST ITEM” screen.



WORK SUPPORT

Operation Procedure

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
BATTERY SAVER SET	Exterior lamp battery saver control mode can be changed in this mode. Selects exterior lamp battery saver control mode between two ON/OFF.	ON	×
		OFF	—

DATA MONITOR

Operation Procedure

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

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

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

Display Item List

Monitor item		Contents
IGN ON SW	“ON/OFF”	Displays “IGN position (ON)/OFF, ACC position (OFF)” judged from the ignition switch signal.
ACC ON SW	“ON/OFF”	Displays “ACC (ON)/OFF, Ignition OFF (OFF)” status judged from ignition switch signal.
HI BEAM SW	“ON/OFF”	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
HEAD LAMP SW 1	“ON/OFF”	Displays status (headlamp switch 1: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
HEAD LAMP SW 2	“ON/OFF”	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
LIGHT SW 1 ST	“ON/OFF”	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
AUTO LIGHT SW[NOTE]	“ON/OFF”	—
PASSING SW	“ON/OFF”	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW[NOTE]	“ON/OFF”	—
DOOR SW - DR	“ON/OFF”	Displays status of the driver door as judged from the driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - AS	“ON/OFF”	Displays status of the passenger door as judged from the passenger door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RR[NOTE]	“OFF”	—
DOOR SW - 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)

AKS00ABS

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

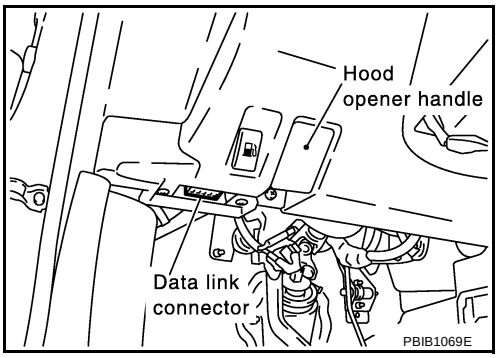
Check Item, Diagnosis Mode	Description
SELF-DIAGNOSTIC RESULTS	The IPDM E/R performs self-diagnosis of CAN communication.
DATA MONITOR	The input/output data of the IPDM E/R is displayed in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE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

CONSULT-II BASIC OPERATION

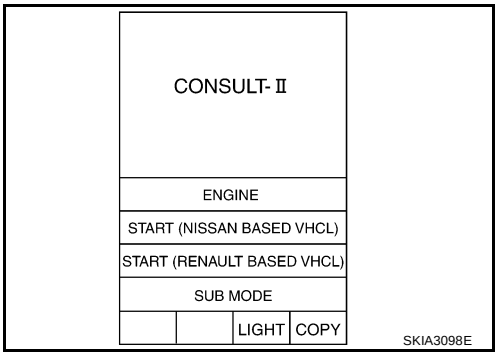
CAUTION:

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

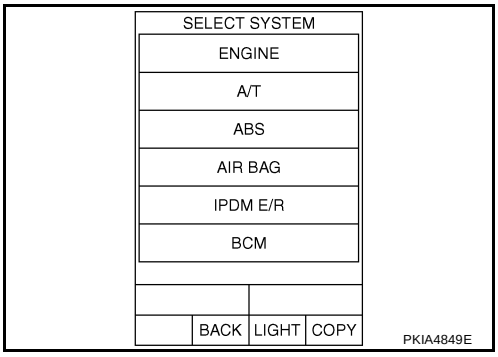
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



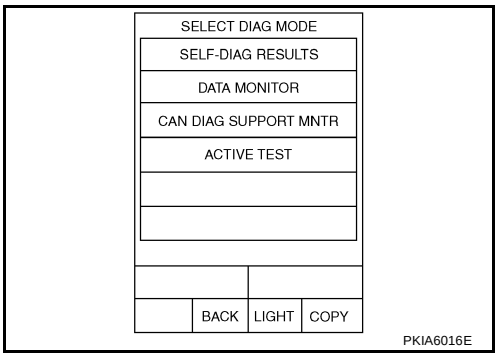
2. Touch “START (NISSAN BASED VHCL)”.



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



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

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

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

ACTIVE TEST

Operation Procedure

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

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

SELF-DIAGNOSTIC RESULTS

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

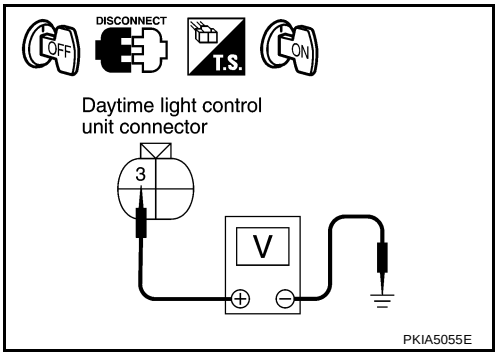
Daytime Light Control Does Not Operate Properly

AKS00ABU

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.

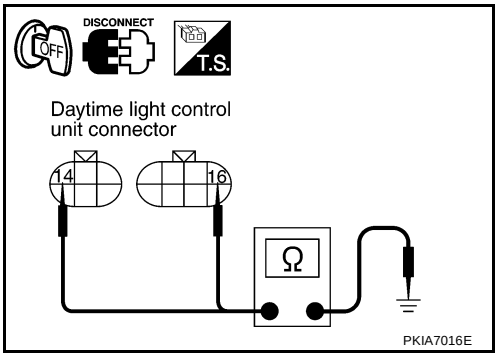
2. CHECK FOR DAYTIME LIGHT CONTROL UNIT GROUND

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.



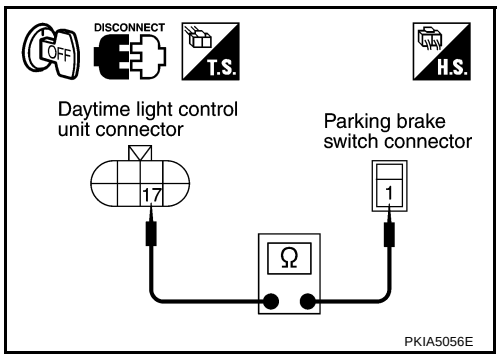
OK or NG

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

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.

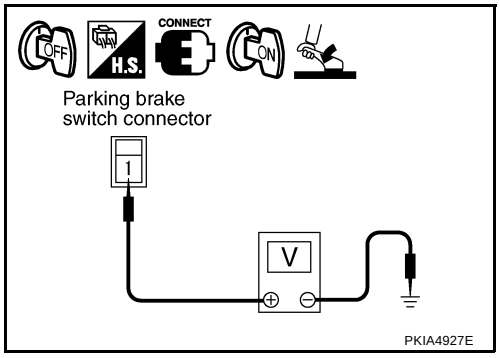
4. CHECK PARKING BRAKE SWITCH

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.

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

1 (PU) – Ground : Approx. 0V



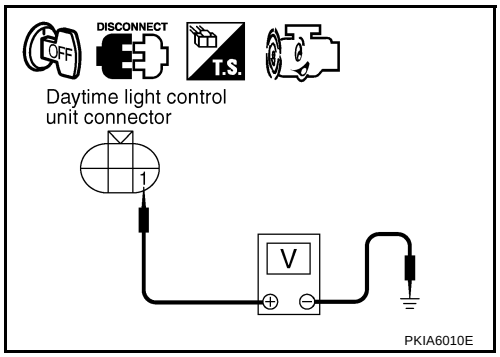
OK or NG

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.



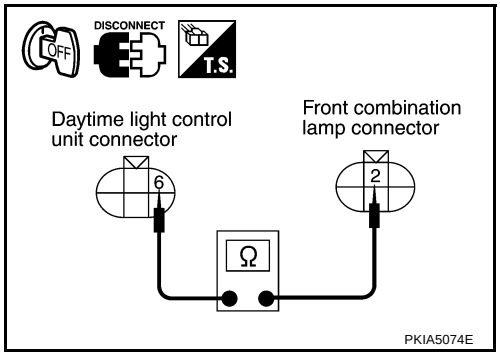
OK or NG

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.

Headlamp High Beam Does Not Illuminate (Both Sides)

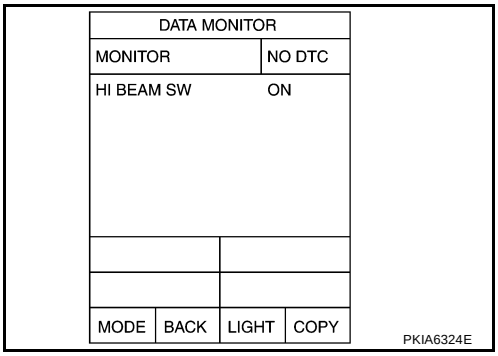
AKS00ATA

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 HIGH BEAM position : HI BEAM SW ON



Without CONSULT-II

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

OK or NG

OK >> GO TO 2.

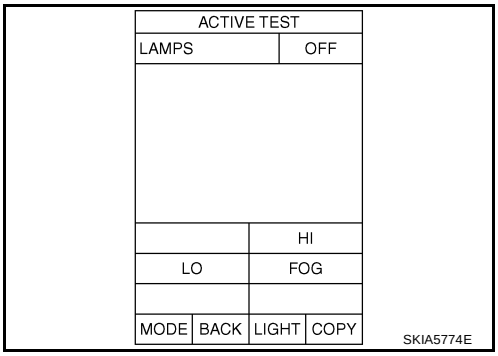
NG >> Check lighting switch. Refer to LT-170, "Combination Switch Inspection" .

2. HEADLAMP ACTIVE TEST

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

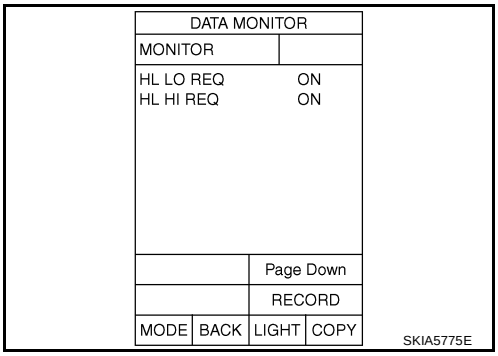
OK >> GO TO 3.

NG >> GO TO 4.

3. CHECK IPDM E/R

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

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



OK or NG

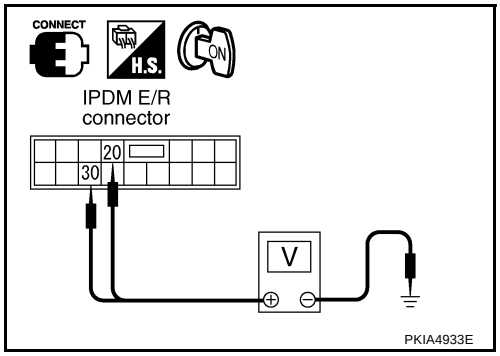
OK >> Replace IPDM E/R.

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

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.
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	Terminal (Wire color)		
E13	20 (R)	Ground	Battery voltage
	30 (R/B)		

Without CONSULT-II

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

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

OK or NG

OK >> Check headlamp bulbs.
NG >> GO TO 5.

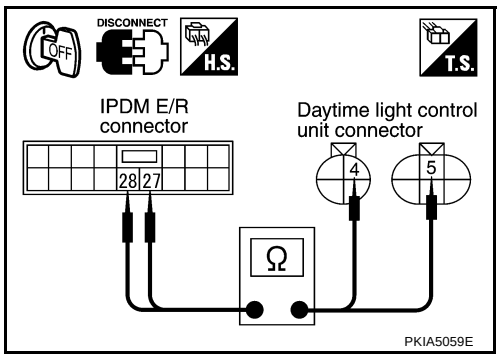
5. CHECK IPDM E/R CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check harness continuity 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.

RH High Beam Does Not Illuminate But RH Low Beam Illuminates

AKS00ABW

1. CHECK BULB

Inspect bulb of lamp.

OK or NG

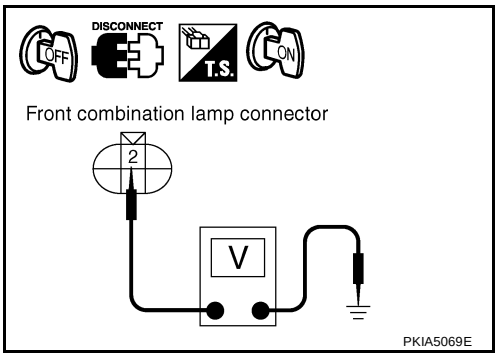
OK >> GO TO 2.
NG >> Replace headlamp bulb.

2. CHECK HEADLAMP INPUT SIGNAL

With CONSULT-II

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

2 (L) – 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 front combination lamp RH harness connector E25 terminal 2 (L) and ground.

2 (L) – Ground : Battery voltage should exist.

OK or NG

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

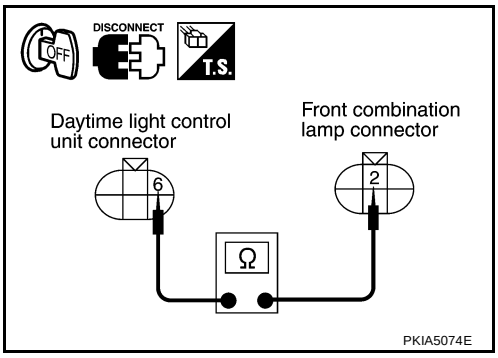
3. CHECK DAYTIME LIGHT CONTROL UNIT CIRCUIT

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 E25 terminal 2 (L).

6 (L) – 2 (L) : Continuity should exist.

OK or NG

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

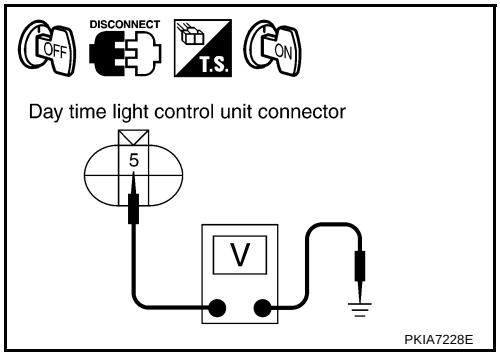


4. CHECK DAYTIME LIGHT CONTROL UNIT INPUT SIGNAL

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.
4. 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.

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

OK or NG

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

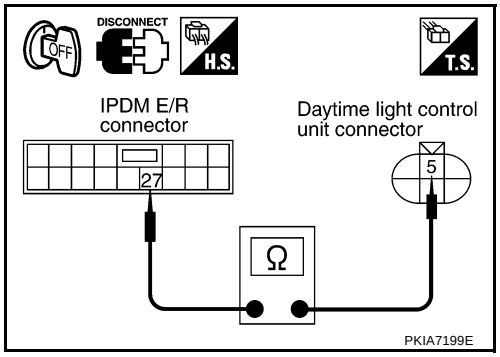
5. CHECK IPDM E/R CIRCUIT

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



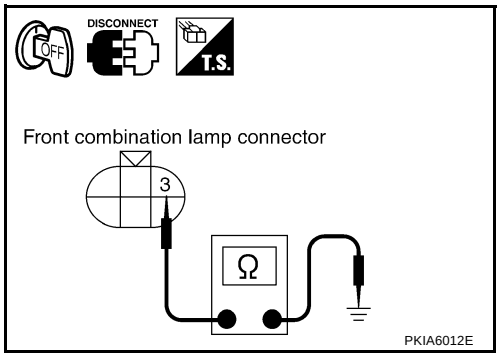
6. CHECK HEADLAMP GROUND

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.



LH High Beam Does Not Illuminate But LH Low Beam Illuminates

AKS00ABX

1. CHECK BULB

Inspect bulb of lamp.

OK or NG

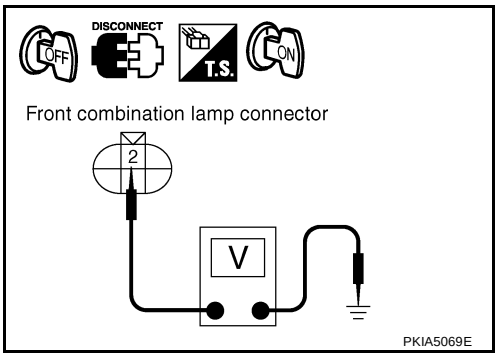
OK >> GO TO 2.
NG >> Replace bulb of lamp.

2. CHECK HEADLAMP INPUT SIGNAL

With CONSULT-II

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

2 (SB) – 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 LH harness connector E41 terminal 2 (SB) and ground.

2 (SB) – Ground : Battery voltage should exist.

OK or NG

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

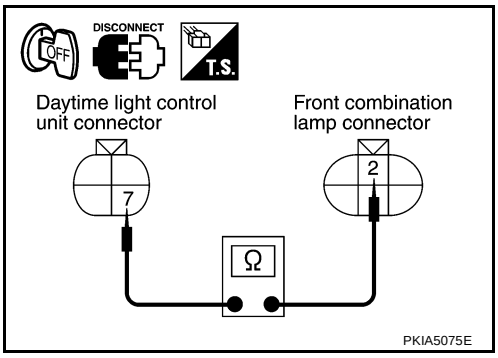
3. CHECK DAYTIME LIGHT CONTROL UNIT CIRCUIT

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

7 (SB) – 2 (SB) : Continuity should exist.

OK or NG

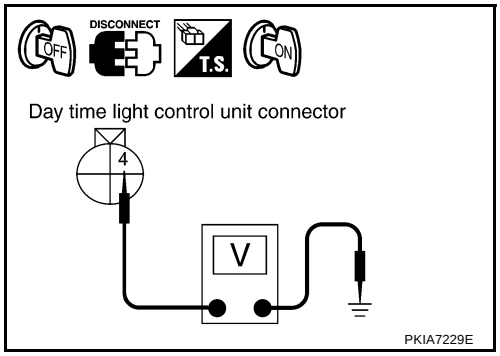
OK >> GO TO 4.
NG >> Repair harness or connector.



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.
4. When headlamp HI is operating, check voltage between daytime light control unit harness connector E13 terminal 4 (R/Y) and ground (Headlamp high beam repeats ON–OFF every 1 second).



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

Without CONSULT-II

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

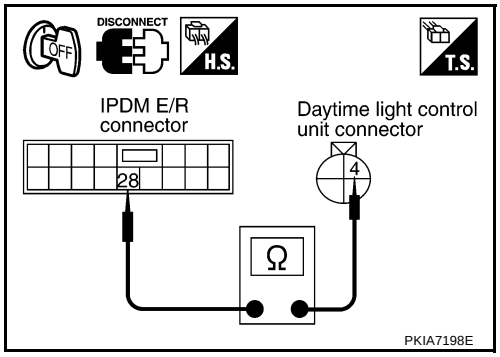
4 (R/Y) – Ground : Battery voltage should exist.

OK or NG

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

5. CHECK IPDM E/R CIRCUIT

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



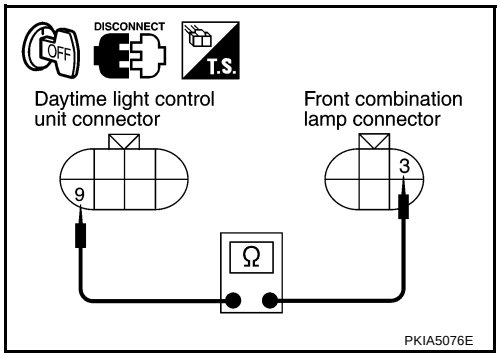
28 (R/Y) – 4 (R/Y) : Continuity should exist.

OK or NG

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

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.

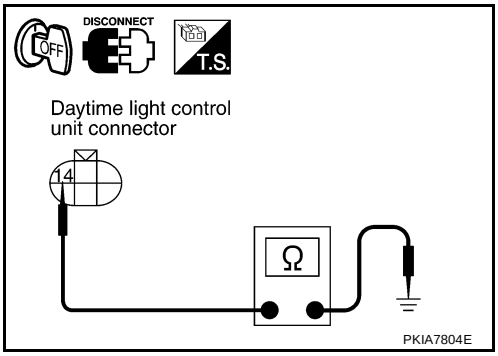
OK or NG

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.

Headlamp Low Beam Does Not Illuminate (Both Sides)

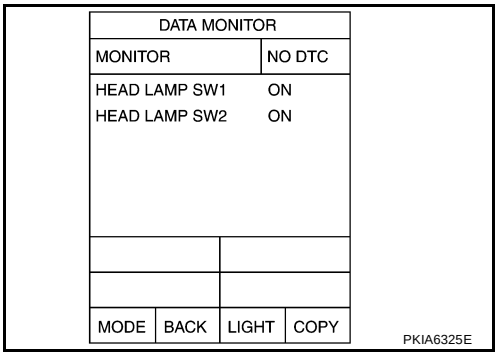
AKS00ATB

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 position : HEAD LAMP SW 1 ON
: HEAD LAMP SW 2 ON



Without CONSULT-II

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

OK or NG

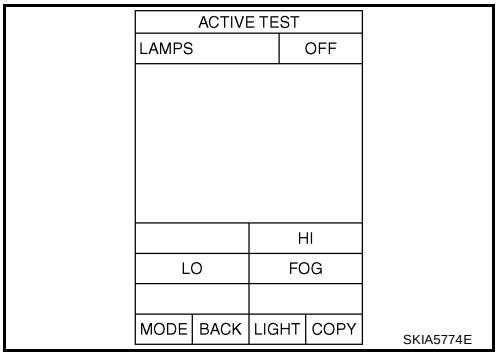
OK >> GO TO 2.
NG >> Check lighting switch. Refer to LT-170, "Combination Switch Inspection" .

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 “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.

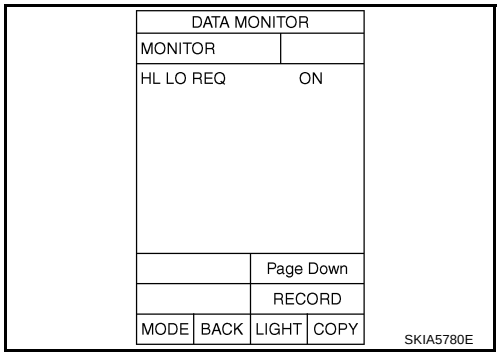
OK or NG

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

3. CHECK IPDM E/R

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

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



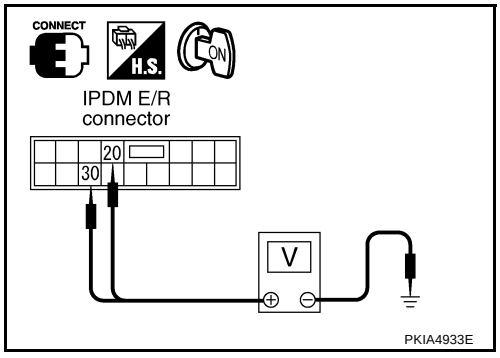
OK or NG

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

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.

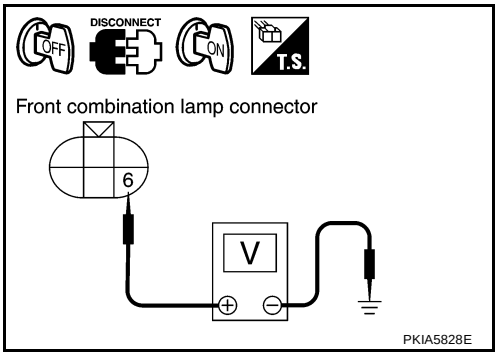
OK or NG

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

2. CHECK HEADLAMP INPUT SIGNAL

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

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



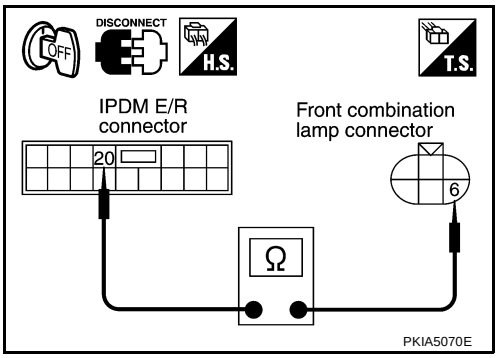
OK or NG

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

3. CHECK HEADLAMP RH CIRCUIT

1. Disconnect IPDM E/R connector and front combination lamp RH connector.
2. Check harness 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.



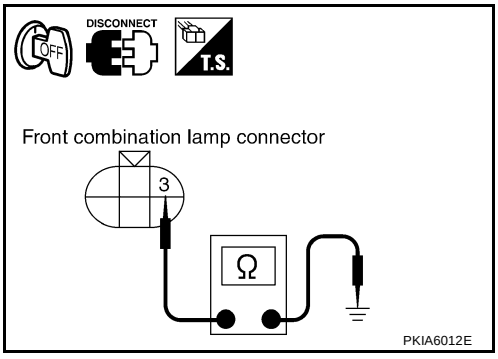
OK or NG

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

4. CHECK HEADLAMP GROUND

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

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



OK or NG

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

LH Low Beam Does Not Illuminate But LH High Beam Illuminates

AKS009T0

1. CHECK BULB

Check bulb of lamp.

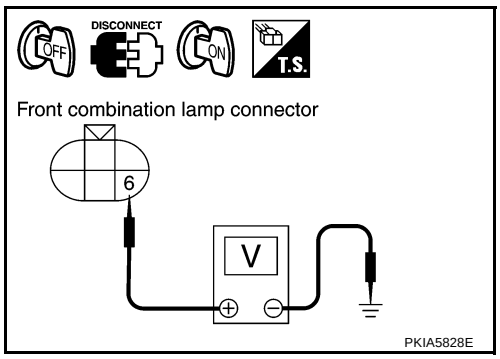
OK or NG

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

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



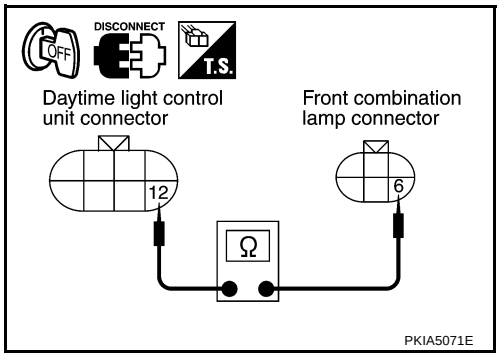
OK or NG

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

3. CHECK DAYTIME LIGHT CONTROL UNIT CIRCUIT

1. Disconnect daytime light control unit connector and front combination 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

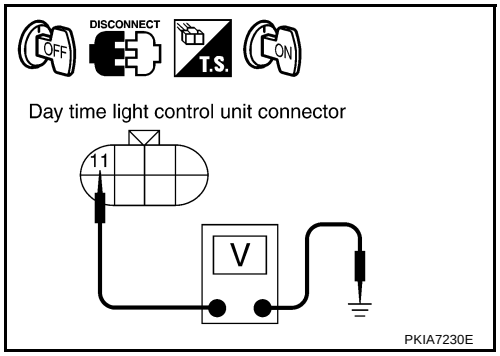
OK >> GO TO 4.
NG >> Repair harness or connector.

4. CHECK DAYTIME LIGHT CONTROL UNIT INPUT SIGNAL

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

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

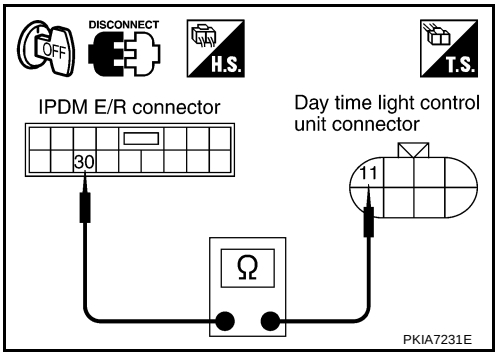
OK or NG

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

5. CHECK IPDM E/R CIRCUIT

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

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



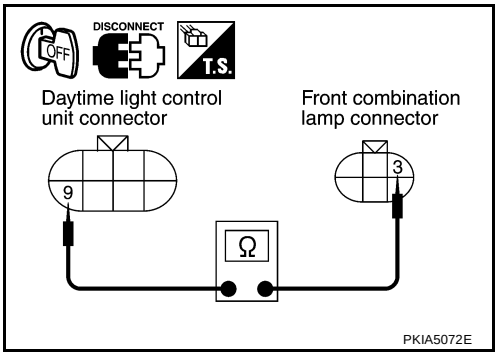
OK or NG

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

6. CHECK DAYTIME LIGHT CONTROL UNIT CIRCUIT

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.



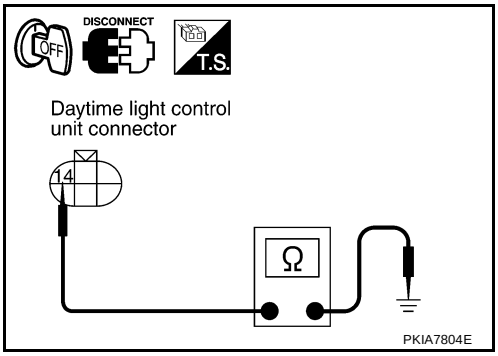
OK or NG

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.

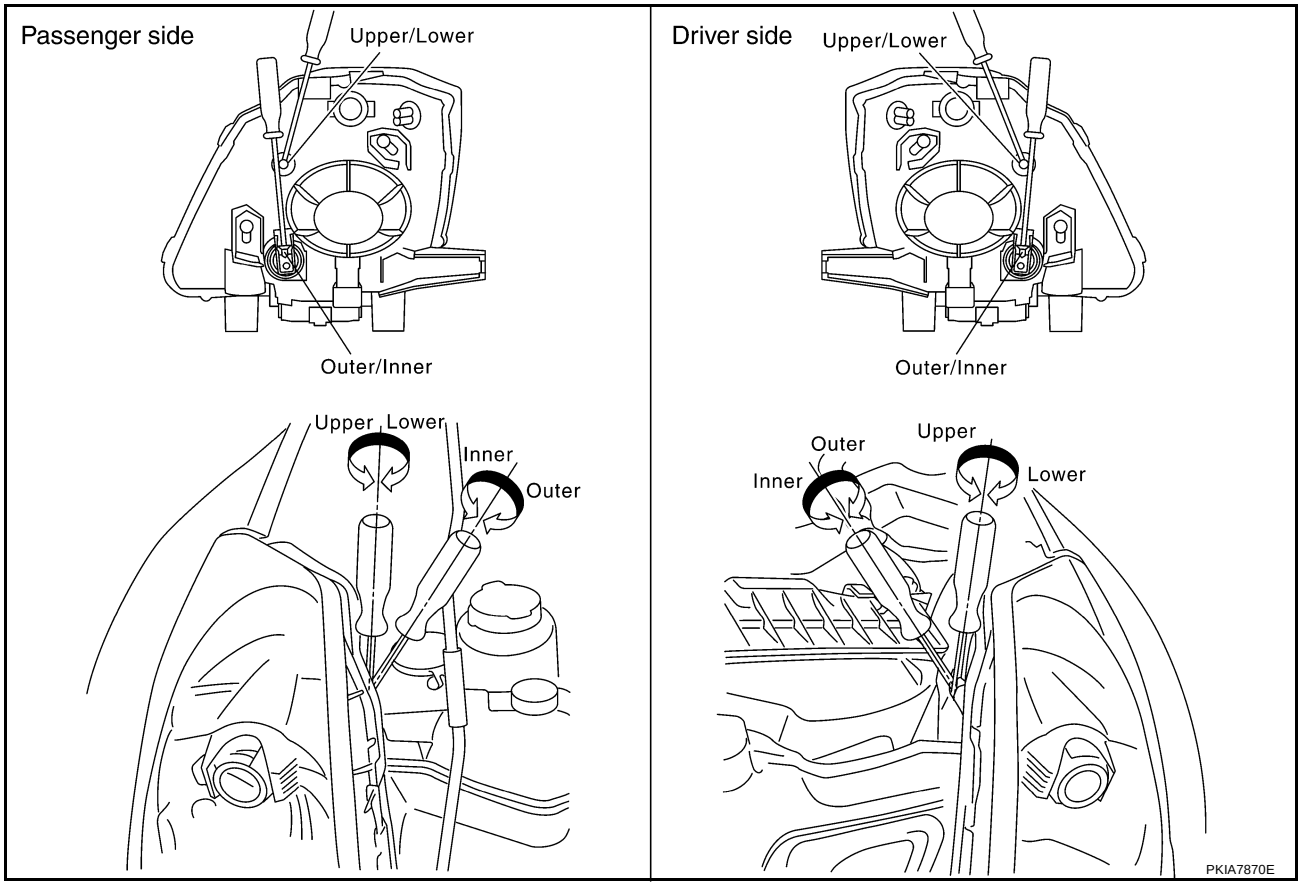


OK or NG

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

Aiming Adjustment

AKS009T1



PREPARATION BEFORE ADJUSTING

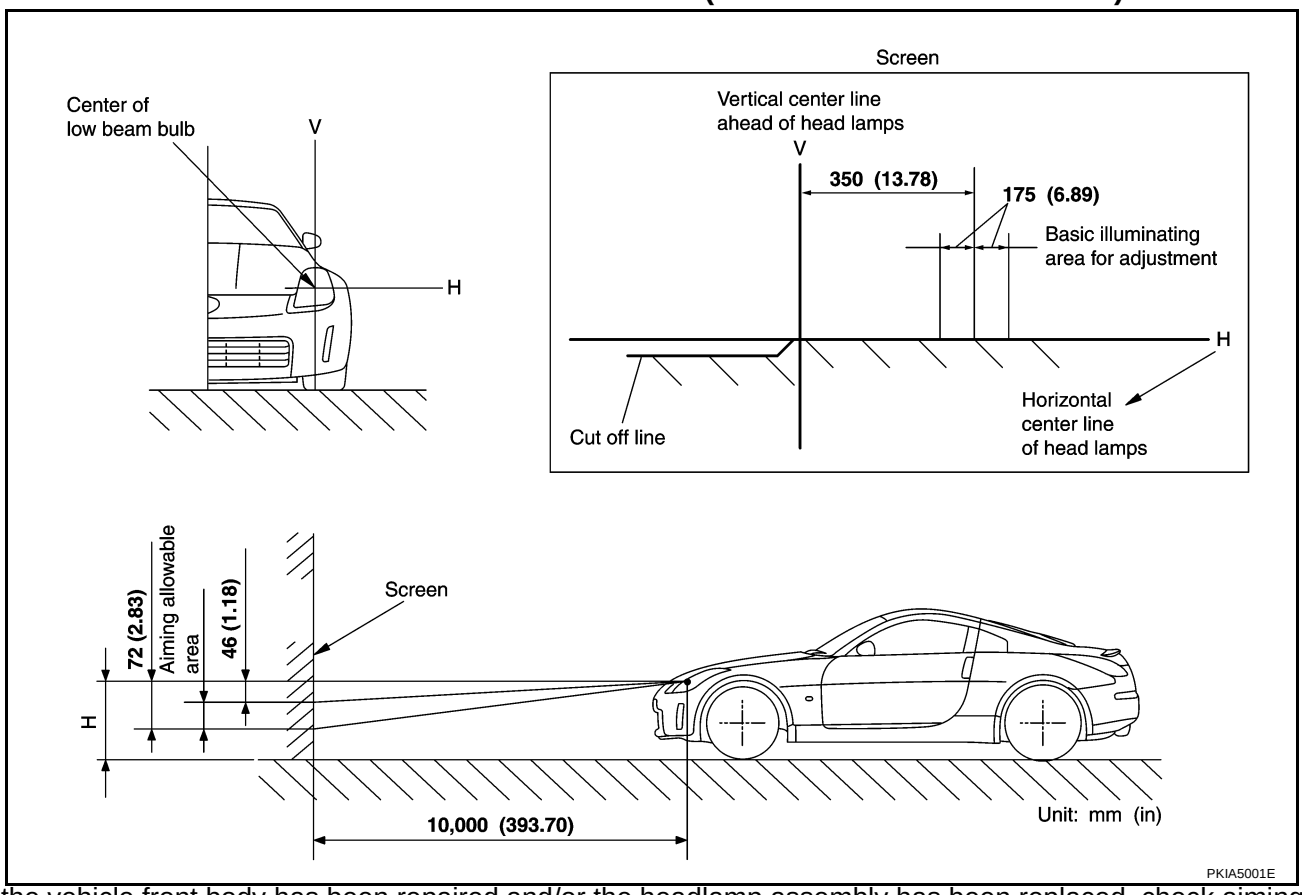
For details, refer to the regulations in your own country.
Before performing aiming adjustment, check the following.

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

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

ADJUSTMENT USING AN ADJUSTMENT SCREEN (LIGHT/DARK BORDERLINE)



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

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

Bulb Replacement

AKS009T2

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 (Halogen) : 12V - 55W (H7)

HEADLAMP (LOWER) HIGH BEAM

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

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

PARKING LAMPS (CLEARANCE LAMPS)

1. Turn lighting switch OFF.

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

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

FRONT TURN SIGNAL LAMP

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

Front turn signal lamp : 12V - 21W

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

FRONT SIDE MARKER LAMP

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

Front side marker lamp : 12V - 5W

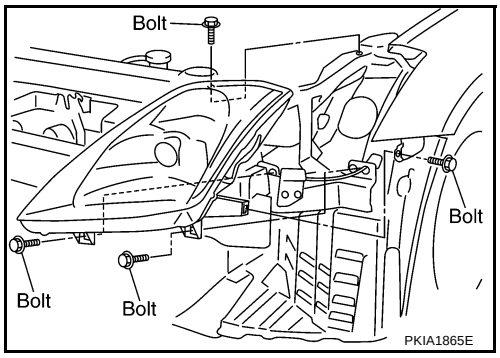
CAUTION:
After installing bulb, be sure to install plastic cap and socket securely to insure watertightness.

Removal and Installation

AKS009T3

REMOVAL

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



INSTALLATION

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

Headlamp mounting bolt:

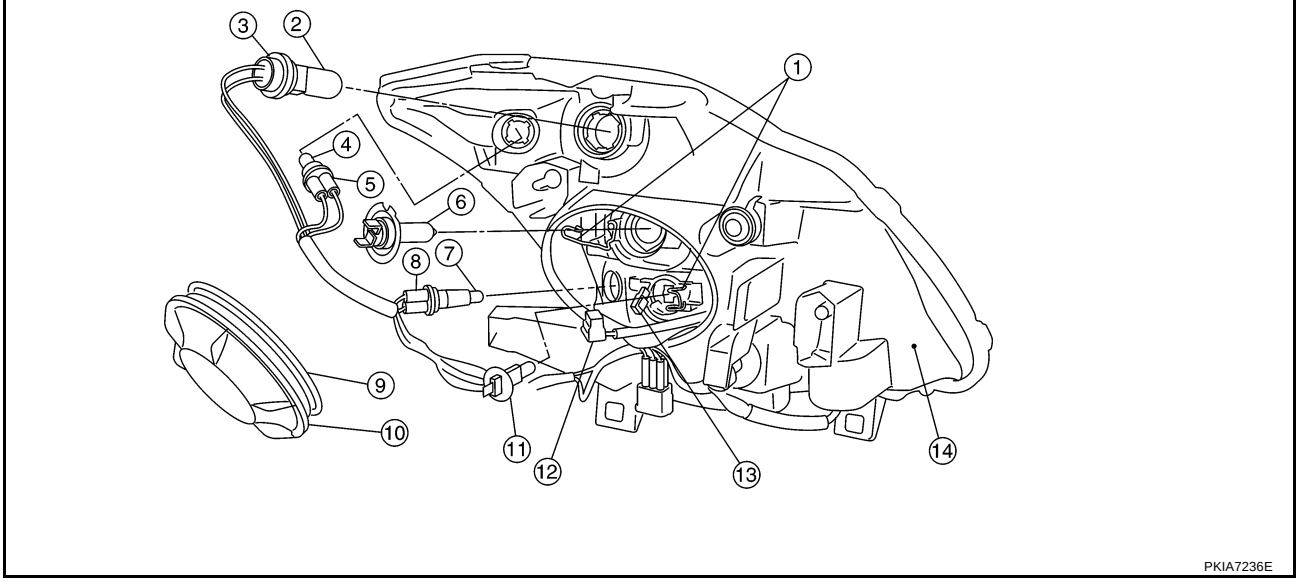
: 6.1 N·m (0.62 kg-m, 54 in-lb)

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

Disassembly and Assembly

AKS009T4

HALOGEN TYPE



1. Retaining spring	2. Front turn signal lamp bulb	3. Front turn signal lamp bulb socket
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
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).
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:

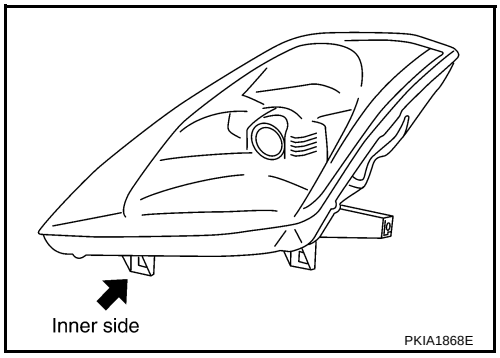
CAUTION:

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

Servicing to Replace Headlamps When Damaged

AKS009T6

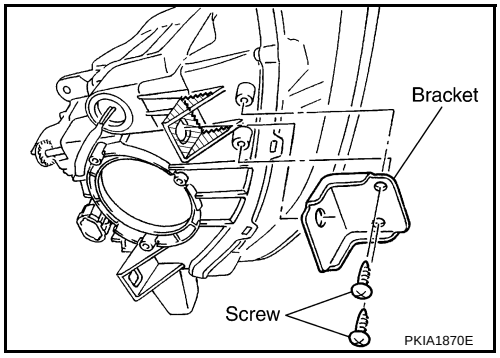
If only installation part as shown in the figure is damaged, and headlamp housing itself is not damaged, repair can be completed easily by installing correction brackets.



INSTALLATION OF HEADLAMP BRACKET

1. Remove headlamps. Refer to LT-140, "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**

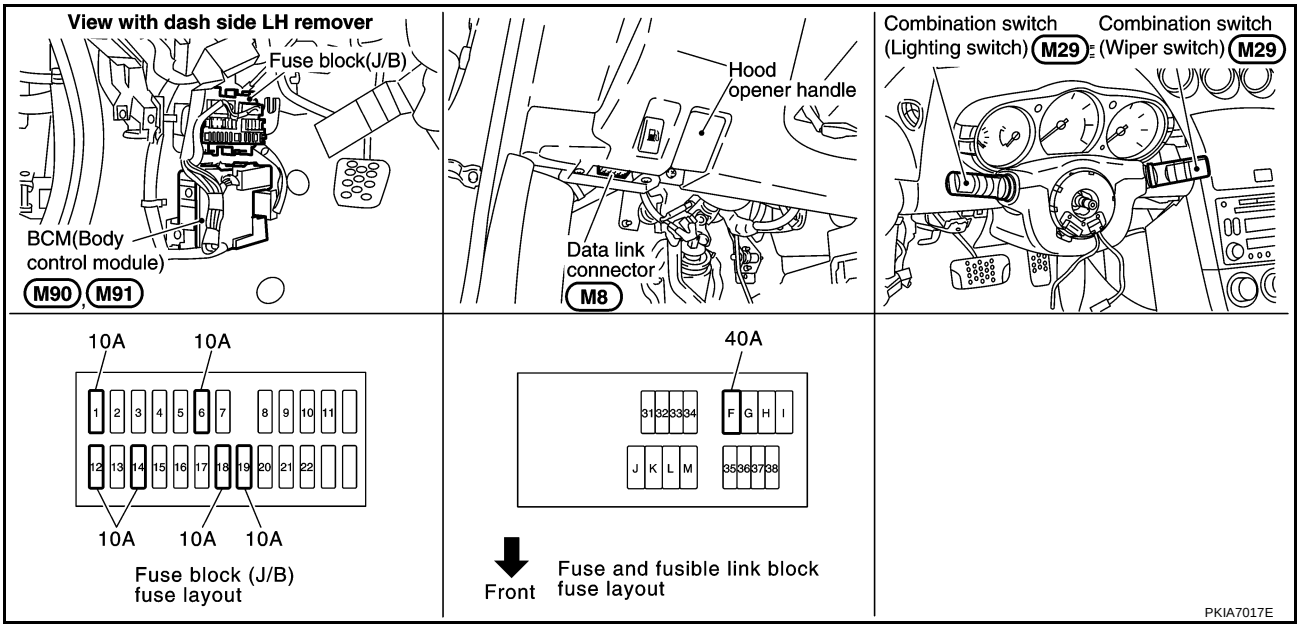


TURN SIGNAL AND HAZARD WARNING LAMPS

PFP:26120

Component Parts and Harness Connector Location

AKS009RI



System Description

AKS009QS

TURN SIGNAL OPERATION

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

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

Ground is supplied

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

LH Turn

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

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

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

Ground is supplied to front combination lamp LH terminal 4 through grounds E17, E43 and F152*2 .
Ground is supplied to rear combination lamp LH terminal 4 through grounds T14, B5, B6 and D105.
BCM also supplies ground to unified meter and A/C amp. terminals 1and 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 BCS-3, "COMBINATION SWITCH READING FUNCTION"). 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
- to front combination lamp RH terminal 1 through grounds E17, E43 and F152*1
- to front combination lamp RH terminal 4 through grounds E17, E43 and F152*2
- to rear combination lamp LH terminal 4 through grounds T14, B5, B6 and D105.
- to rear combination lamp RH terminal 4 through grounds T14, B5, B6 and D105.

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

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

REMOTE KEYLESS ENTRY SYSTEM OPERATION

Power is supplied at all times

- through 40A fusible link [letter F, located in fuse and fusible link block]
- to BCM (body control module) terminal 55
- through 10A fuse [No. 18, located in fuse block (J/B)]
- to BCM (body control module) terminal 42
- through 10A fuse [No. 19, located in fuse block (J/B)]
- to combination meter terminal 24, and
- to unified meter and A/C amp. terminal 21.

Ground is supplied

- to BCM terminal 8
- through grounds E17, E43 and F152
- to unified meter and A/C amp. terminals 29 and 30
- through grounds M30 and M66
- to combination meter terminals 10, 11 and 12
- through grounds M30 and M66.

When remote keyless entry system is triggered by input signal from key fob, BCM supplies power

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

Ground is supplied

- to front combination lamp LH terminal 1 through grounds E17, E43 and F152*1
- to front combination lamp LH terminal 4 through grounds E17, E43 and F152*2
- to front combination lamp RH terminal 1 through grounds E17, E43 and F152*1
- to front combination lamp RH terminal 4 through grounds E17, E43 and F152*2
- to rear combination lamp LH terminal 4 through grounds T14, B5, B6 and D105
- to rear combination lamp RH terminal 4 through grounds T14, B5, B6 and D105.

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

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

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

COMBINATION SWITCH READING FUNCTION

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

CAN Communication System Description

AKS009QT

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

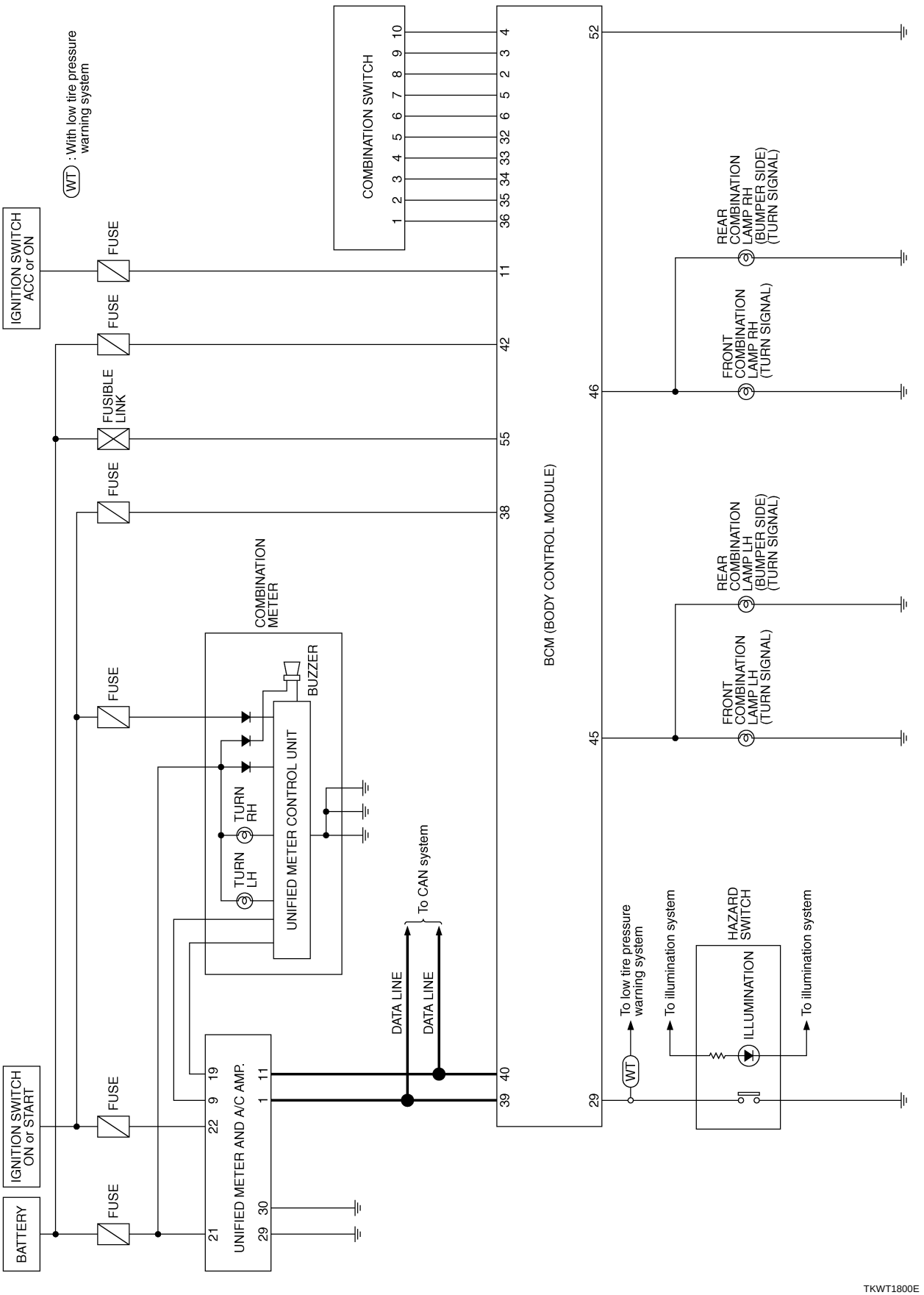
CAN Communication Unit

AKS009QU

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

Schematic

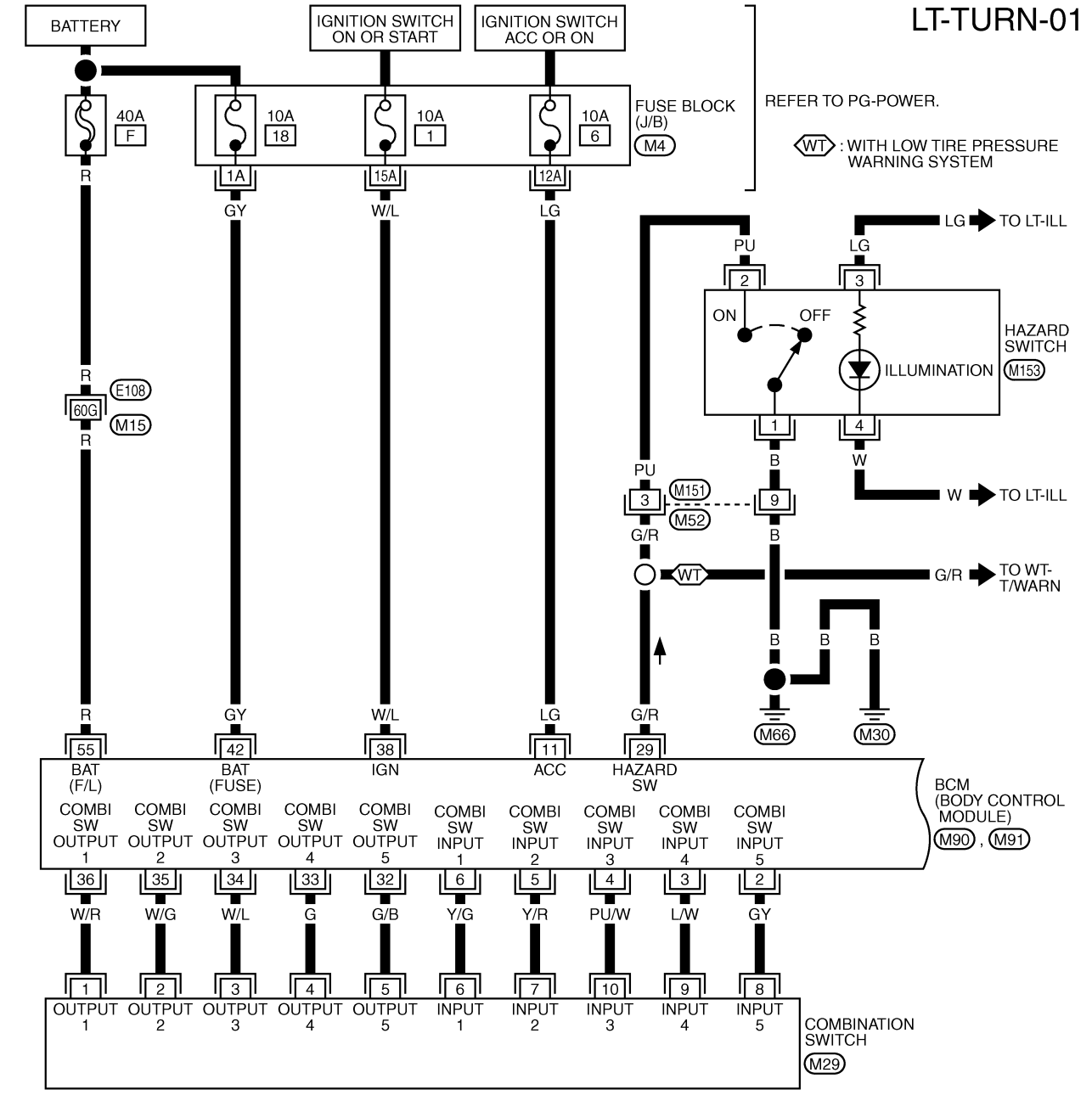
AKS009QV



Wiring Diagram — TURN —

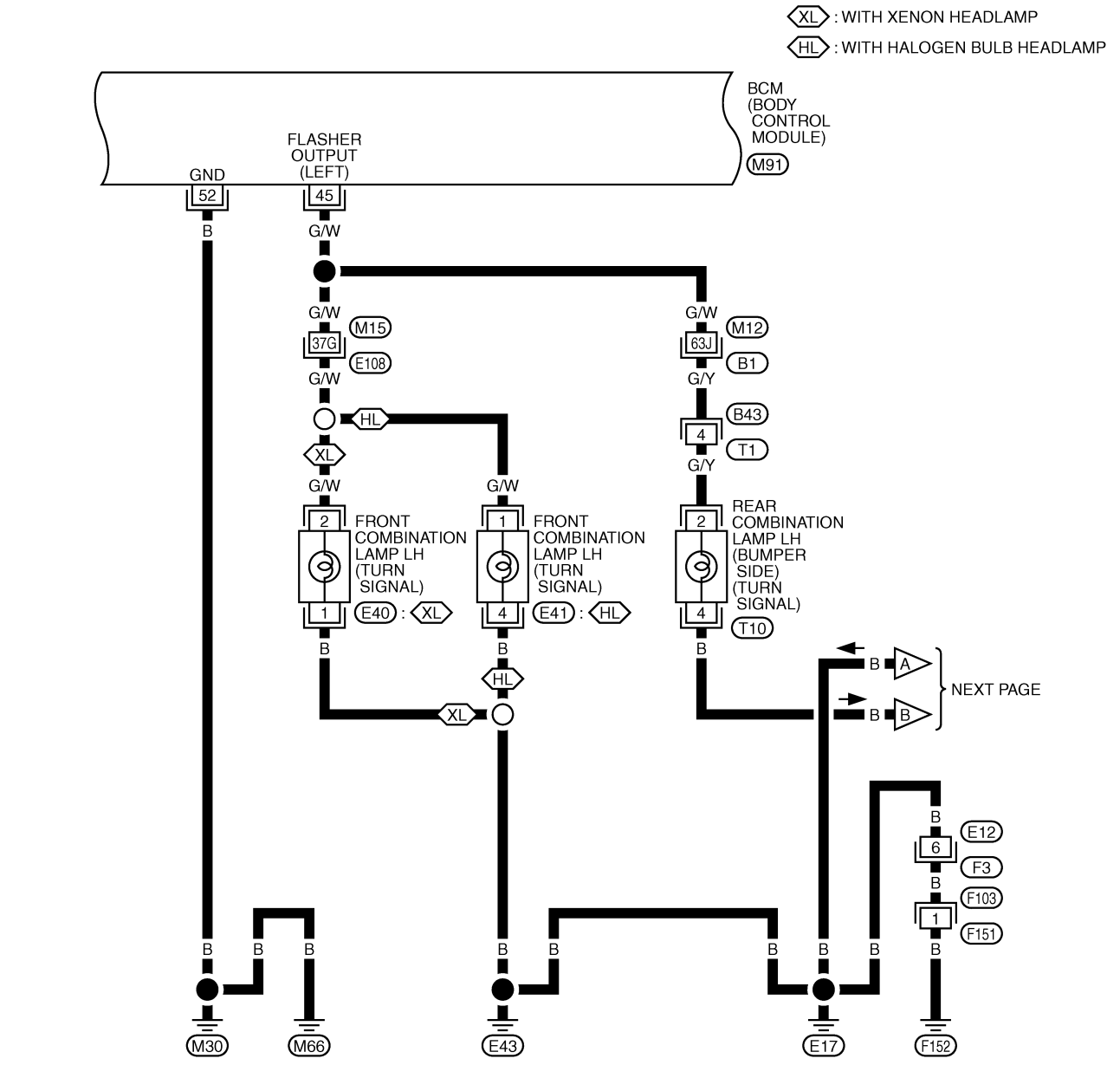
AKS009QW

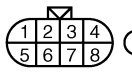
COUPE MODELS

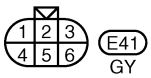


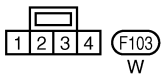
TKWT1801E

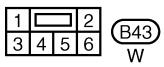
LT-TURN-02







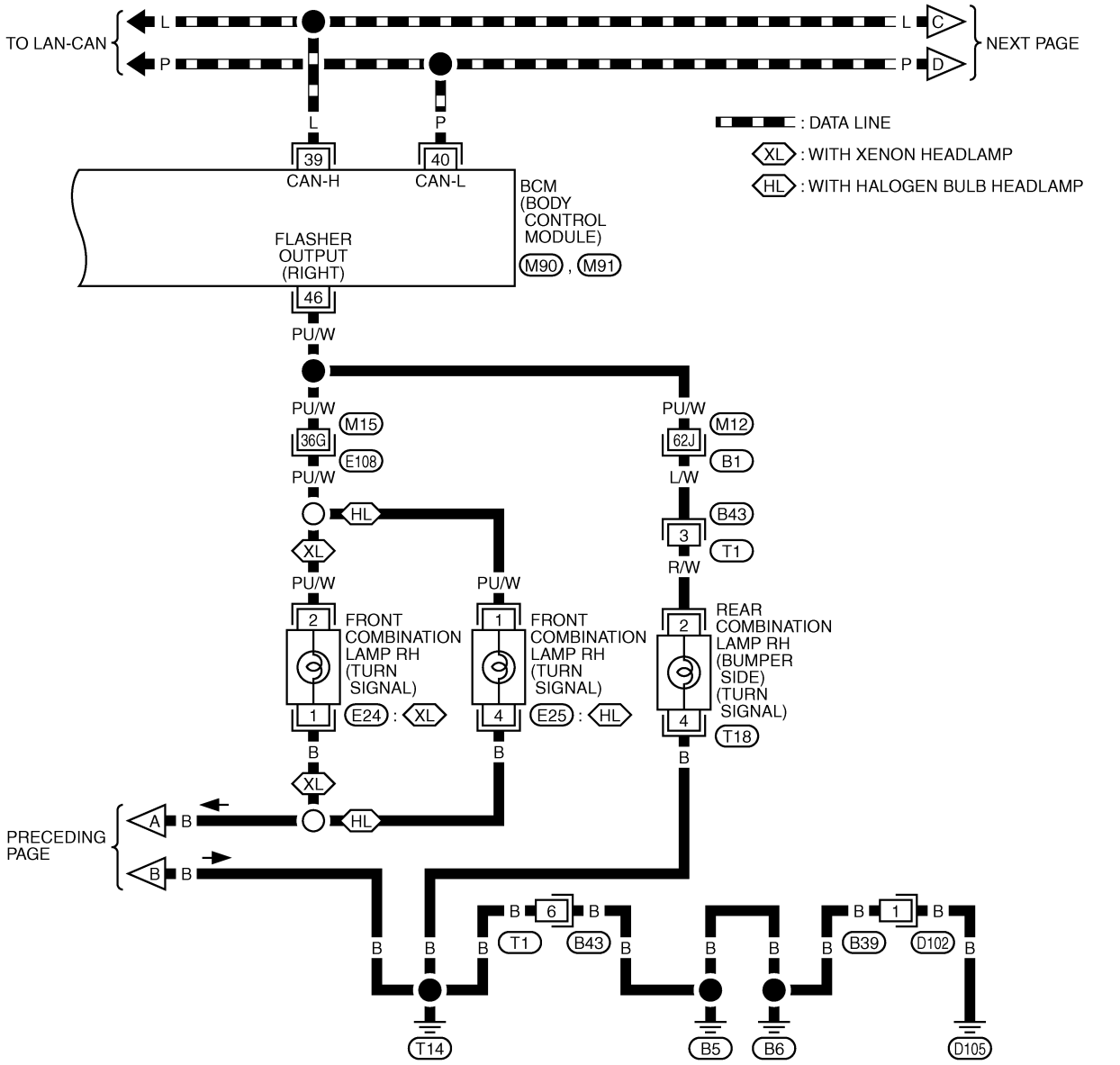


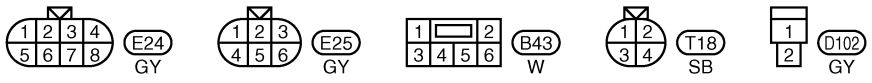


REFER TO THE FOLLOWING.
E108 , B1 -SUPER MULTIPLE JUNCTION (SMJ)
M91 -ELECTRICAL UNITS

TKWT1802E

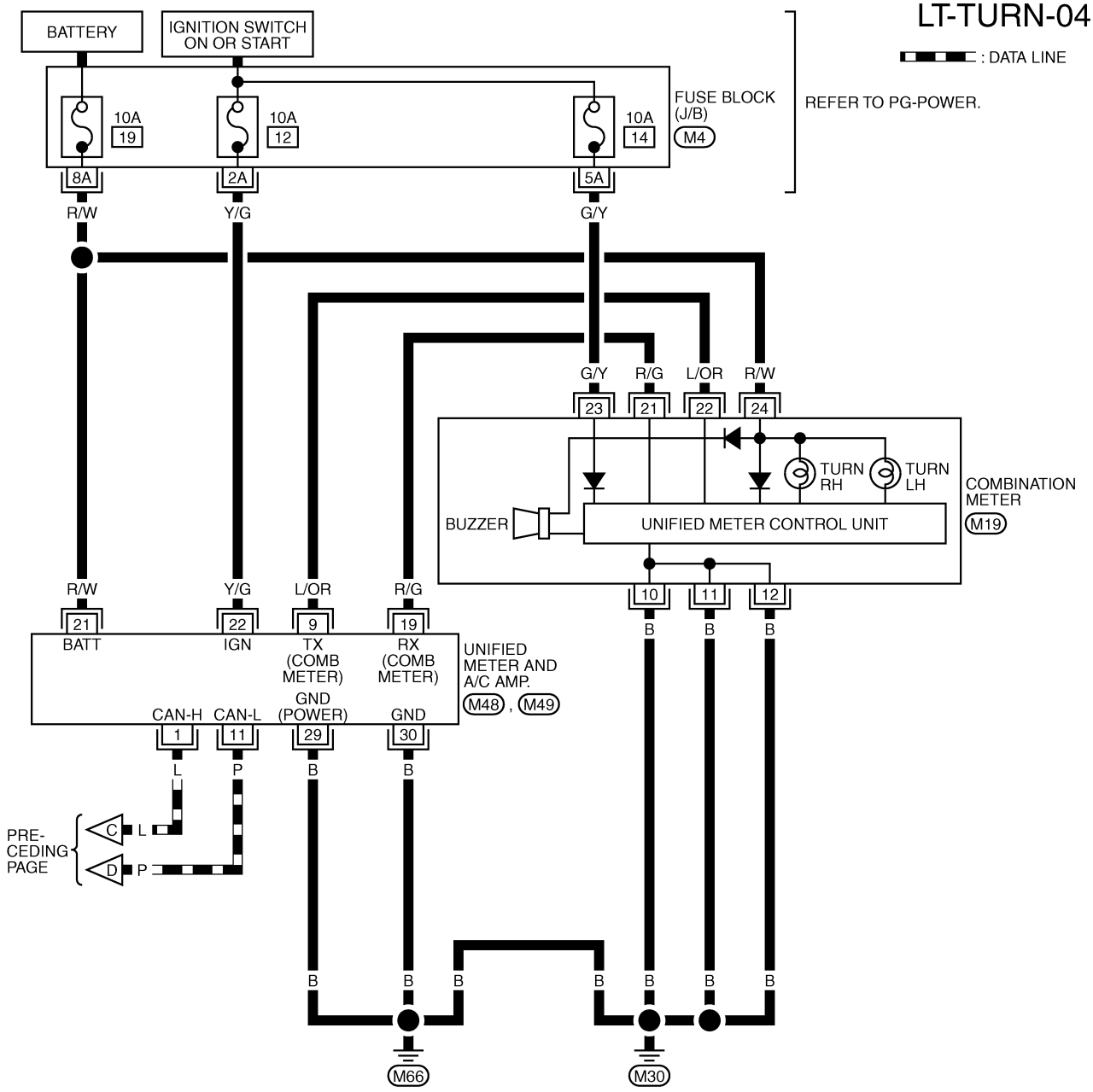
LT-TURN-03

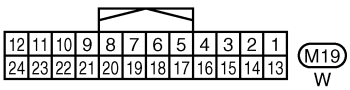


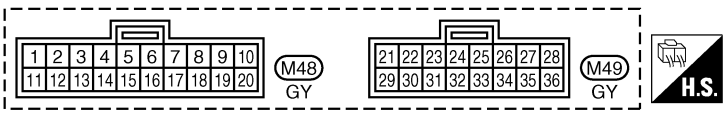


REFER TO THE FOLLOWING.
E108 , B1 -SUPER MULTIPLE JUNCTION (SMJ)
M90 , M91 -ELECTRICAL UNITS

TKWT1803E



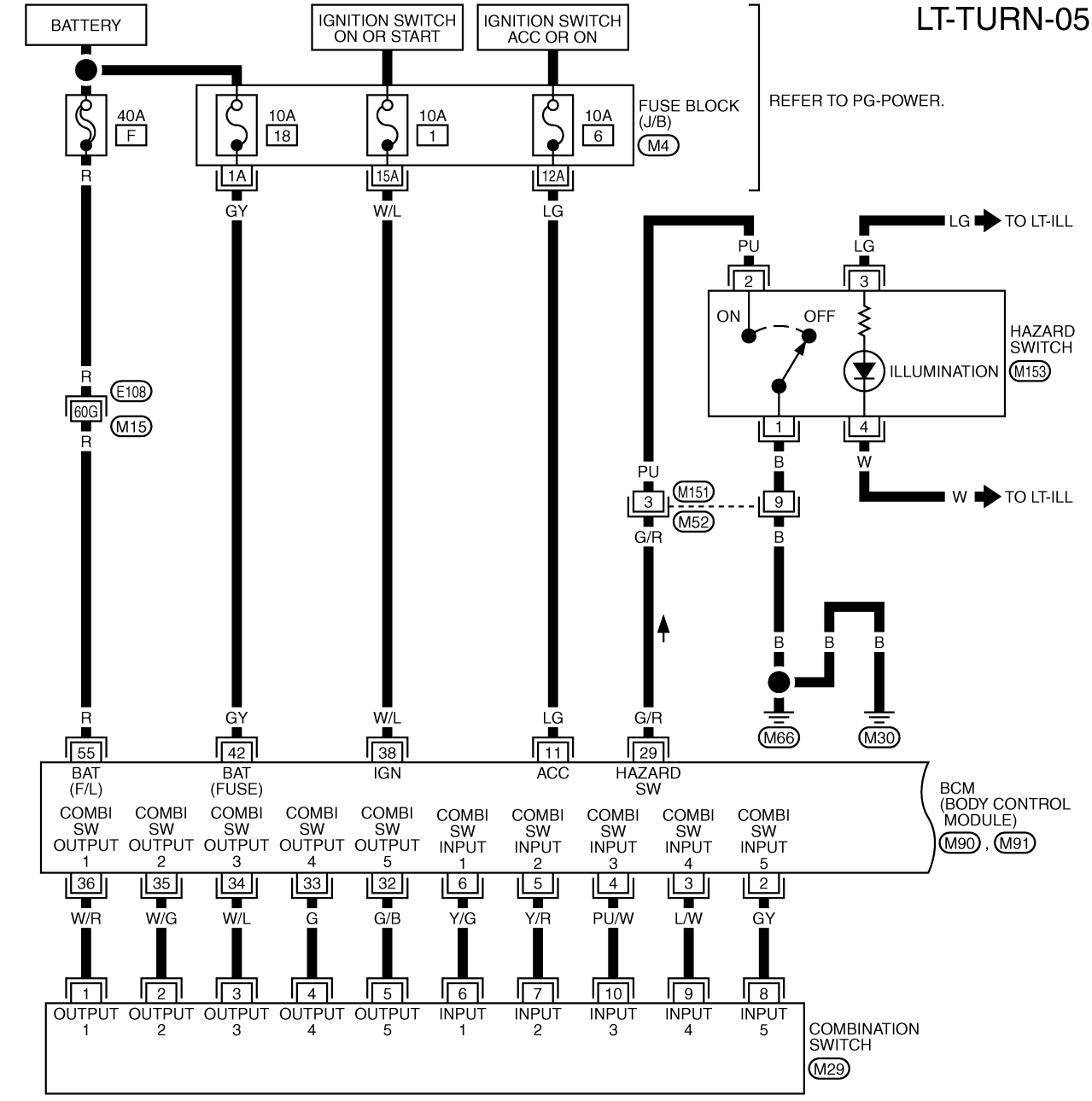




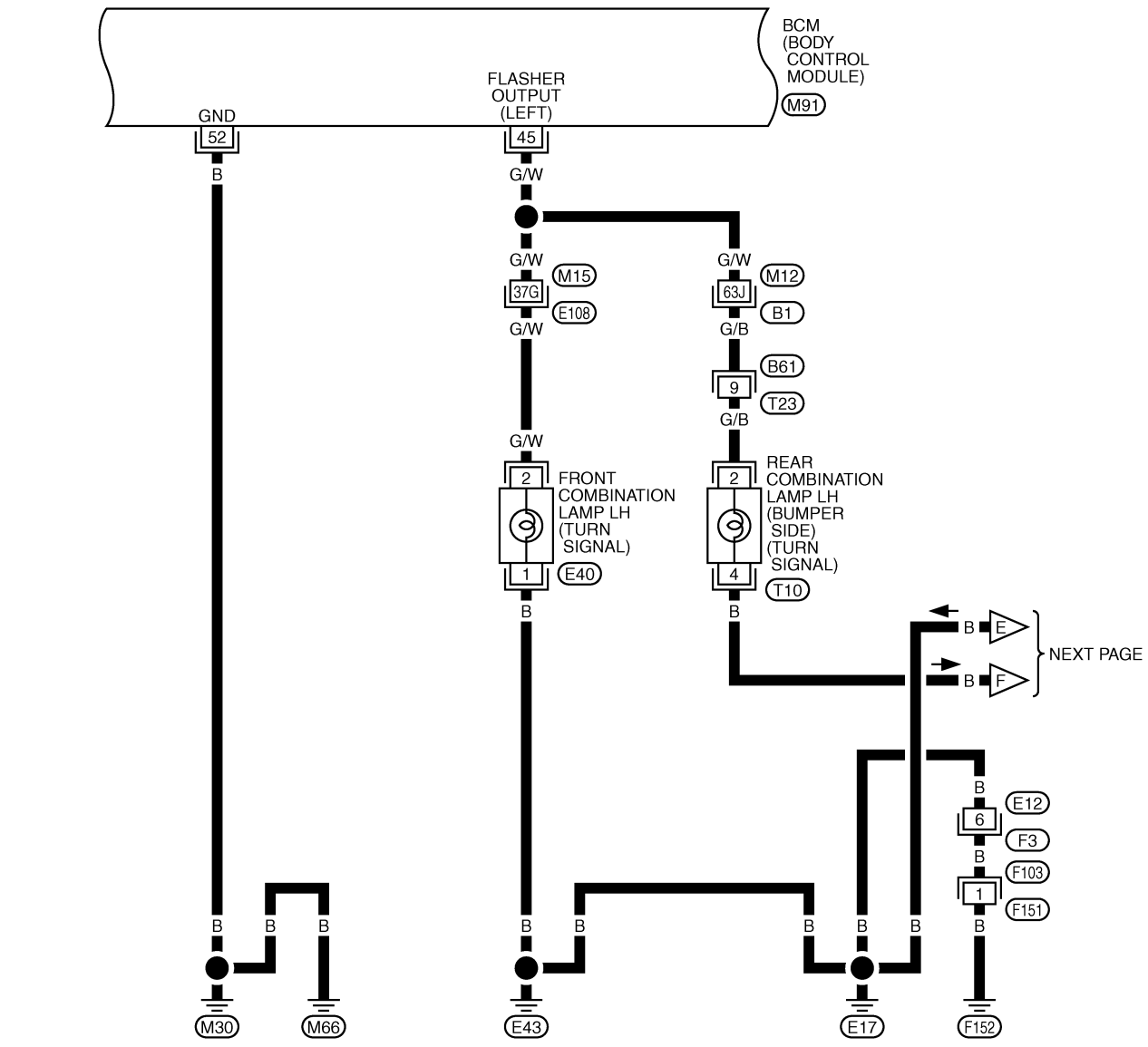
REFER TO THE FOLLOWING.
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

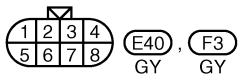
TKWT1732E

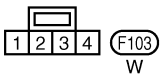
ROADSTER MODELS

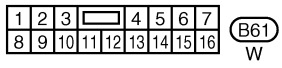


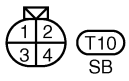
LT-TURN-06







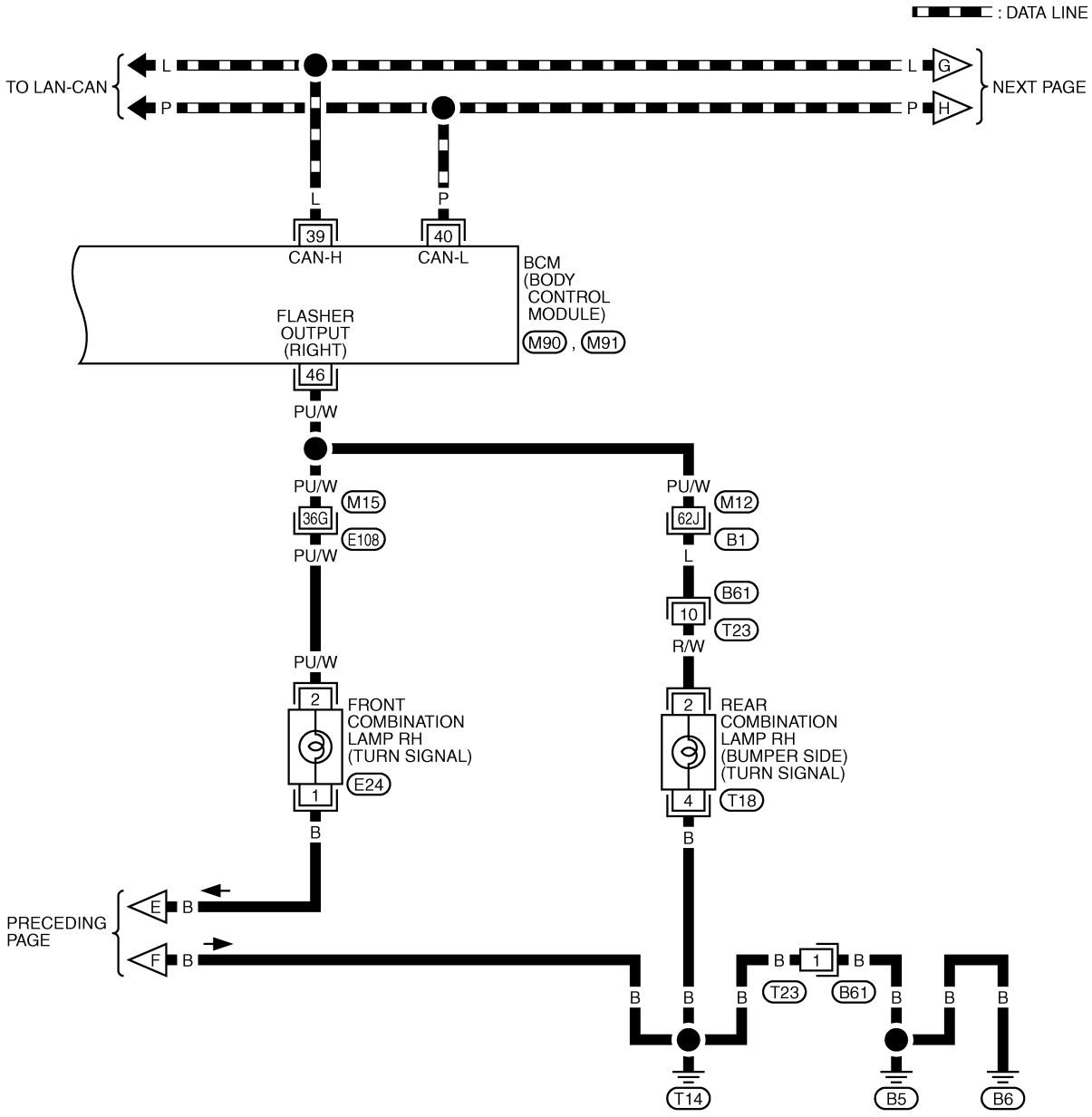


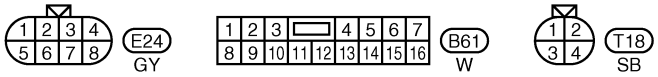


REFER TO THE FOLLOWING.
E108 , B1 -SUPER MULTIPLE JUNCTION (SMJ)
M91 -ELECTRICAL UNITS

TKWT1806E

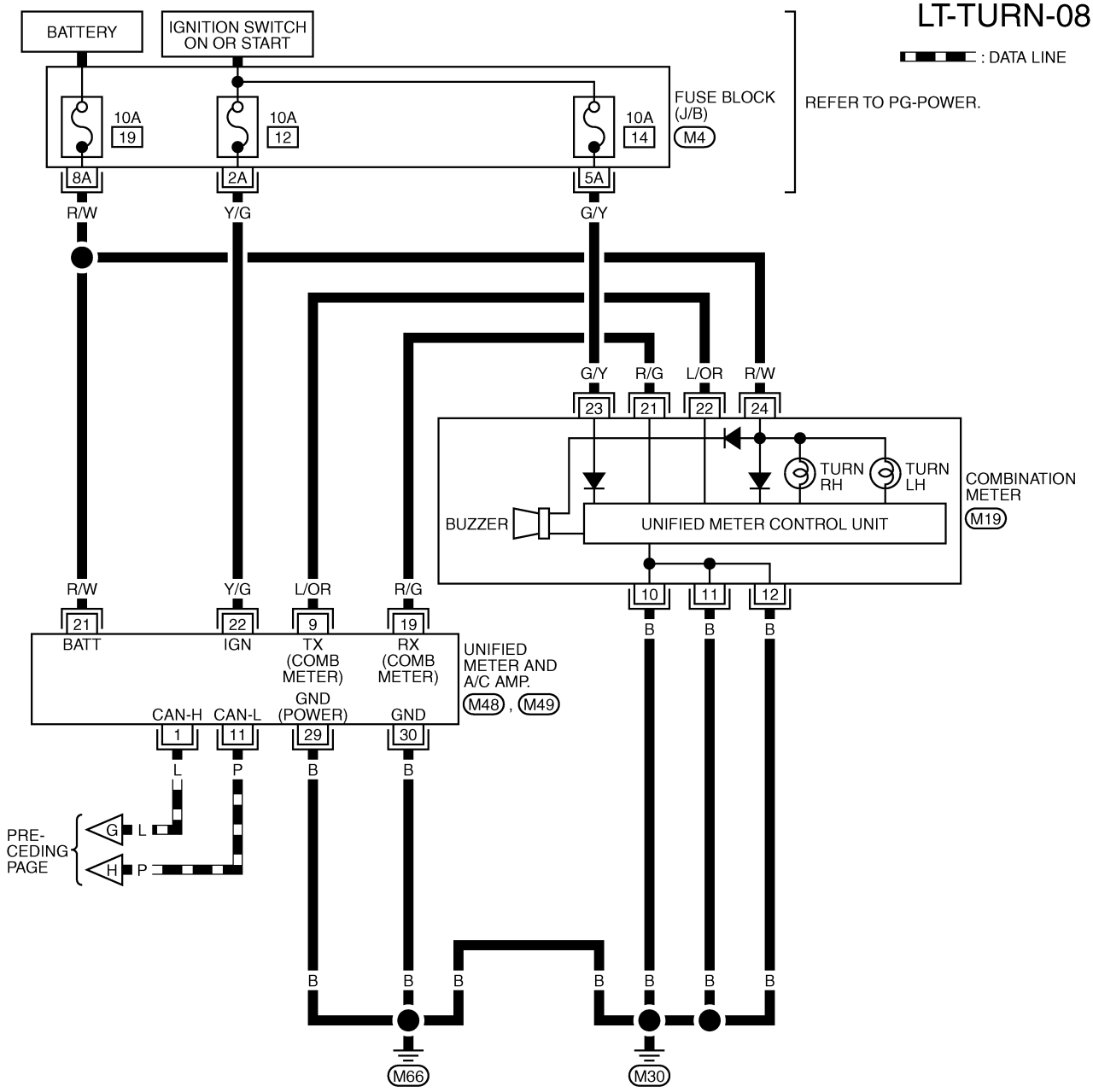
LT-TURN-07

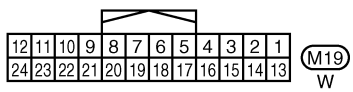


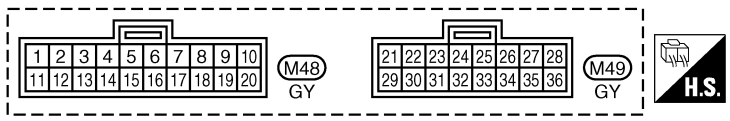


REFER TO THE FOLLOWING.
E108 , B1 -SUPER MULTIPLE JUNCTION (SMJ)
M90 , M91 -ELECTRICAL UNITS

TKWT1807E





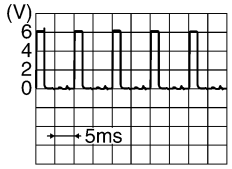
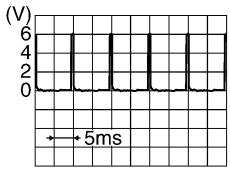
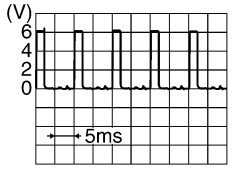
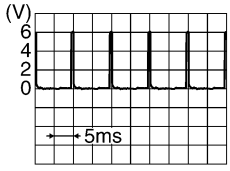
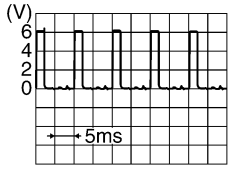
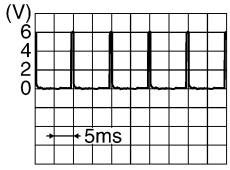


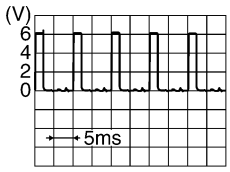
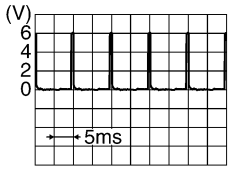
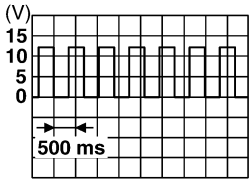
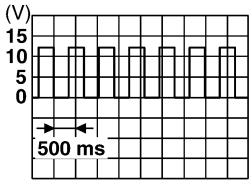
REFER TO THE FOLLOWING.
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT1600E

Terminals and Reference Values for BCM

AKS009QX

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

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

How to Proceed With Trouble Diagnosis

AKS009QY

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-143, "System Description" .
3. Perform preliminary check. Refer to LT-158, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Do turn signal and hazard warning lamps operate normally? If Yes: Go to 6. If No: Go to 4.
6. INSPECTION END

Preliminary Check

AKS009QZ

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown BCM fuses.

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

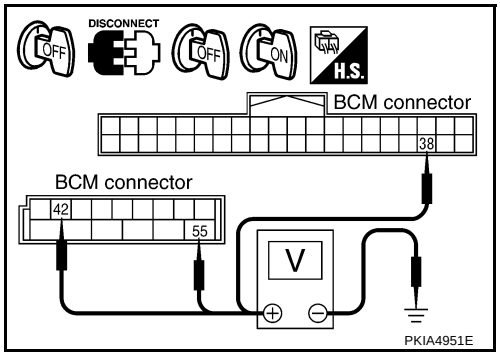
Refer to LT-148, "Wiring Diagram — TURN —" .

OK or NG

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

2. CHECK POWER SUPPLY CIRCUIT

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



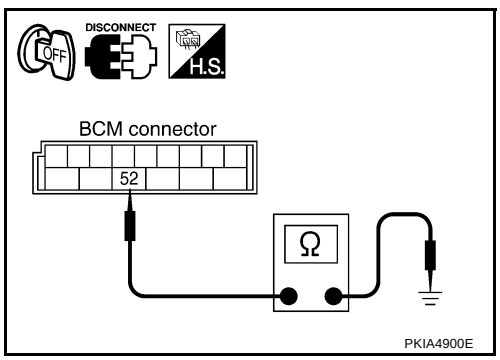
Terminals			Ignition switch position	
(+)		(-)	OFF	ON
Connector	Terminal (Wire color)			
M90	38 (W/L)	Ground	0V	Battery voltage
M91	42 (GY)		Battery voltage	Battery voltage
	55 (R)		Battery voltage	Battery voltage

OK or NG

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector terminal and ground.



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

OK or NG

OK >> INSPECTION END
NG >> Check ground circuit harness.

CONSULT-II Functions

AKS009R0

CONSULT-II performs the following functions communicating with BCM.

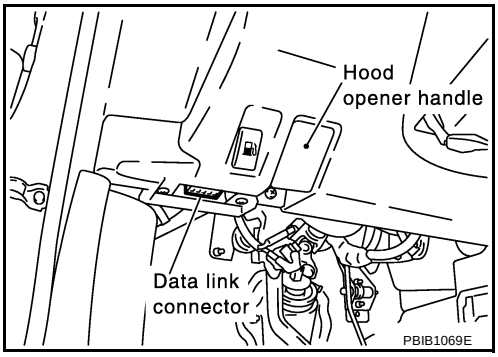
BCM diagnosis part	Check item, diagnosis mode	Description
FLASHER	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending driving signal to them.

CONSULT-II BASIC OPERATION

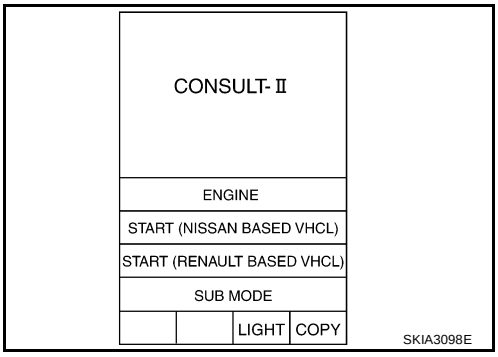
CAUTION:

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

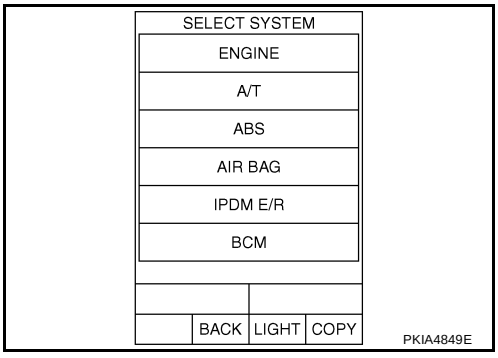
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



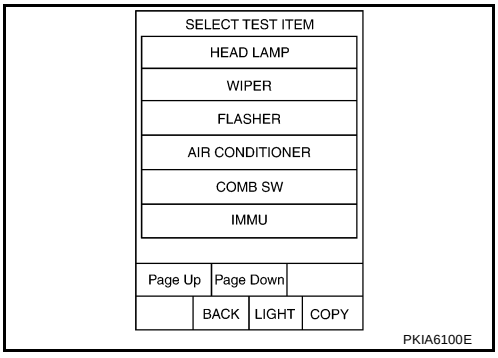
2. Touch “START(NISSAN BASED VHCL)”.



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



4. Touch “FLASHER” on “SELECT TEST ITEM” screen.



DATA MONITOR

Operation Procedure

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

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

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

Display Item List

Monitor item		Contents
IGN ON SW	“ON/OFF”	Displays “IGN position (ON)/OFF, ACC position (OFF)” judged from ignition switch signal.
HAZARD SW	“ON/OFF”	Displays “Hazard ON (ON)/Hazard OFF (OFF)” status, determined from hazard switch signal.
TURN SIGNAL R	“ON/OFF”	Displays “Turn right (ON)/Other (OFF)” status, determined from lighting switch signal.
TURN SIGNAL L	“ON/OFF”	Displays “Turn left (ON)/Other (OFF)” status, determined from lighting switch signal.
BRAKE SW[NOTE]	“OFF”	—

NOTE:
This item is displayed, but cannot monitor it.

ACTIVE TEST

Operation Procedure

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

Display Item List

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

Turn Signal Lamp Does Not Operate

AKS00AP2

1. CHECK BULB

Check bulb standard of each turn signal lamp is correct.

OK or NG

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

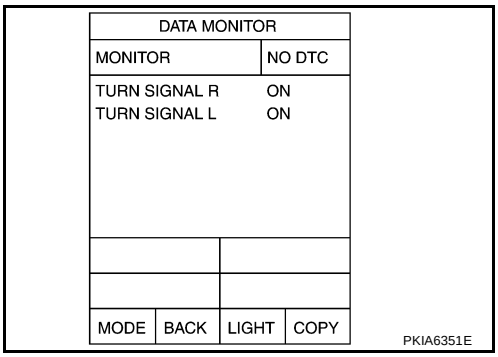
2. CHECK COMBINATION SWITCH INPUT SIGNAL

With CONSULT-II

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

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

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



Without CONSULT-II

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

OK or NG

OK >> GO TO 3.

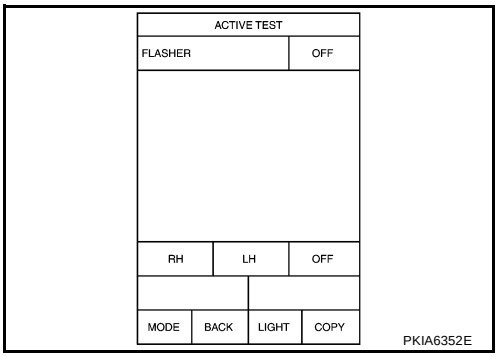
NG >> Check lighting switch. Refer to LT-170, "Combination Switch Inspection" .

3. ACTIVE TEST

With CONSULT-II

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

Turn signal lamp should operate.



Without CONSULT-II

GO TO 4.

OK or NG

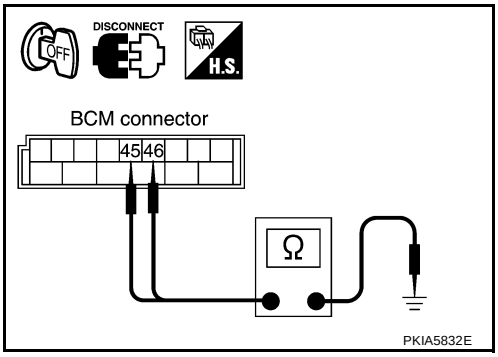
OK >> Replace BCM. Refer to BCS-17, "Removal and Installation of BCM" .

NG >> GO TO 4.

4. CHECK SHORT CIRCUIT

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

Terminals			Ground	Continuity
BCM				
Connector		Terminal (Wire color)		
RH	M91	46 (PU/W)		No
LH		45 (G/W)		



OK or NG

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

NG >> Repair harness or connector.

Hazard Warning Lamp Does Not Operate But Turn Signal Lamp Operate

AKS00AP3

1. CHECK BULB

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

OK or NG

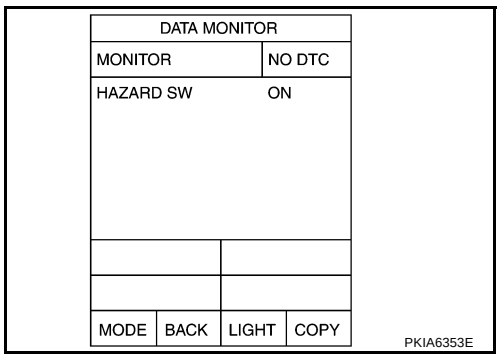
OK >> GO TO 2.
NG >> Replace bulb.

2. CHECK HAZARD SWITCH INPUT SIGNAL

With CONSULT-II

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

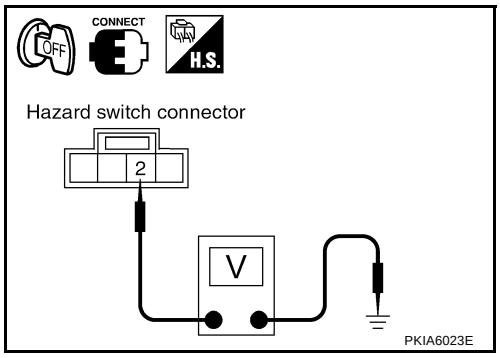
When hazard switch is ON : HAZARD SW ON position



Without CONSULT-II

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

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



OK or NG

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

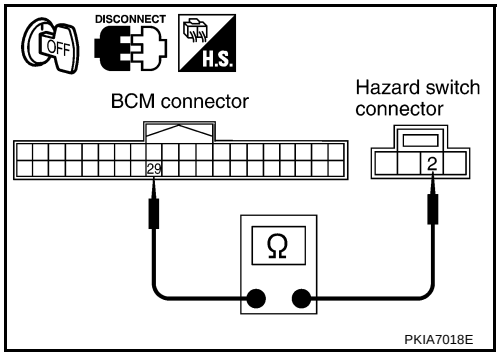
3. CHECK HAZARD SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and hazard switch connector.
3. Check continuity 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

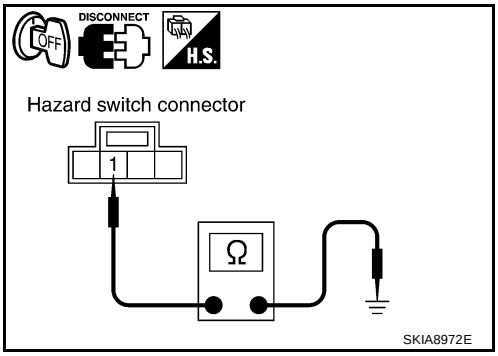
OK >> GO TO 4.
NG >> Repair harness or connector.



4. CHECK GROUND

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

1 (B) – Ground : Continuity should exist.



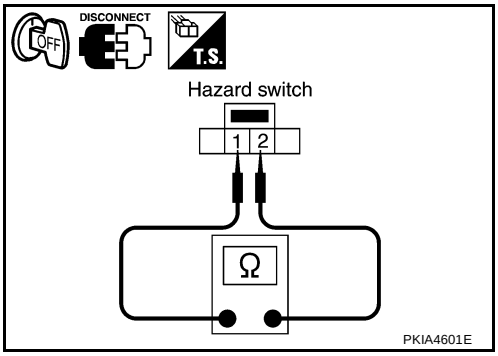
OK or NG

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

5. CHECK HAZARD SWITCH

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

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



OK or NG

OK >> Replace BCM if turn signal lamps does not work after setting the connector again. Refer to BCS-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.

OK or NG

OK >> Replace combination meter.
NG >> Replace indicator bulb.

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

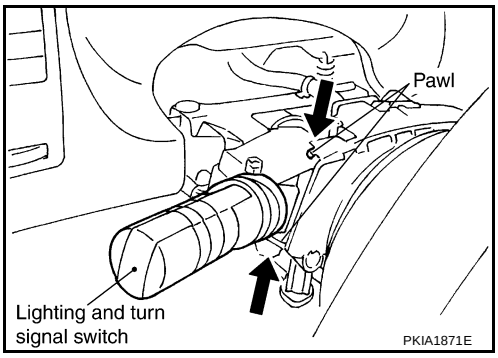
PFP:25540

Removal and Installation

AKS000UU

REMOVAL

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



INSTALLATION

Install in the reverse order of removal.

HAZARD SWITCH

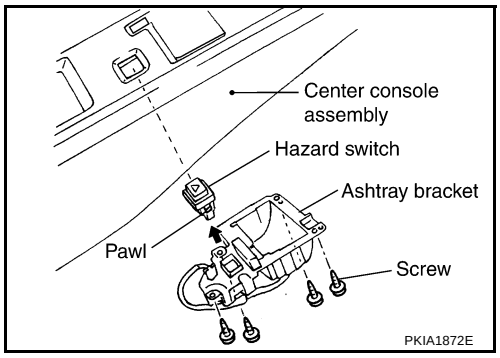
PFP:25290

Removal and Installation

AKS000UV

REMOVAL

1. Remove center console assembly. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" 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

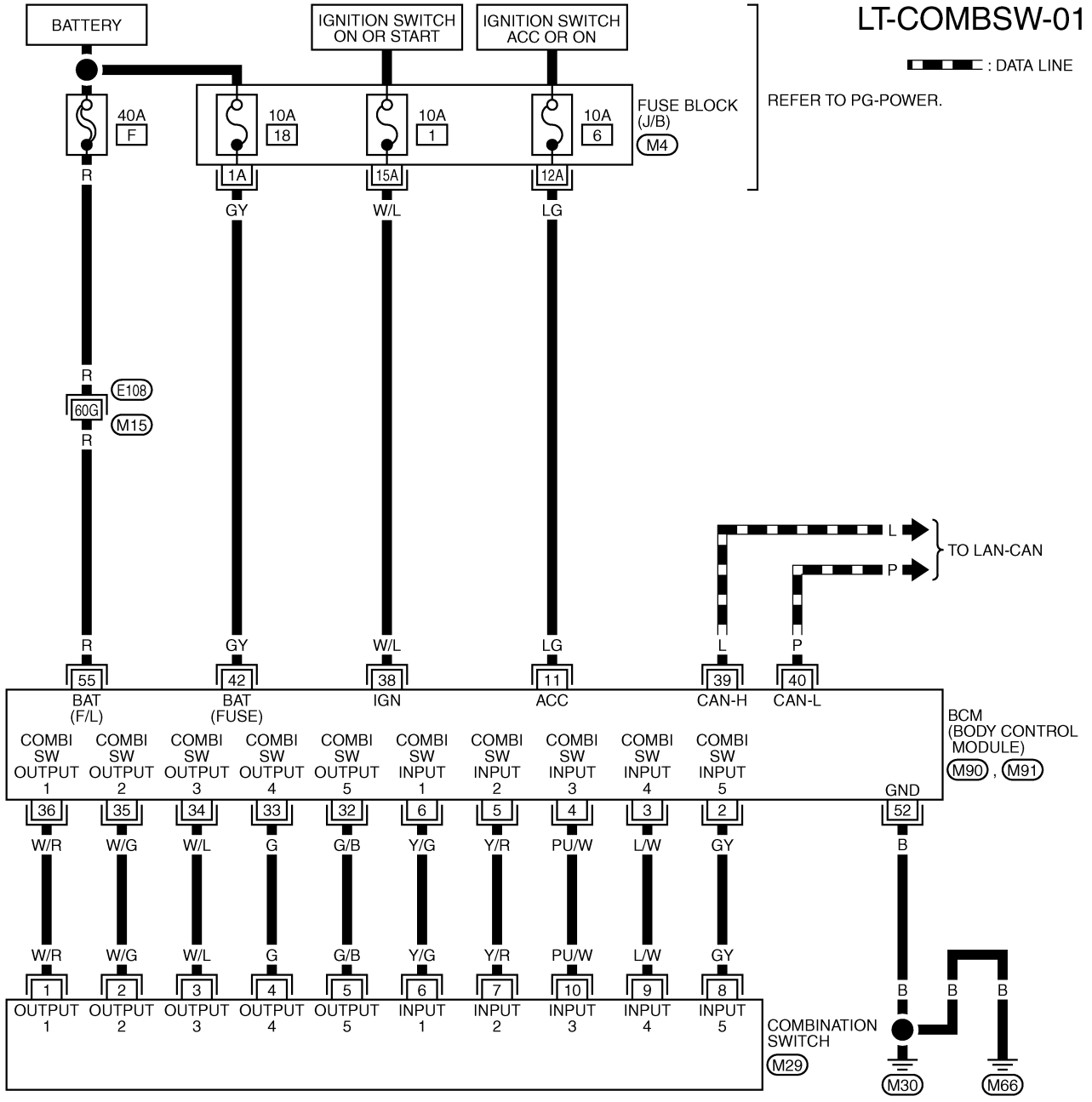
Install in the reverse order of removal.

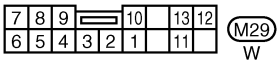
COMBINATION SWITCH

PFP:25567

Wiring Diagram—COMBSW—

AKS009RM





REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)
M90, M91 -ELECTRICAL UNITS

TKWT1809E

Combination Switch Reading Function

AKS00AP9

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

CONSULT-II Functions

AKS00APA

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

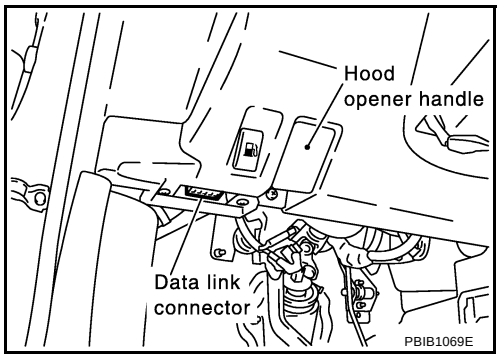
BCM diagnosis part	Check item, diagnosis mode	Description
Combination switch	Data monitor	Displays BCM input data in real time.

CONSULT-II BASIC OPERATION

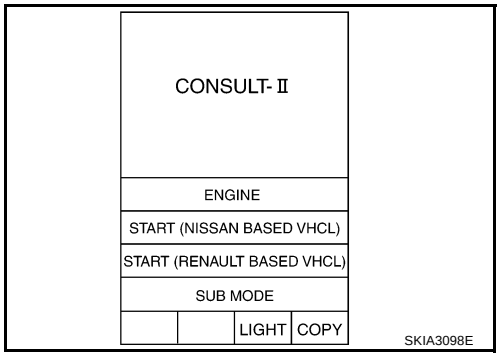
CAUTION:

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

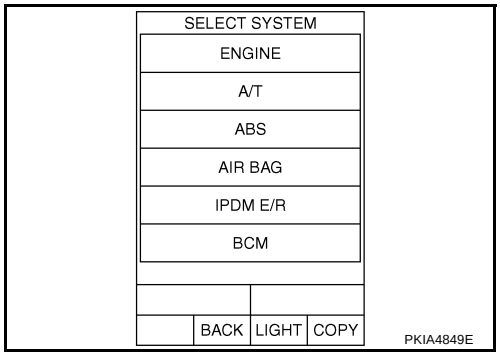
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



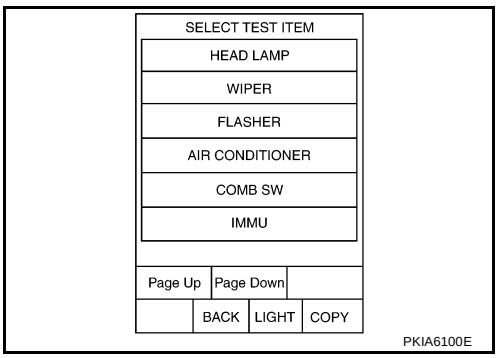
2. Touch “START (NISSAN BASED VHCL)”.



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



4. Touch “COMB SW”.



DATA MONITOR

Operation Procedure

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

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

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

Display Item List

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

NOTE:
This item is displayed, but cannot monitor it.

Combination Switch Inspection

AKS00APB

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.

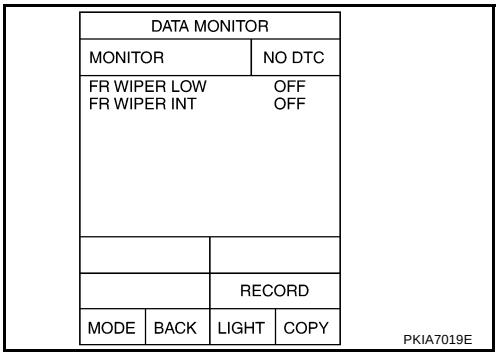
2. SYSTEM CHECK

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”.
3. 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.



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.

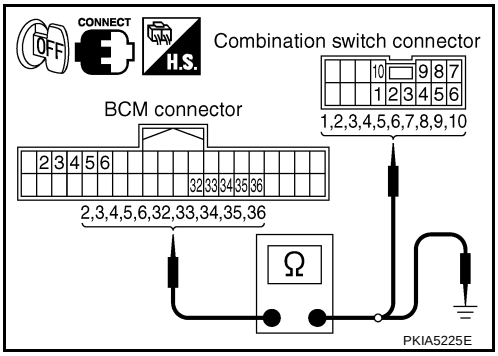
Check results

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.

Suspect system	Terminals					Continuity
	BCM			Combination switch		
	Connector	Terminal (Wire color)		Connector	Terminal (Wire color)	
1	M90	Input 1	6 (YG)	M29	6 (YG)	Yes
		Output 1	36 (W/R)		1 (W/R)	
2		Input 2	5 (Y/R)		7 (Y/R)	
		Output 2	35 (W/G)		2 (W/G)	
3		Input 3	4 (PU/W)		10 (PU/W)	
		Output 3	34 (W/L)		3 (W/L)	
4		Input 4	3 (L/W)		9 (L/W)	
		Output 4	33 (G)		4 (G)	
5		Input 5	2 (GY)		8 (GY)	
		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.

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

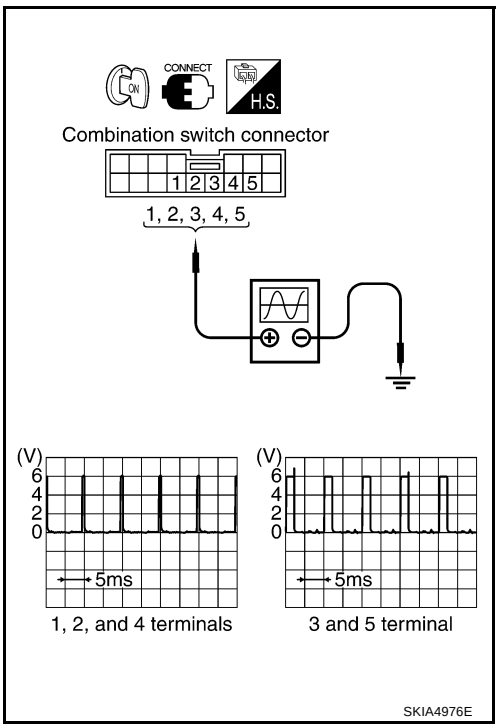
OK or NG

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

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.

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



OK or NG

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

5. COMBINATION SWITCH INSPECTION

Referring to table below, perform combination switch inspection.

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

>> INSPECTION END

Removal and Installation

AKS00APC

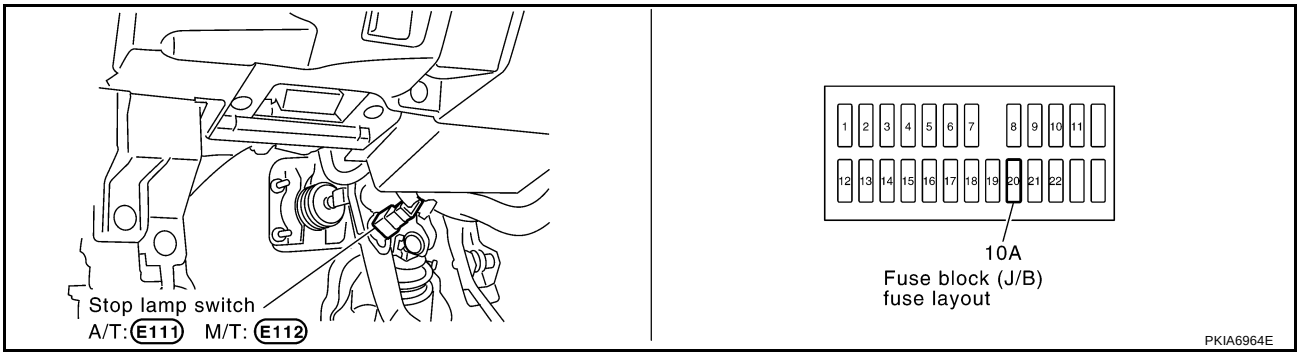
For details, refer to LT-165, "LIGHTING AND TURN SIGNAL SWITCH" .

STOP LAMP

PFP:26550

Component Parts and Harness Connector Location

AKS00AT0



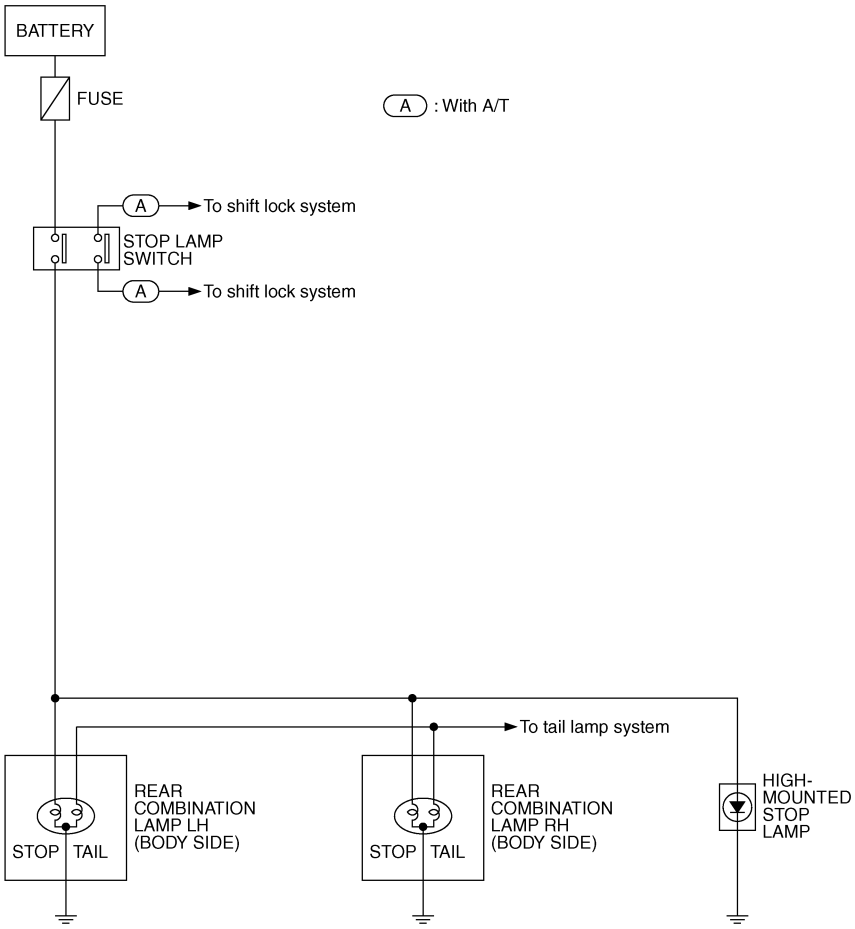
System Description

AKS00AT1

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

Schematic

AKS00ADW

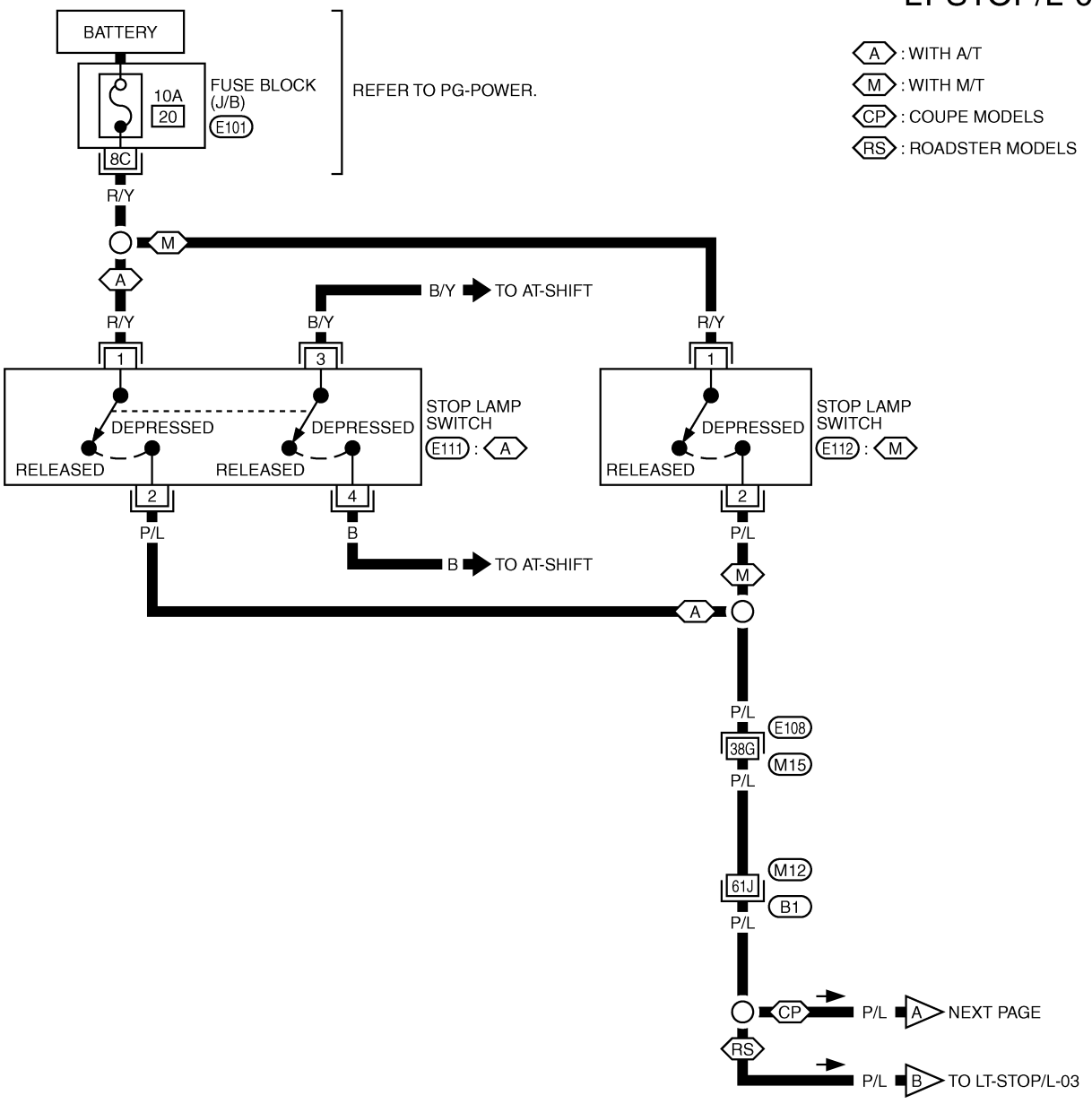


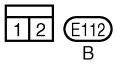
TKWT1601E

Wiring Diagram — STOP/L —

AKS009S8

LT-STOP/L-01

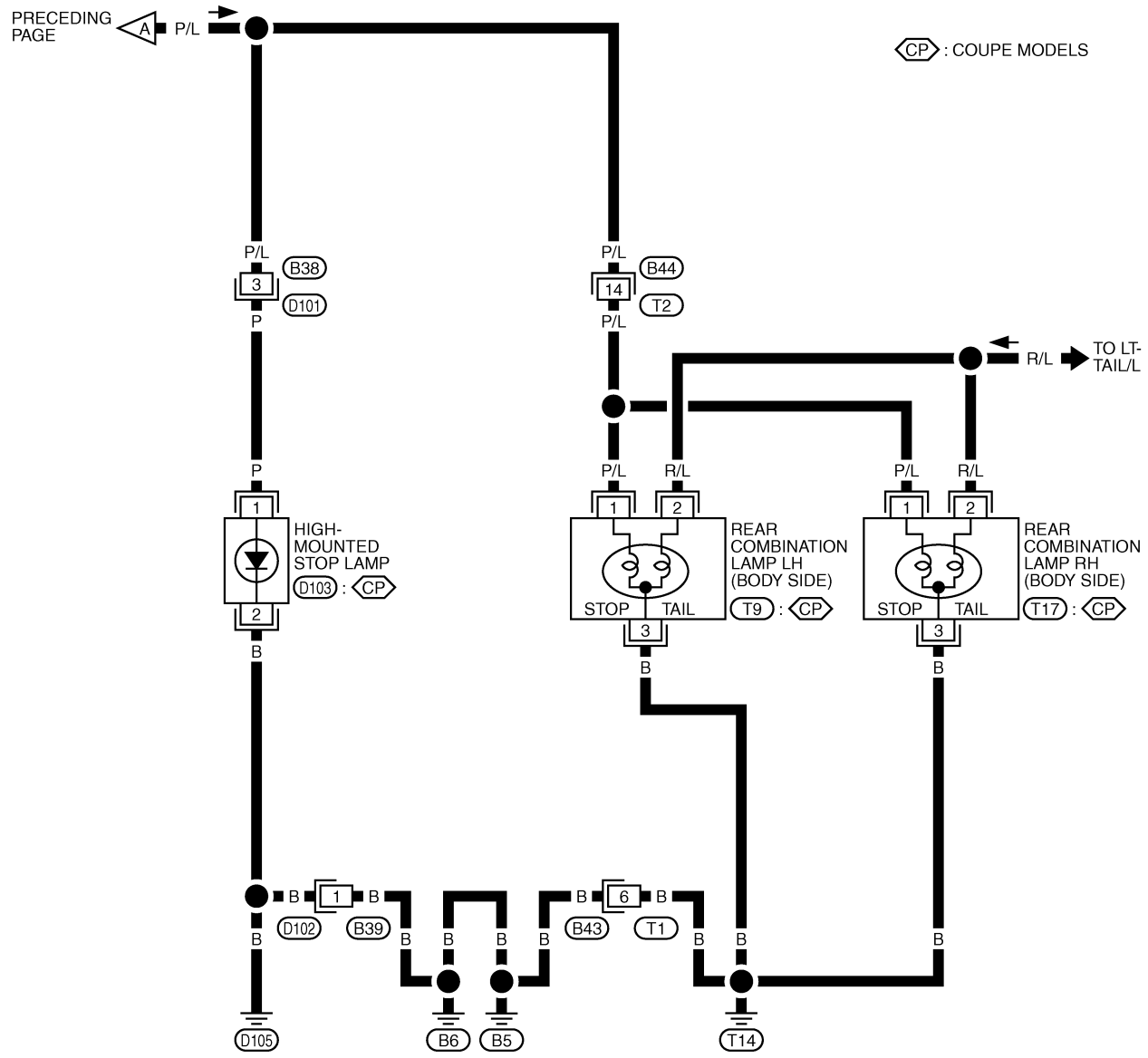


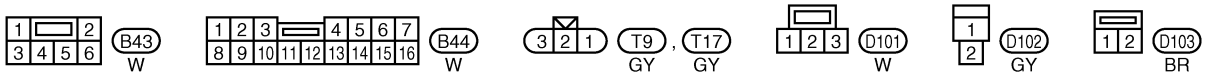


REFER TO THE FOLLOWING.
E108 , B1 -SUPER MULTIPLE JUNCTION (SMJ)
E101 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT1602E

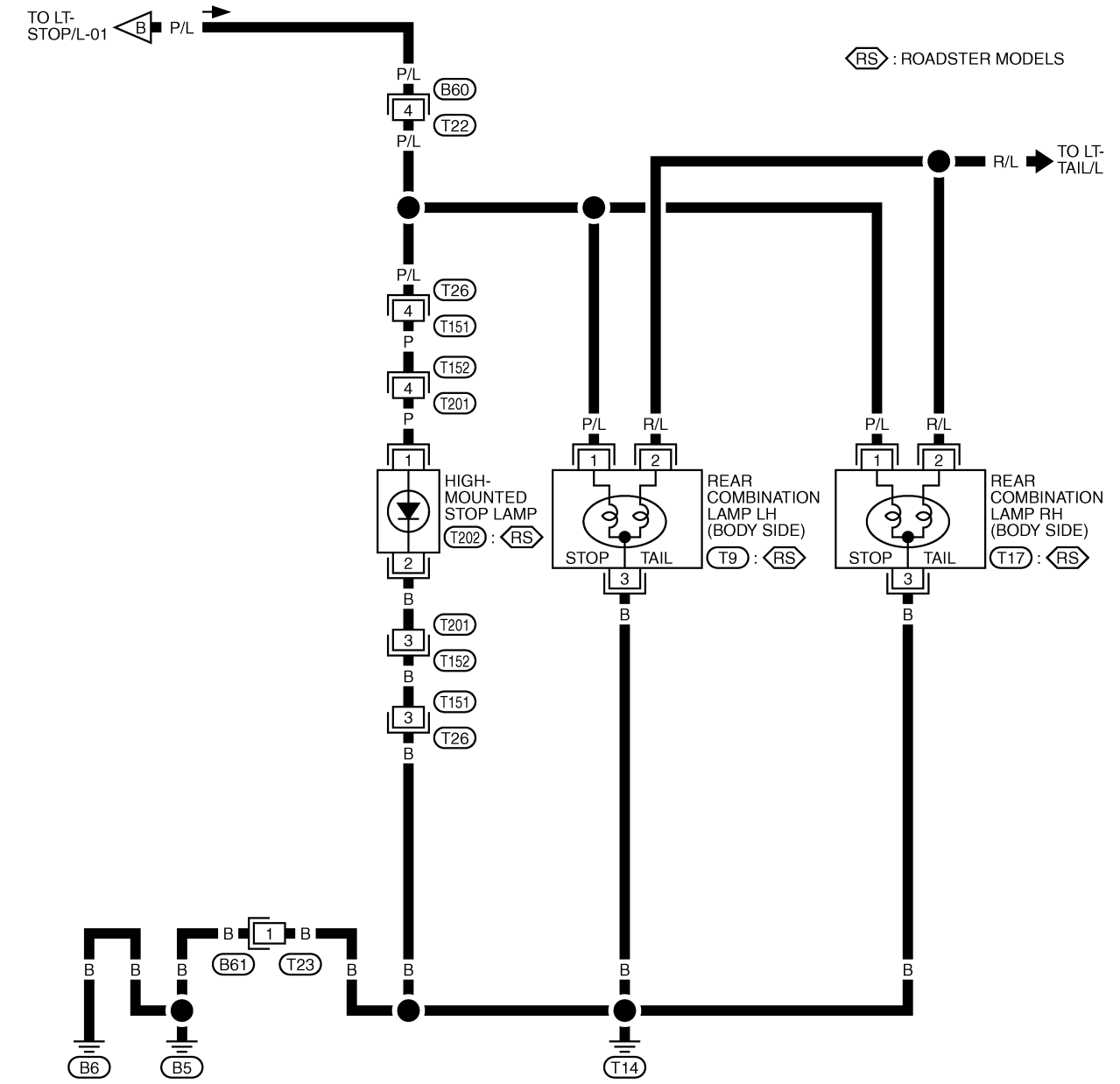
LT-STOP/L-02





TKWT1603E

LT-STOP/L-03



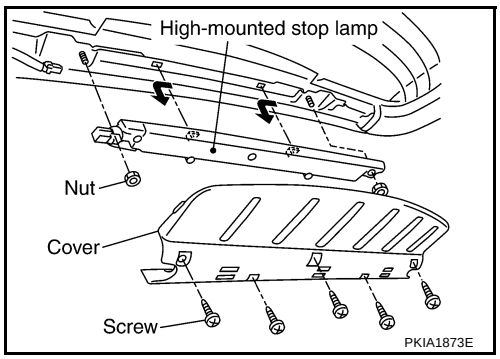
TKWT1604E

High-Mounted Stop Lamp (Coupe Models)

AKS009S9

BULB REPLACEMENT, REMOVAL AND INSTALLATION

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



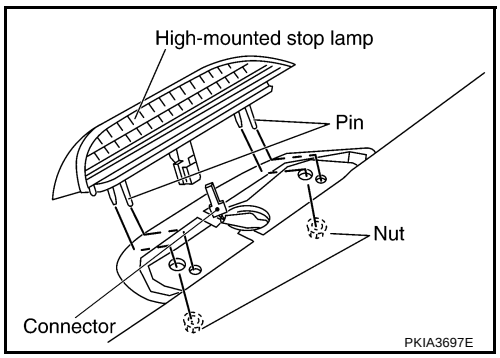
High-mounted stop lamp : LED

High-Mounted Stop Lamp (Roadster Models)

AKS003U0

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

AKS009SA

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”.

BACK-UP LAMP

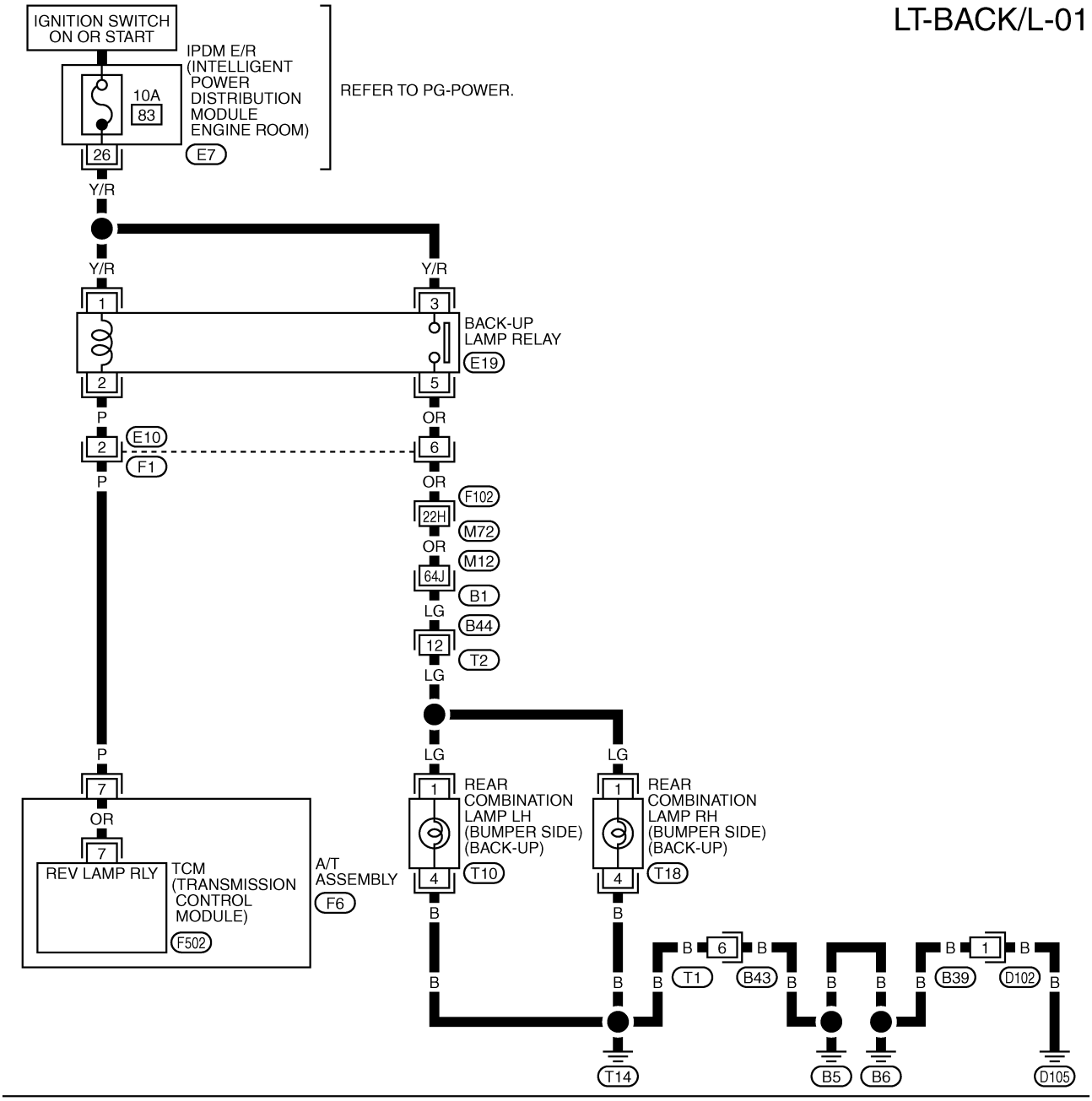
PFP:26550

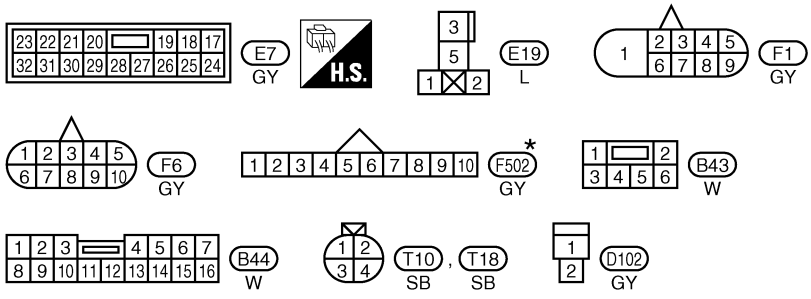
Wiring Diagram — BACK/L —

AKS009SF

COUPE MODELS (A/T)

LT-BACK/L-01





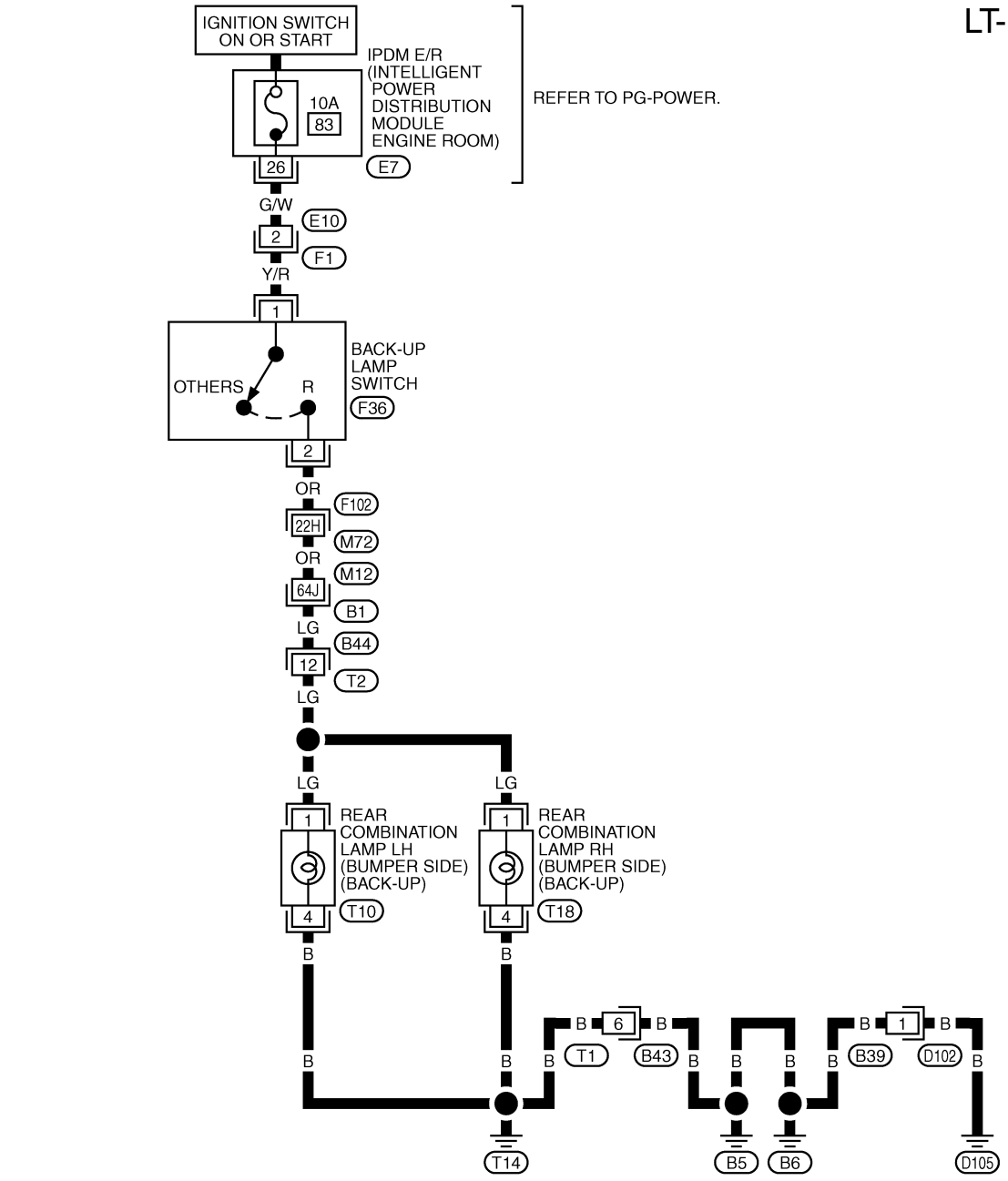
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

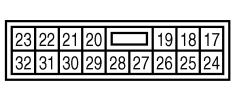
REFER TO THE FOLLOWING.
F102 , B1 -SUPER MULTIPLE JUNCTION (SMJ)

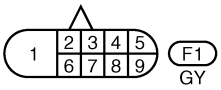
TKWM1315E

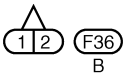
COUPE MODELS (M/T)

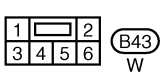
LT-BACK/L-02

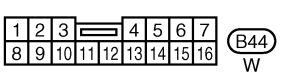


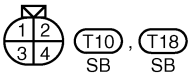


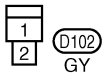










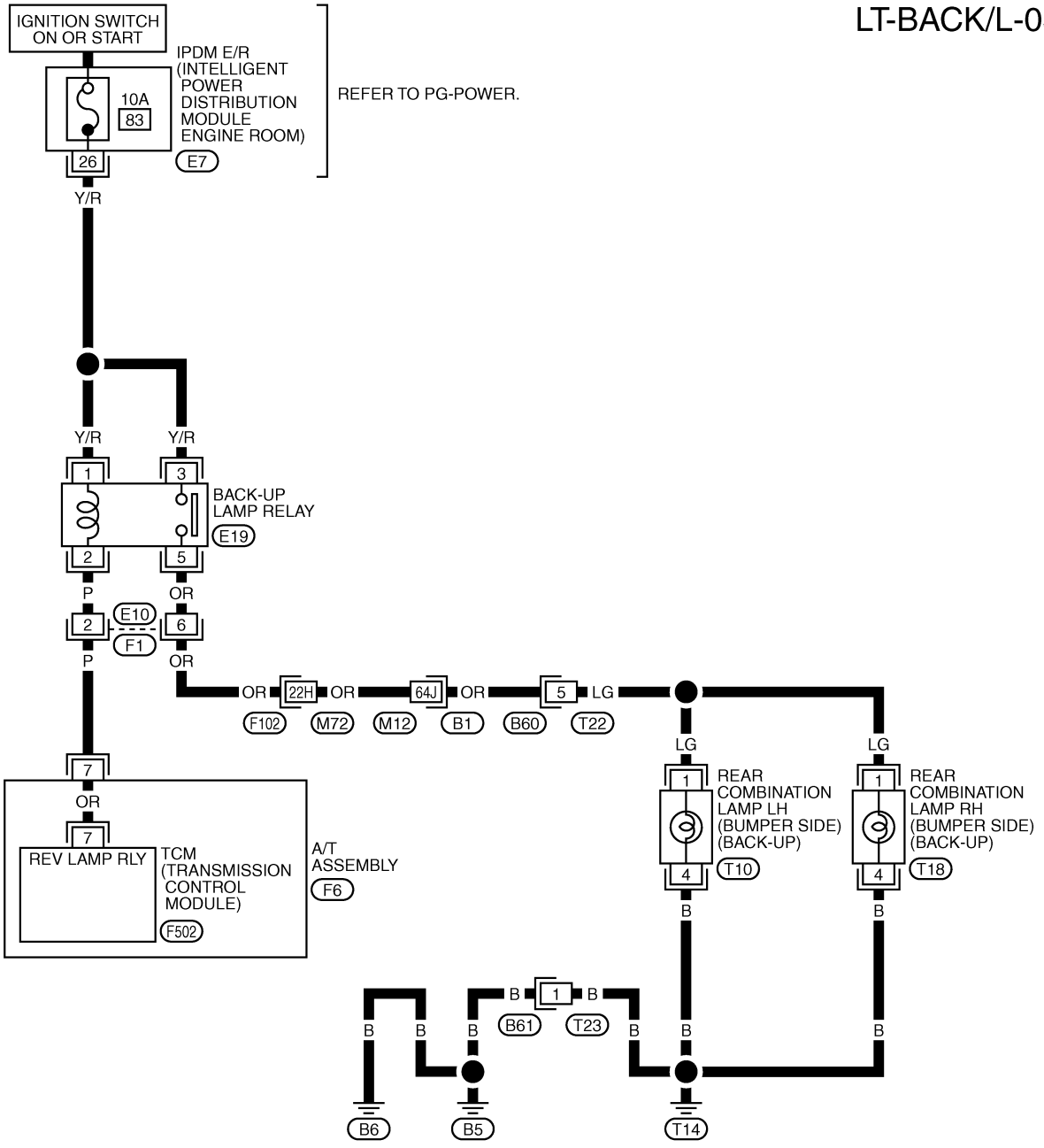


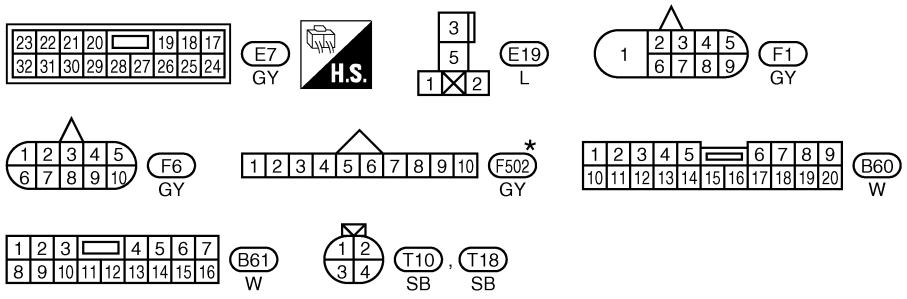
REFER TO THE FOLLOWING.
F102 , B1 -SUPER MULTIPLE JUNCTION (SMJ)

TKWT1326E

ROADSTER MODELS (A/T)

LT-BACK/L-03





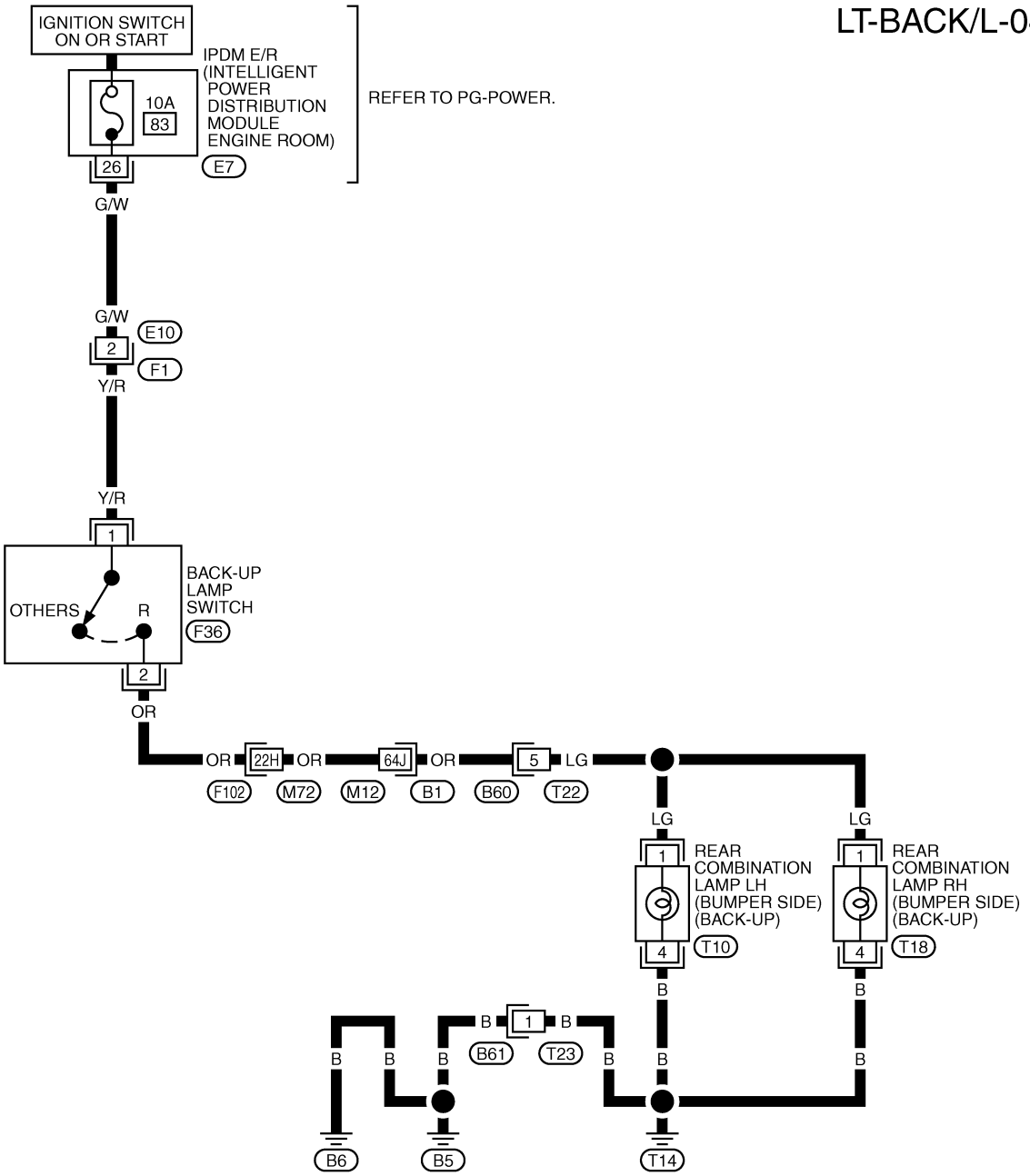
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

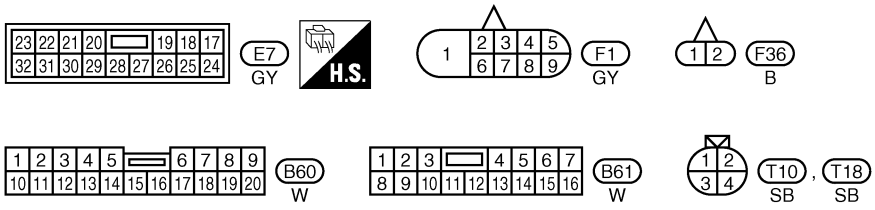
REFER TO THE FOLLOWING.
F102 , B1 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM1316E

ROADSTER MODELS (M/T)

LT-BACK/L-04





REFER TO THE FOLLOWING.
F102 , B1 -SUPER MULTIPLE JUNCTION (SMJ)

TKWT1606E

Bulb Replacement

AKS000V8

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

Removal and Installation

AKS000V9

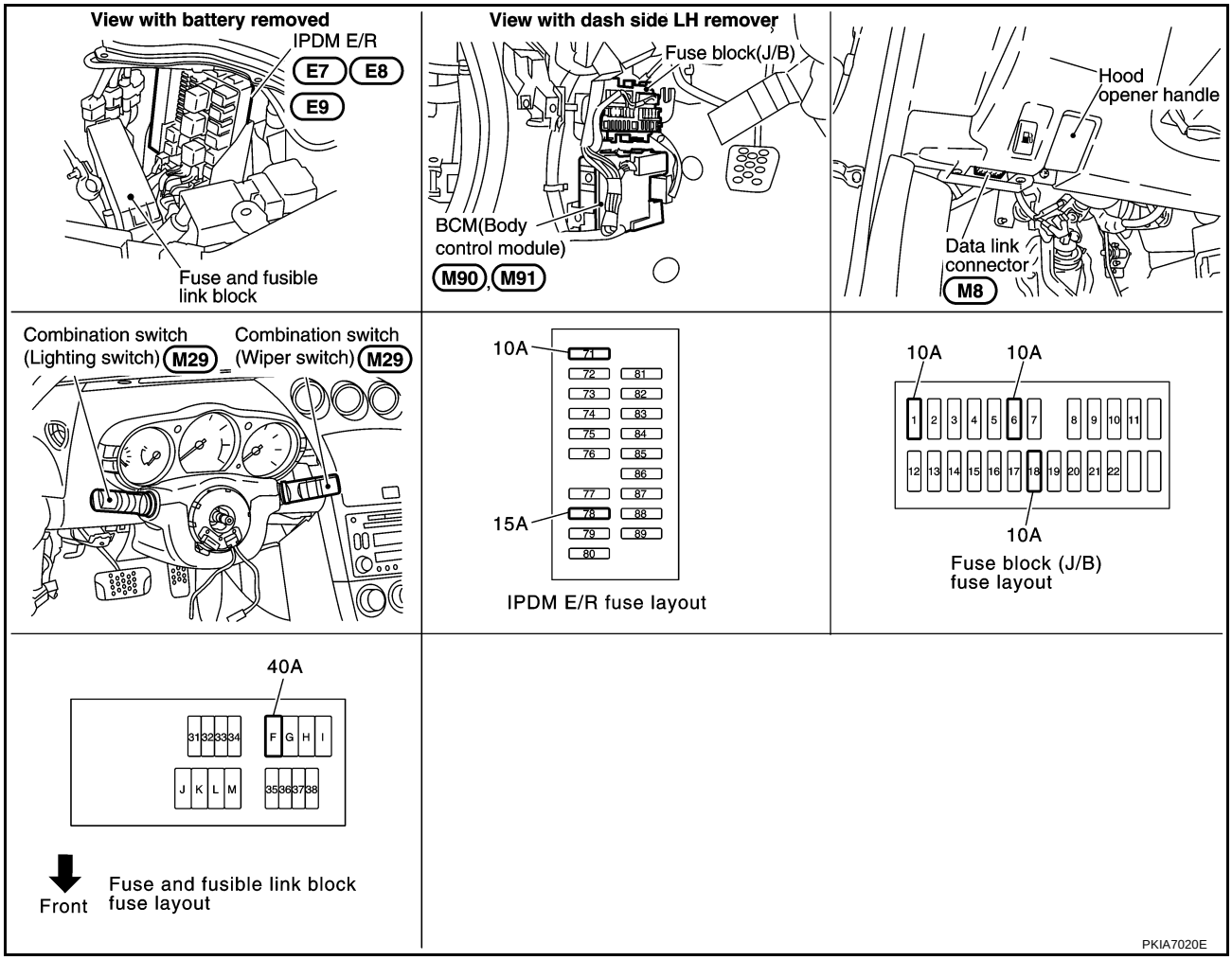
Refer to LT-206, "Removal and Installation" in “REAR COMBINATION LAMP”.

PARKING, LICENSE PLATE AND TAIL LAMPS

PFP:26550

Component Parts and Harness Connector Location

AKS00ADQ



System Description

AKS009RU

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

OUTLINE

Power is supplied at all times

- through 10A fuse [No.71, located in IPDM E/R (intelligent power distribution module engine room)]
- to tail lamp relay [located in IPDM E/R (intelligent power distribution module engine room)]
- through 15A fuse [No.78, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)].

Power is also supplied at all times

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

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

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

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

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

Ground is supplied

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

OPERATION BY LIGHTING SWITCH

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

- through IPDM E/R terminal 22
- to front combination lamp LH terminals 5 and 6 (With xenon bulb headlamp)
- to front combination lamp LH terminal 5 (With halogen bulb headlamp)
- to front combination lamp RH terminals 5 and 6 (With xenon bulb headlamp)
- to front combination lamp RH terminal 5 (With halogen bulb headlamp)
- to rear combination lamp LH terminals 2 and 5
- to rear combination lamp RH terminals 2 and 5
- to license plate lamp LH terminal 2
- to license plate lamp RH terminal 2.

Ground is supplied at all times

- to front combination lamp LH terminal 1 (With xenon bulb headlamp)
- to front combination lamp LH terminal 4 (With halogen bulb headlamp)
- through grounds E17, E43 and F152
- to front combination lamp RH terminal 1 (With xenon bulb headlamp)
- to front combination lamp RH terminal 4 (With halogen bulb headlamp)
- through grounds E17, E43 and F152
- to rear combination lamp LH terminals 3 and 4
- through grounds D105, B5, B6 and T14 (Coupe models)
- through grounds B5, B6 and T14 (Roadster models)
- to rear combination lamp RH terminals 3 and 4
- through grounds D105, B5, B6 and T14 (Coupe models)
- through grounds B5, B6 and T14 (Roadster models)
- to license plate lamp LH terminal 1
- through grounds D105, B5, B6 and T14 (Coupe models)
- through grounds B5, B6 and T14 (Roadster models)
- to license plate lamp RH terminal 1
- through grounds D105, B5, B6 and T14 (Coupe models)
- through grounds B5, B6 and T14 (Roadster models).

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

COMBINATION SWITCH READING FUNCTION

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

EXTERIOR LAMP BATTERY SAVER CONTROL

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

CAN Communication System Description

AKS009RV

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

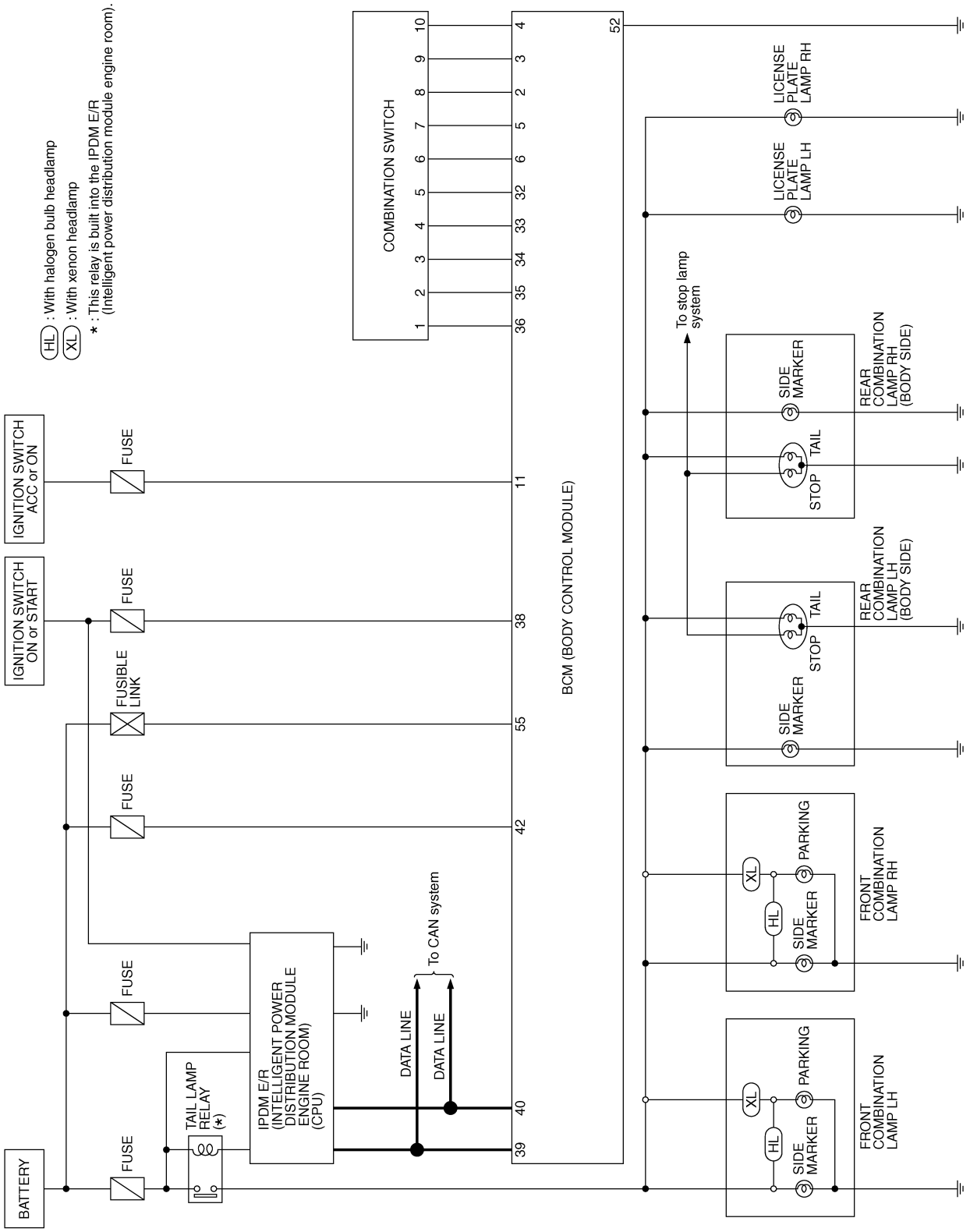
CAN Communication Unit

AKS009RW

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

Schematic

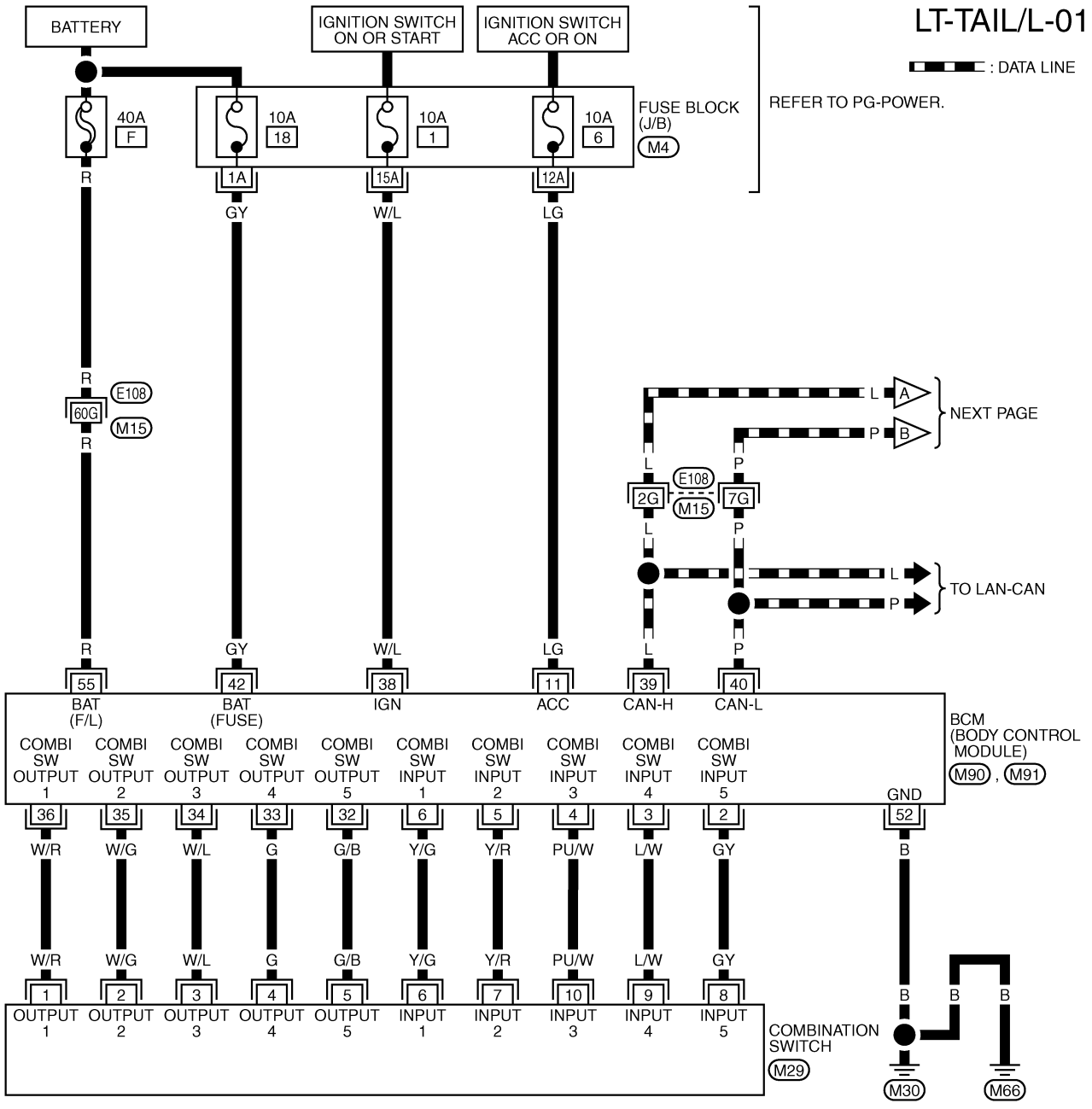
AKS009RX



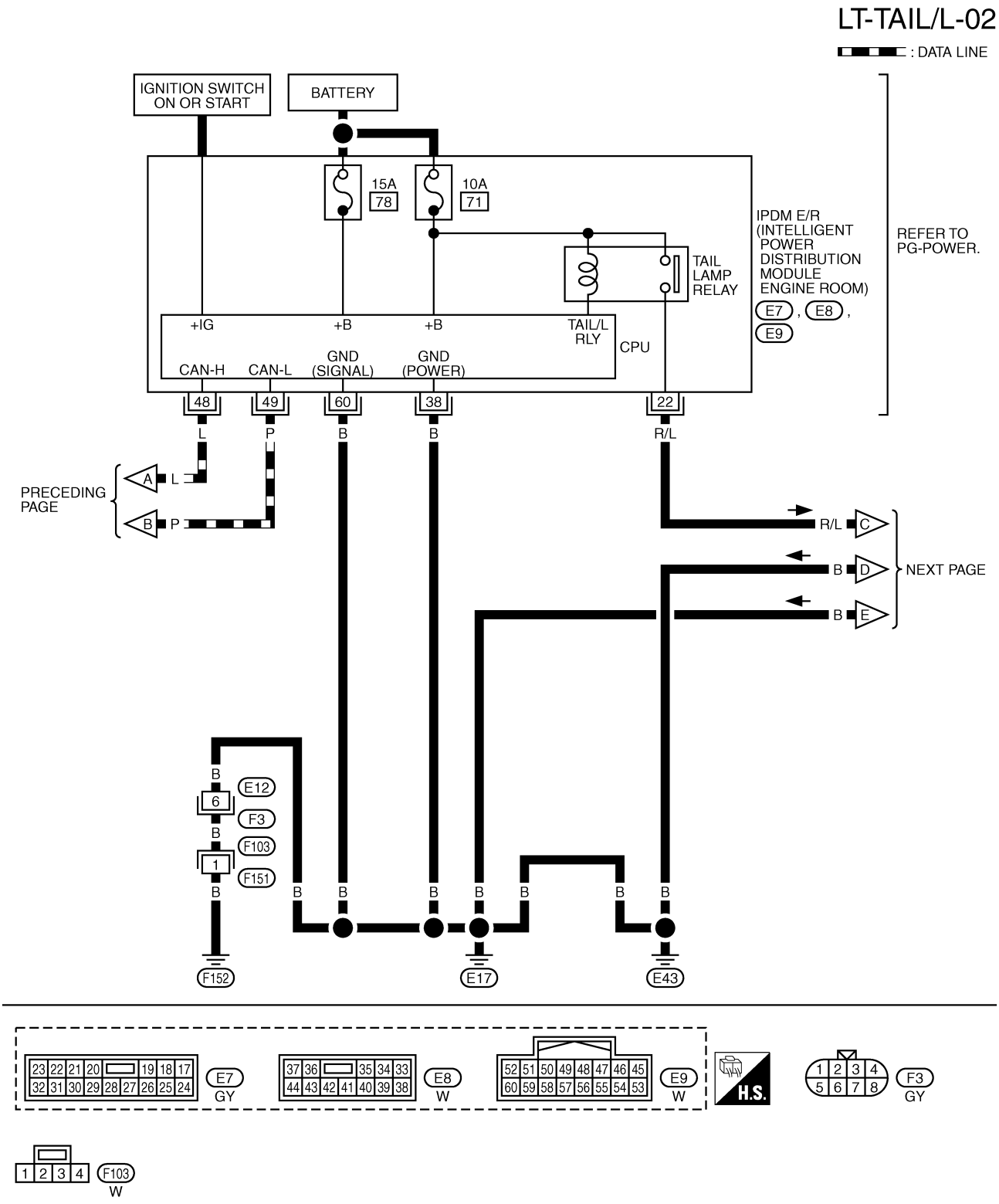
TKWT1810E

Wiring Diagram — TAIL/L —

AKS009RY



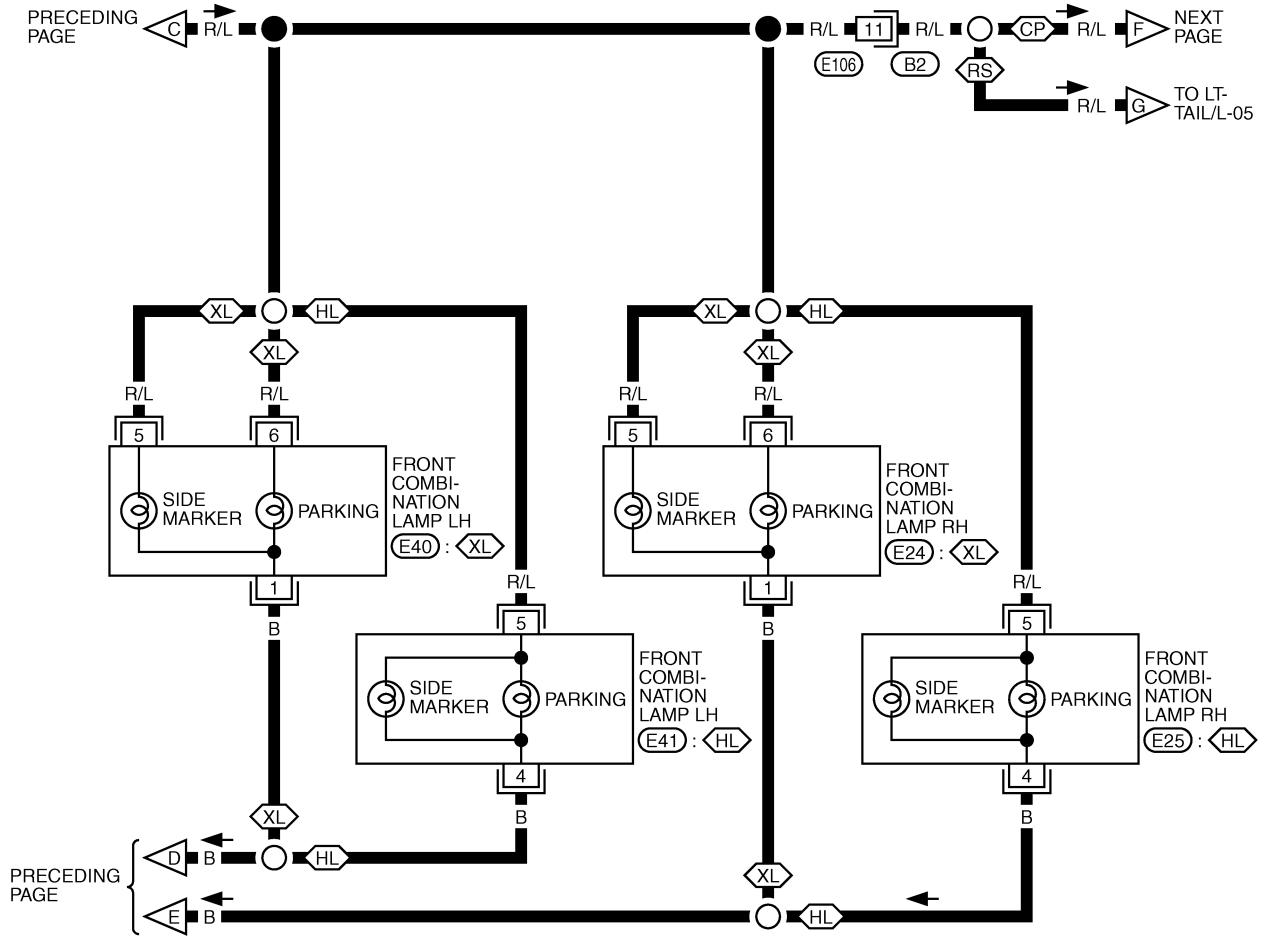
TKWT1811E

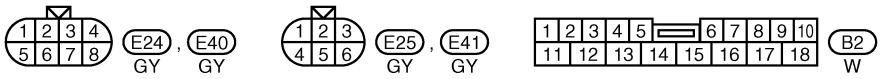

LT-TAIL/L-02
: DATA LINE
IGNITION SWITCH ON OR START
BATTERY
15A 78
10A 71
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E7 , E8 , E9
REFER TO PG-POWER.
TAIL LAMP RELAY
+IG
+B
+B
TAIL/L RLY
CPU
CAN-H
CAN-L
GND (SIGNAL)
GND (POWER)
48
49
60
38
22
L
P
B
B
R/L
PRECEDING PAGE
A L
B P
R/L C
B D
B E
NEXT PAGE
E12
6
F3
F103
1
F151
F152
E17
E43
E7 GY
E8 W
E9 W
H.S.
F3 GY
F103 W

TKWT1812E

LT-TAIL/L-03

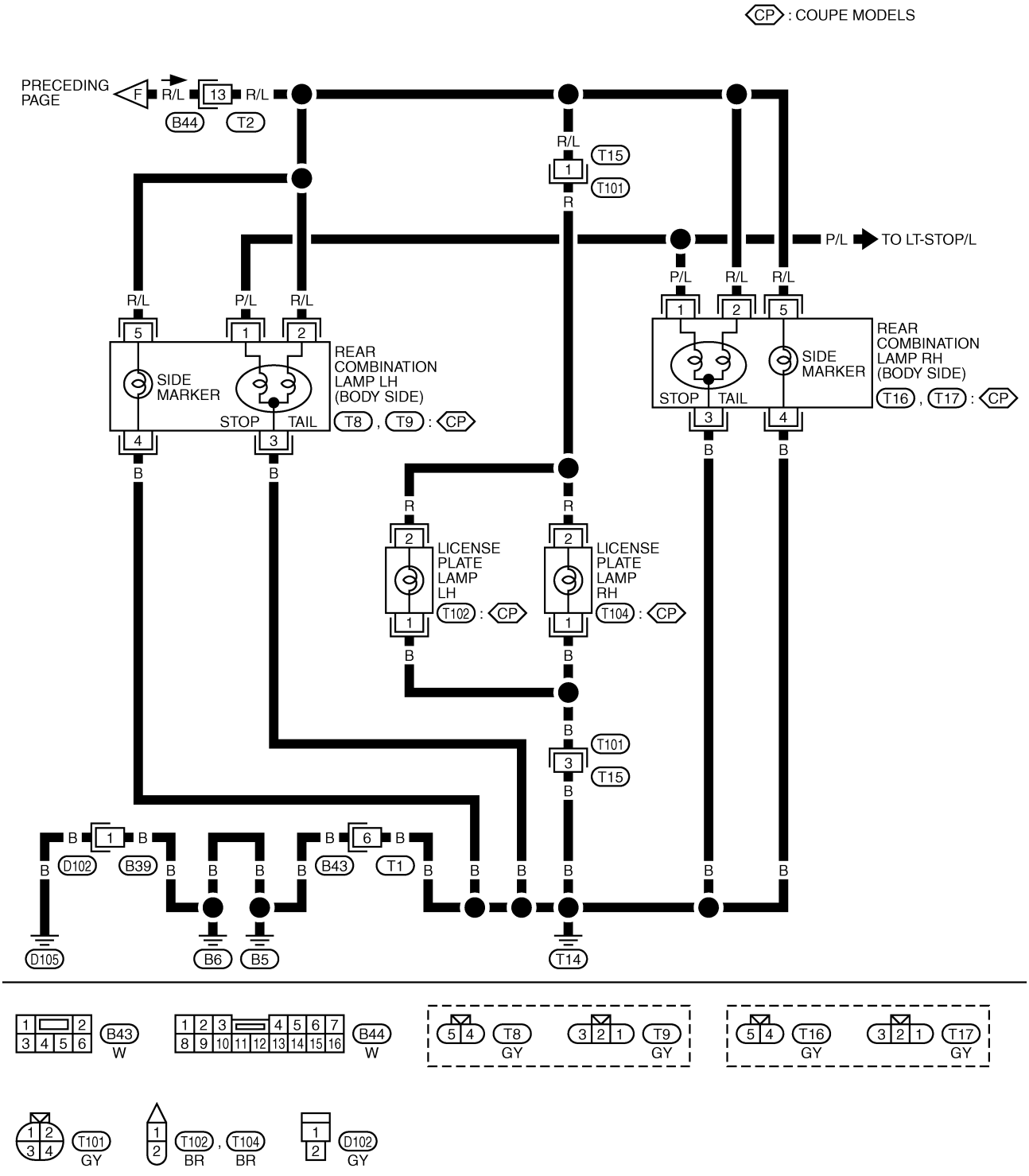
CP : COUPE MODELS
RS : ROADSTER MODELS
HL : WITH HALOGEN BULB HEADLAMP
XL : WITH XENON HEADLAMP





TKWT1813E

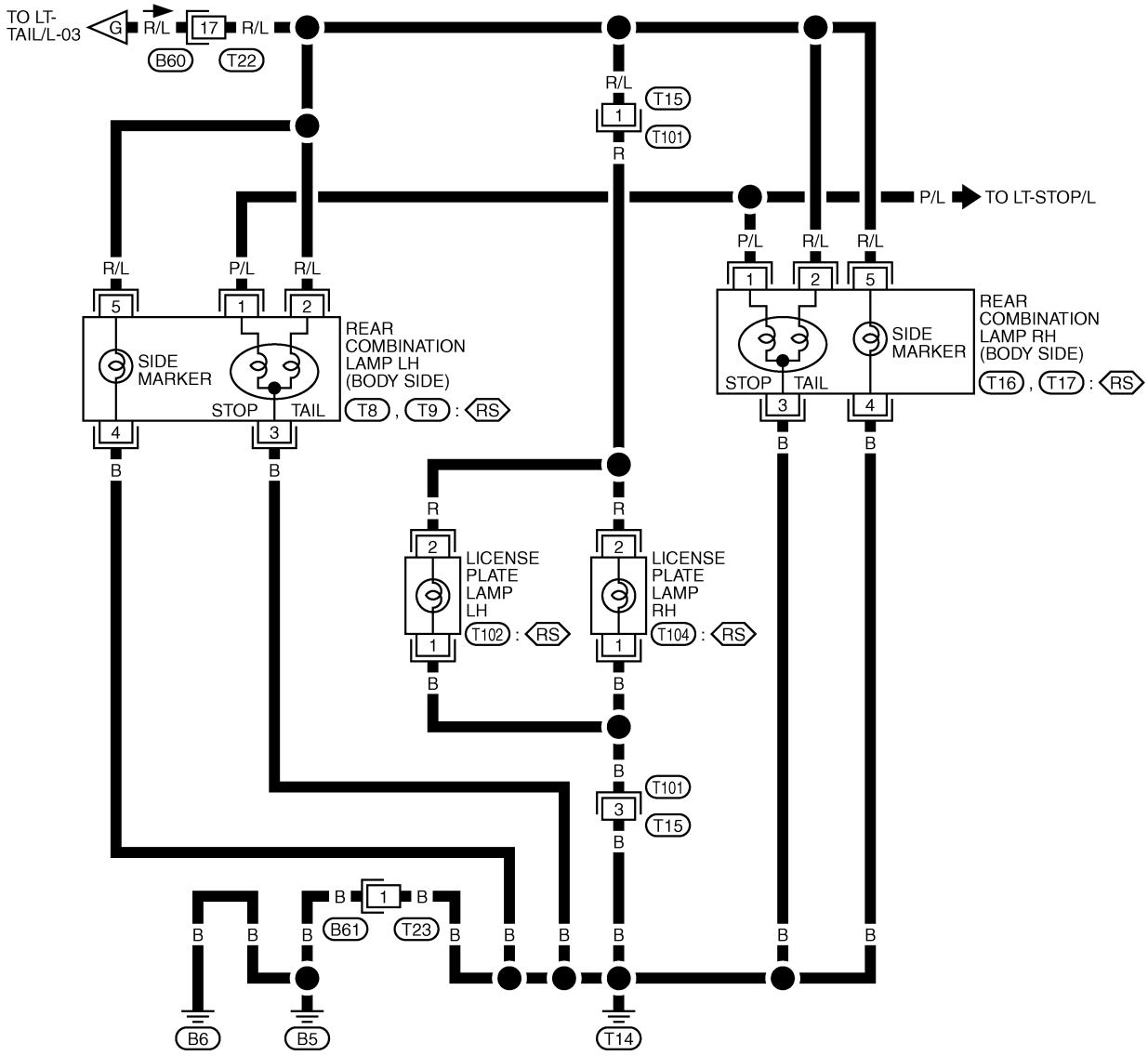
LT-TAIL/L-04

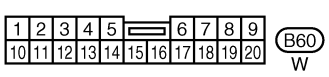


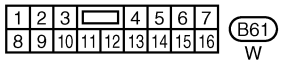
TKWT1814E

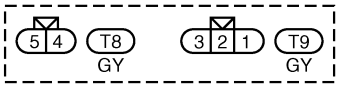
LT-TAIL/L-05

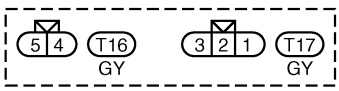
RS : ROADSTER MODELS

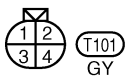








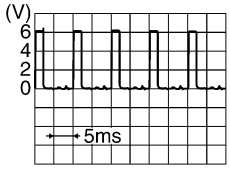
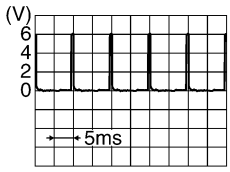
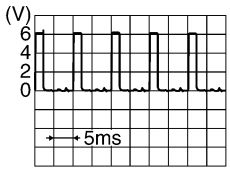
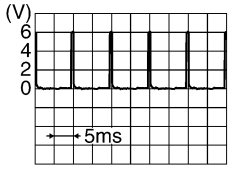
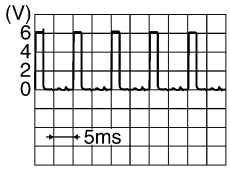
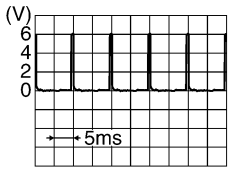
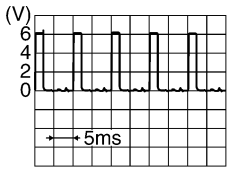


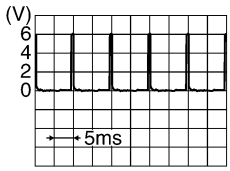


TKWT1815E

Terminals and Reference Values for BCM

AKS00APD

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

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

Terminals and Reference Values for IPDM E/R

AKS009SG

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

How to Proceed With Trouble Diagnosis

AKS009S0

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-184, "System Description" .
3. Carry out preliminary check. Refer to LT-194, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Do parking, license plate and tail lamps operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. INSPECTION END

Preliminary Check

AKS009S1

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check fuses for blown-out.

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

Refer to LT-188, "Wiring Diagram — TAIL/L —" .

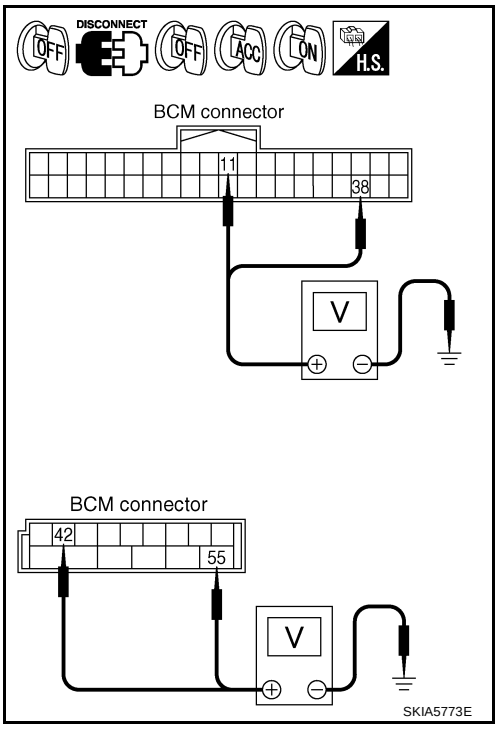
OK or NG

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

2. CHECK POWER SUPPLY CIRCUIT

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

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



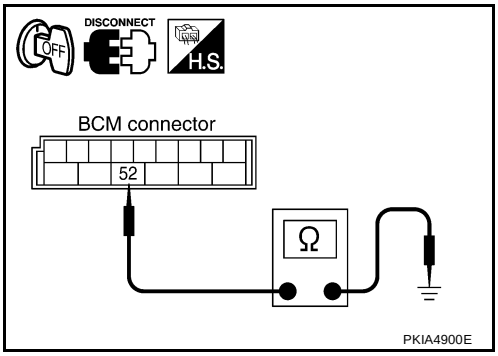
OK or NG

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector terminal and ground.

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



OK or NG

OK >> INSPECTION END
NG >> Check ground circuit harness.

CONSULT-II Functions (BCM)

AKS009S2

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

CONSULT-II Functions (IPDM E/R)

AKS00ADT

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

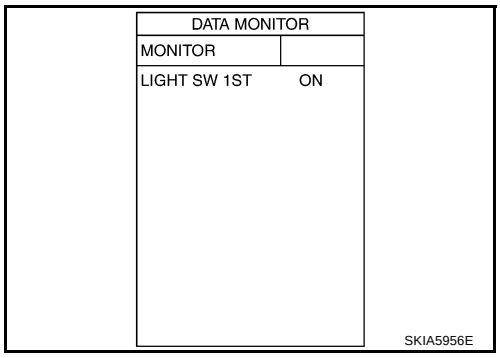
Parking, License Plate and Tail Lamps Do Not Illuminate

AKS00AP0

1. CHECK COMBINATION SWITCH INPUT SIGNAL

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

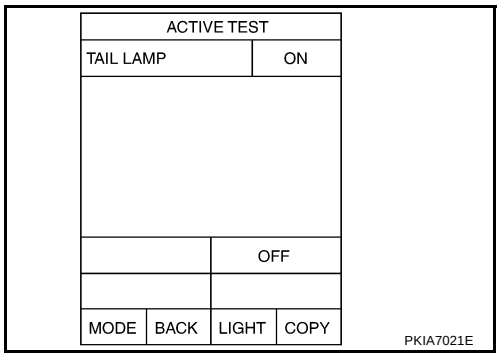
OK >> GO TO 2.
NG >> Check lighting switch. Refer to LT-170, "Combination Switch Inspection" .

2. ACTIVE TEST

With CONSULT-II

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

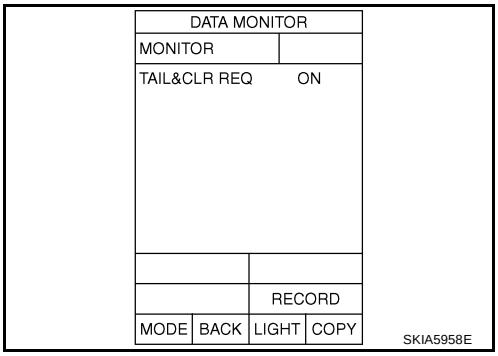
OK or NG

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

3. CHECK IPDM E/R

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

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



OK or NG

OK >> Replace IPDM E/R.

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

4. CHECK IPDM E/R

With CONSULT-II

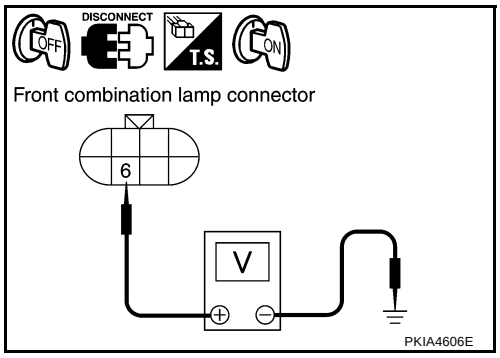
1. Turn ignition switch OFF.
2. Disconnect front combination lamp, rear combination lamp and license plate lamp connectors.
3. Select “IPDM E/R” on CONSULT-II. and select “ACTIVE TEST” on “SELECT DIAG MODE” screen.
4. Select “TAIL LAMP” on “SELECT TEST ITEM” screen.
5. Touch “ON” screen.
6. When tail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

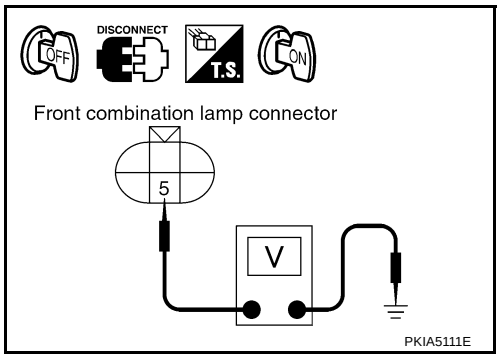
With xenon headlamp

Terminals				Voltage
Front combination lamp (+) (Parking)			(-)	
Connector		Terminal (wire color)		
RH	E24	6 (R/L)	Ground	Battery voltage
LH	E40			



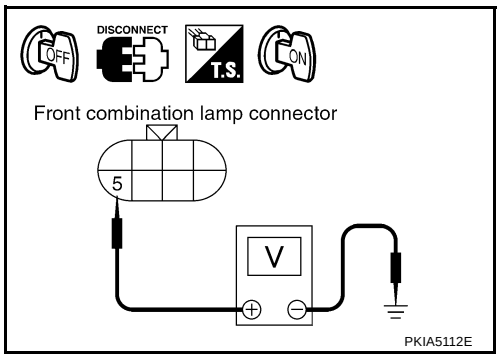
With halogen headlamp

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



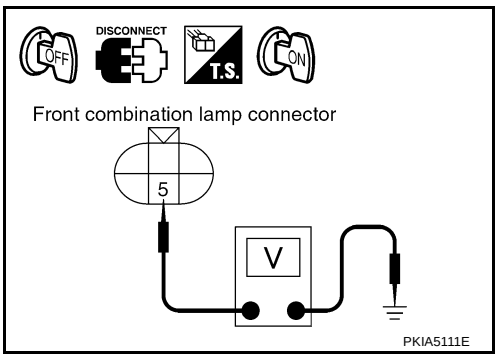
With xenon headlamp

Terminals				Voltage
Front combination lamp (+) (Side marker)			(-)	
Connector		Terminal (wire color)		
RH	E24	5 (R/L)	Ground	Battery voltage
LH	E40			

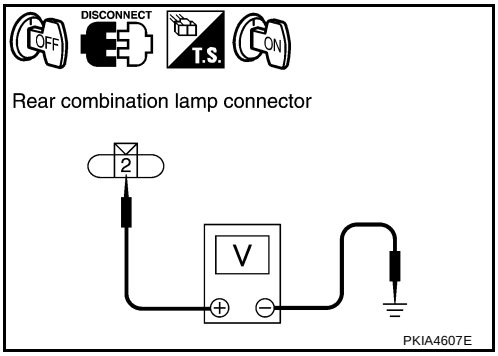


With halogen headlamp

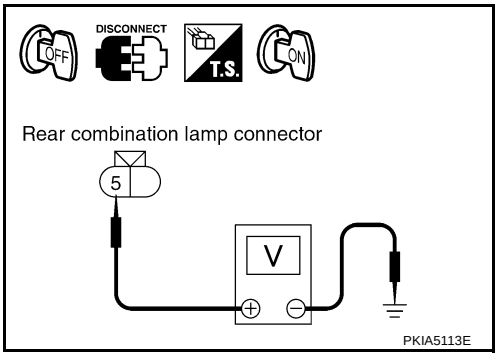
Terminals				Voltage
Front combination lamp (+) (side marker)			(-)	
Connector		Terminal (wire color)		
RH	E25	5 (R/L)	Ground	Battery voltage
LH	E41			



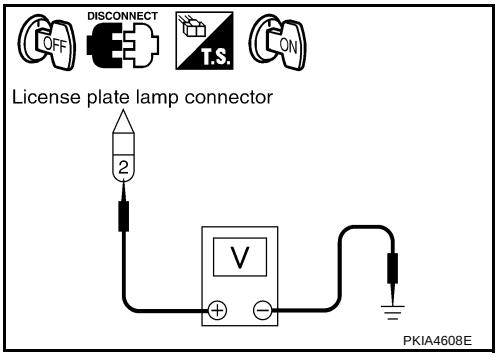
Terminals				Voltage
Rear combination lamp (+) (Tail)			(-)	
Connector		Terminal (wire color)		
RH	T17	2 (R/L)	Ground	Battery voltage
LH	T9			



Terminals				Voltage
Rear combination lamp (+) (Side marker)			(-)	
Connector		Terminal (wire color)		
RH	T16	5 (R/L)	Ground	Battery voltage
LH	T8			



Terminals				Voltage
License plate lamp (+)			(-)	
Connector		Terminal (wire color)		
RH	T104	2 (R)	Ground	Battery voltage
LH	T102			



OK or NG

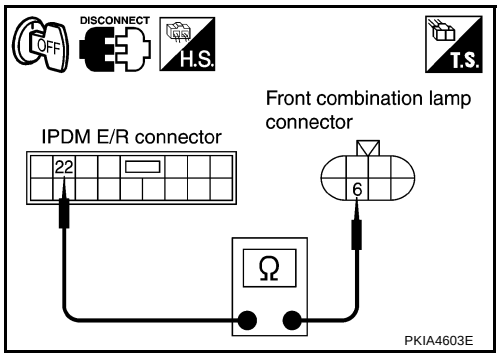
OK >> GO TO 6.
NG >> GO TO 5.

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.

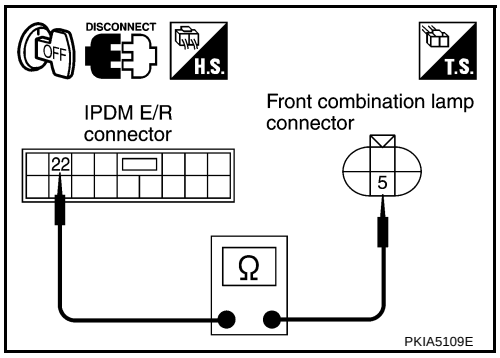
With xenon headlamp

Terminals					Continuity
IPDM E/R		Front combination lamp (Parking)			
Connector	Terminal (wire color)	Connector		Terminal (wire color)	
E7	22 (R/L)	RH	E24	6 (R/L)	Yes
		LH	E40	6 (R/L)	



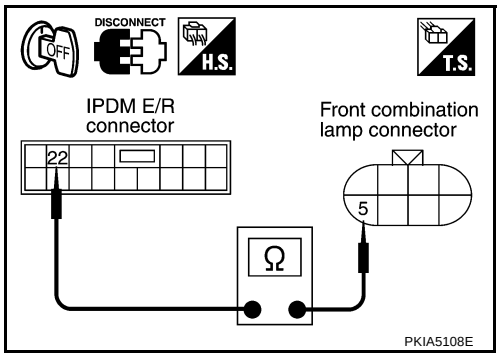
With halogen bulb headlamp

Terminals					Continuity
IPDM E/R		Front combination lamp (Parking)			
Connector	Terminal (wire color)	Connector		Terminal (wire color)	
E7	22 (R/L)	RH	E25	5 (R/L)	Yes
		LH	E41	5 (R/L)	



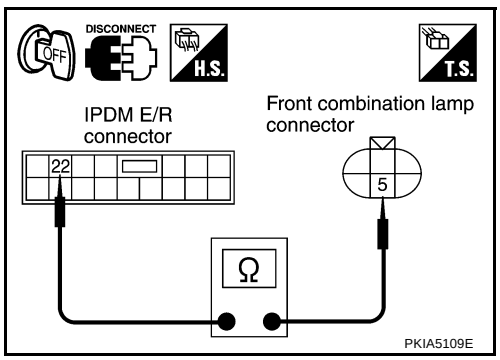
With xenon headlamp

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

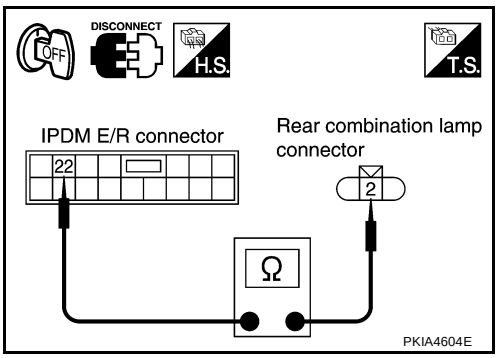


With halogen bulb headlamp

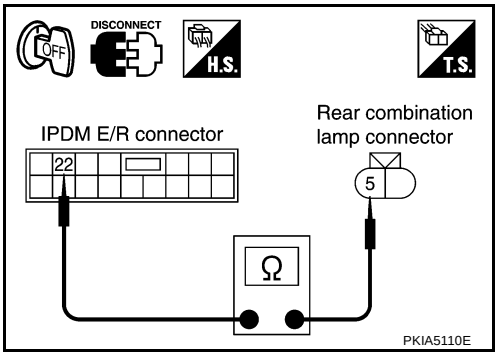
Terminals					Continuity
IPDM E/R		Front combination lamp (side marker)			
Connector	Terminal (wire color)	Connector		Terminal (wire color)	
E7	22 (R/L)	RH	E25	5 (R/L)	Yes
		LH	E41	5 (R/L)	



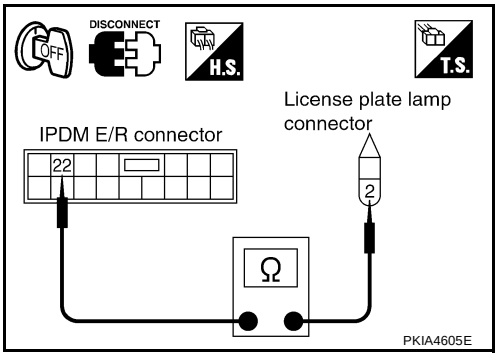
Terminals					Continuity
IPDM E/R		Rear combination lamp (Tail)			
Connector	Terminal (wire color)	Connector		Terminal (wire color)	
E7	22(R/L)	RH	T17	2 (R/L)	Yes
		LH	T9	2 (R/L)	



Terminals					Continuity
IPDM E/R		Rear combination lamp (side marker)			
Connector	Terminal (wire color)	Connector		Terminal (wire color)	
E7	22(R/L)	RH	T16	5 (R/L)	Yes
		LH	T8	5 (R/L)	



Terminals					Continuity
IPDM E/R		Licence plat lamp			
Connector	Terminal (wire color)	Connector		Terminal (wire color)	
E7	22 (R/L)	RH	T104	2 (R)	Yes
		LH	T102	2 (R)	



OK or NG

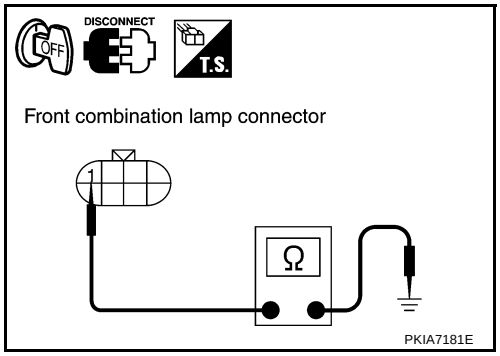
OK >> Replace IPDM E/R.
NG >> Repair harness or connector.

6. CHECK GROUND

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

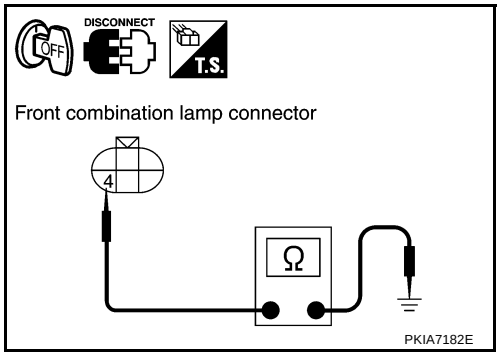
With xenon headlamp

Terminals				Continuity
Front combination lamp (Parking and side marker)			Ground	
Connector		Terminal (wire color)		
RH	E24	1 (B)		Yes
LH	E40			

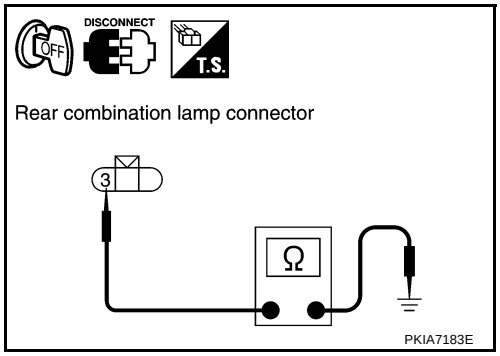


With halogen headlamp

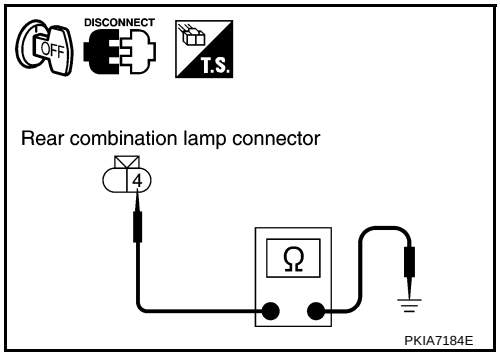
Terminals				Continuity
Front combination lamp (Parking and side marker)			Ground	
Connector		Terminal (wire color)		
RH	E25	4 (B)		Yes
LH	E41			



Terminals				Continuity
Rear combination lamp (Tail)			Ground	
Connector		Terminal (wire color)		
RH	T17	3 (B)		Yes
LH	T9			



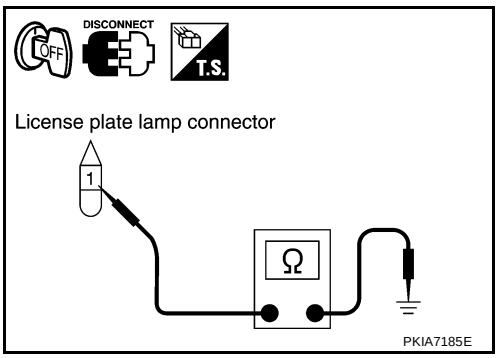
Terminals				Continuity
Rear combination lamp (Side marker)			Ground	
Connector		Terminal (wire color)		
RH	T16	4 (B)		Yes
LH	T8			



Terminals				Continuity
License plate lamp			Ground	
Connector		Terminal (wire color)		
RH	T104	1 (B)		Yes
LH	T102			

OK or NG

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



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

AKS00AP1

1. CHECK IPDM E/R

1. Turn ignition switch ON. Place combination switch (lighting switch) in the ON position. Turn ignition switch OFF.
2. Make sure parking, license plate, and tail lamps turn OFF after approximately 10 minutes.

OK or NG

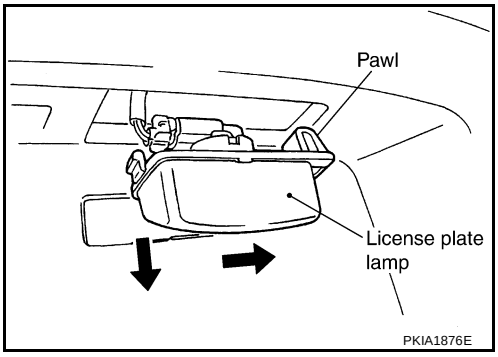
OK >> INSPECTION END.
NG >> Ignition relay malfunction. Refer to PG-19, "Function of Detecting Ignition Relay Malfunction" .

License Plate Lamp

AKS009S5

BULB REPLACEMENT, REMOVAL AND INSTALLATION

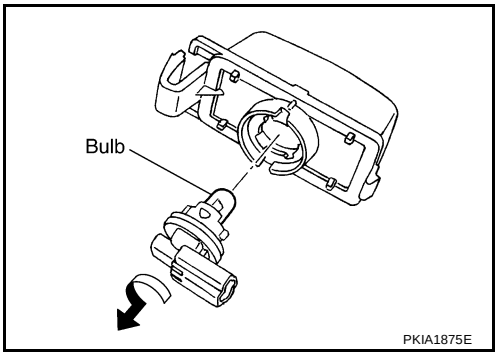
1. While pressing license plate lamp to right side, pull left side of it and remove.
2. Disconnect license plate lamp connector.



3. Turn bulb socket counterclockwise and unlock it.
4. Remove bulb from it's socket.

License plate lamp : 12V - 5W

5. Install in the reverse order of removal.



Front Parking (Clearance) Lamp

AKS009S6

BULB REPLACEMENT

For bulb replacement, refer to LT-34, "Bulb Replacement" in “HEAD LAMP (FOR USA)”.

REMOVAL AND INSTALLATION

For front parking (clearance) lamp removal and installation procedures, refer to LT-36, "Removal and Installation" in “HEAD LAMP (FOR USA)”.

Tail Lamp

AKS009S7

BULB REPLACEMENT

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 LT-206, "Removal and Installation" in “REAR COMBINATION LAMP”.

REAR COMBINATION LAMP

PFP:26554

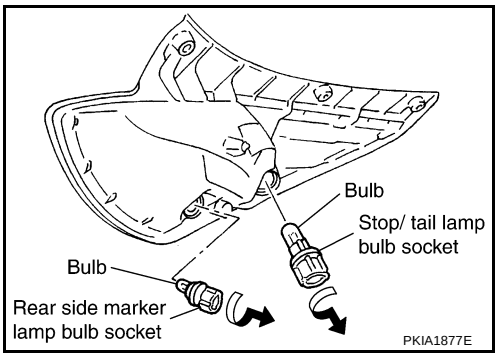
Bulb Replacement

AKS000VN

REAR FENDER SIDE (STOP & TAIL LAMP BULB, REAR SIDE MARKER LAMP BULB)

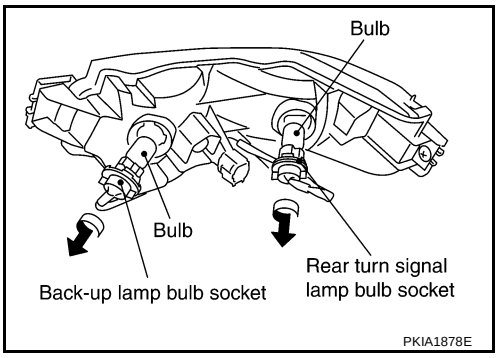
1. Remove rear combination lamp. Refer to LT-206, "Removal and Installation"
2. Turn bulb socket counterclockwise and unlock it.
3. Remove bulb.
4. Install in the reverse order of removal.

Stop/tail lamp (rear fender side)	**: 12V - 21/5W**
Rear side marker lamp (rear fender side)	**: 12V - 5W**



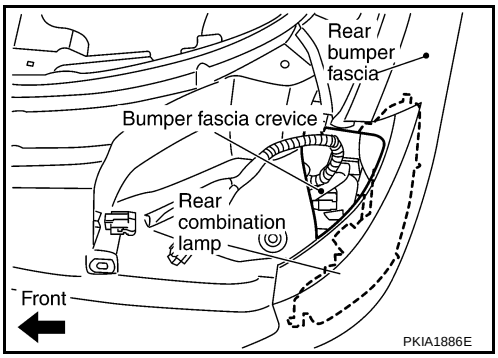
REAR BUMPER SIDE (BACK-UP LAMP BULB, REAR TURN SIGNAL LAMP BULB)

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



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

Rear turn signal lamp (rear bumper side)	**: 12V - 21W (umber bulb)**
Back-up lamp (rear bumper side)	**: 12V - 21W**



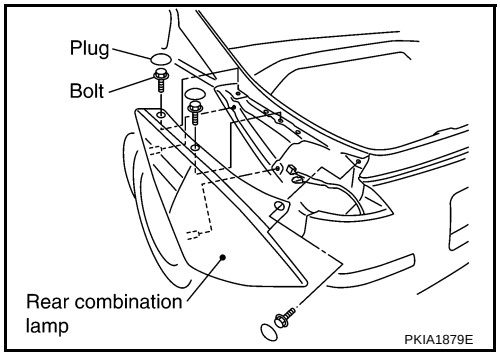
Removal and Installation

AKS000VO

REMOVAL

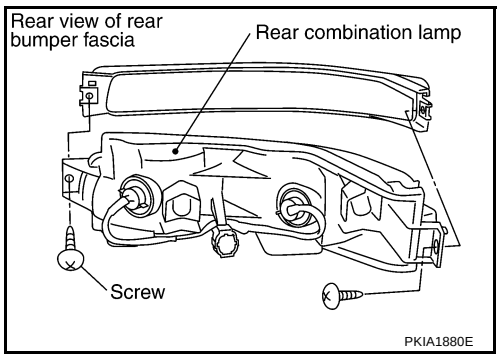
Rear Fender Side

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 EI-17, "REAR BUMPER" in “EI” section.
2. Disconnect rear combination lamp connector.
3. Remove rear combination lamp mounting screws.
4. Remove rear combination lamp from rear bumper fascia.



INSTALLATION

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

Rear combination lamp mounting bolt: (Rear fender side)

: 5.2 N·m (0.53 kg-m, 45 in-lb)

Rear combination lamp mounting screw: (Rear bumper side)

: 3.1 N·m (0.32 kg-m, 27 in-lb)

VANITY MIRROR LAMP

PFP:96400

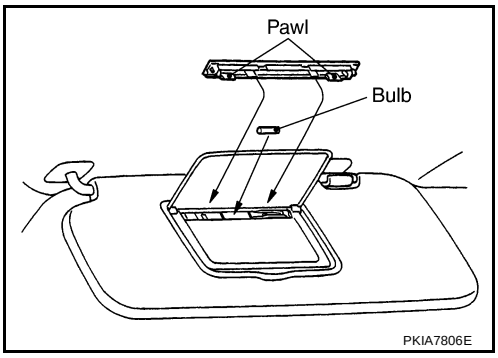
Bulb Replacement

AKS000VP

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.



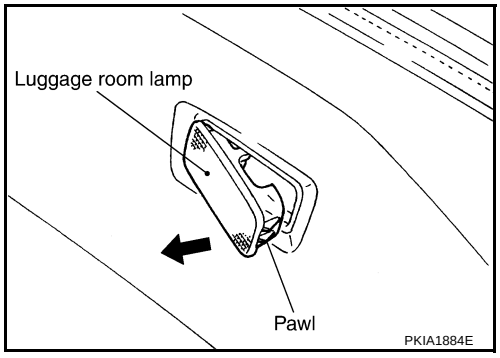
TRUNK ROOM LAMP

PFP:26470

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

AKS00ADR

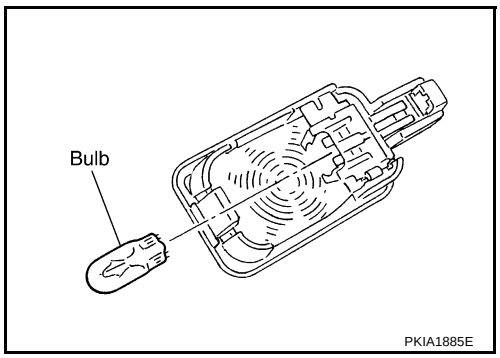
1. Pull out luggage room lamp in direction shown by the arrow in the figure.
2. Disconnect luggage room lamp connector.



3. Remove bulb.

Luggage room lamp : 12V - 5W

4. Install in the reverse order of removal.

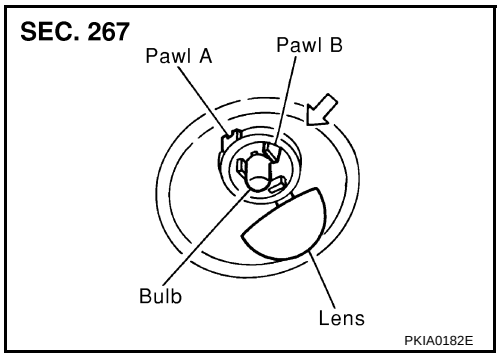


Bulb Replacement, Removal and Installation of Trunk Room Lamp (Roadster Models)

AKS00997

1. Unfold pawl A and remove lens.
2. Remove trunk room lamp while pressing pawl B in the direction of the arrow.
3. Disconnect trunk room lamp connector.

Trunk room lamp : 12V - 3.4W



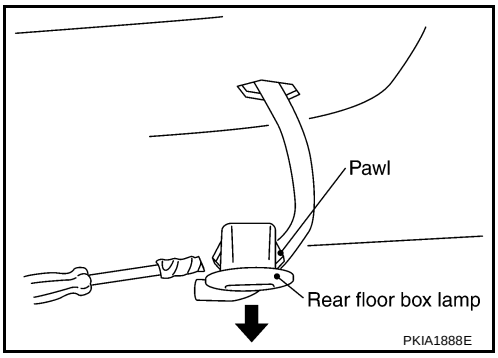
REAR FLOOR BOX LAMP

PFP:68520

Bulb Replacement, Removal and Installation

AKS003MW

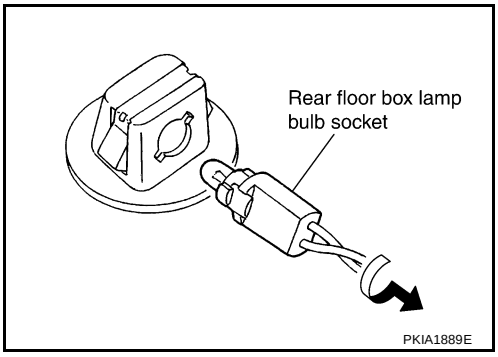
1. Pull out rear floor box lamp using screwdriver or similar tool.



2. Turn bulb socket counterclockwise to release lock and remove it.

Rear floor box lamp : 12V - 1.4W

3. Install in the reverse order of removal.



ASHTRAY ILLUMINATION

PFP:25860

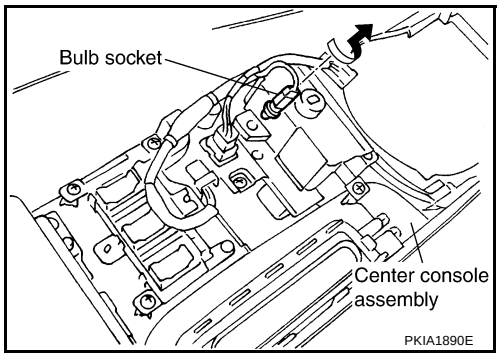
Bulb Replacement, Removal and Installation

AKS000VY

1. Remove center console assembly. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" 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.

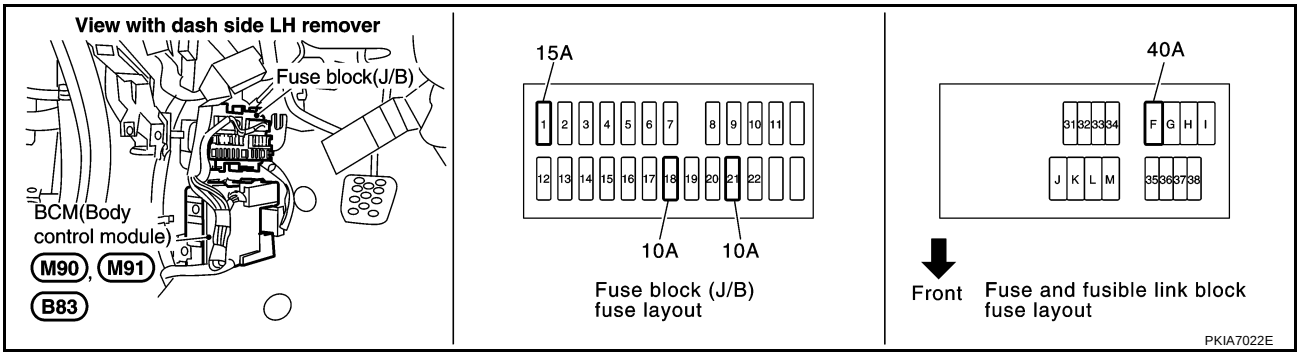


INTERIOR ROOM LAMP

PFP:26410

Component Parts and Harness Connector Location

AKS00ADS



System Description

AKS000W0

When map lamp switch is in DOOR position, map lamp ON/OFF is controlled by timer according to signals from switches including key switch, door switch driver side and assist side, unlock and lock signal from key fob, door lock and unlock switch, key cylinder lock and unlock switch, ignition switch.
When map lamp turns ON, there is a gradual brightening over 1 second. When map lamp turns OFF, there is a gradual dimming over 1 second.
map lamp timer is controlled by BCM (body control module).
Map lamp timer control settings can be changed with CONSULT-II.

POWER SUPPLY AND GROUND

Power is supplied at all times

- through 10A fuse [No.21, located in fuse block (J/B)]
- to key switch terminal 2
- through 10A fuse [No.18, located in fuse block (J/B)]
- to BCM (body control module) terminal 42
- through 40A fusible link [letter F, located in fuse and fusible link block]
- to BCM (body control module) terminal 55.

When key is removed from ignition key cylinder, power is interrupted

- through key switch terminal 1
- to BCM (body control module) terminal 37.

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

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

When room lamp and vanity mirror lamp power is supplied at times

- through BCM (body control module) terminal 41
- to map lamp terminal 3 (Coupe models)
- to map lamp terminal 2 (Roadster models)
- to luggage room lamp terminal 1 (Coupe models)
- to trunk room lamp terminal 1 (Roadster models)
- to vanity mirror lamp LH and RH terminal 1.

Ground is supplied

- to BCM (body control module) terminal 52
- through grounds M30 and M66.

When driver side door is opened, ground is supplied

- through case ground of driver side door switch
- to BCM (body control module) terminal 62.

When passenger side door is opened, ground is supplied

- through case ground of passenger side door switch

- to BCM (body control module) terminal 12.

When back door is opened, ground is supplied (Coupe models)

- through grounds B5, B6, D105 and T14
- to back door switch terminal 3
- from back door switch terminal 1
- to BCM (body control module) terminal 58.

When trunk hood is opened, ground is supplied (Roadster models)

- through grounds B5, B6 and T14
- to trunk room lamp switch terminal 2
- from trunk room lamp switch terminal 1
- to BCM (body control module) terminal 57.

When driver side door or passenger side door is unlocked by door lock and unlock switch, BCM (body control module) receives unlock signal with power window serial link

- through grounds M30 and M66
- to power window main switch (door lock and unlock switch) terminal 15 or power window sub switch (door lock and unlock switch) terminal 11
- from power window main switch (door lock and unlock switch) terminal 12 and power window sub switch (door lock and unlock switch) terminal 16
- to BCM (body control module) terminal 22.

When driver side door is unlocked by door key cylinder switch, BCM (body control module) receives information by communicating with power window main switch

- through grounds M30 and M66
- to door key cylinder switch terminal 2
- from door key cylinder switch terminal 1
- to power window main switch terminal 7
- from power window main switch (door lock and unlock switch) terminal 12
- to BCM (body control module) terminal 22.

When a signal, or combination of signals is received by BCM (body control module), ground is supplied

- through BCM (body control module) terminal 48
- to map lamp terminal 2 (Coupe models)
- to map lamp terminal 3 (Roadster models).

With power and ground are supplied, map lamp illuminates.

SWITCH OPERATION

When map lamp switch is ON, ground is supplied

- to map lamp terminal 1
- through grounds M30 and M66.

And power is supplied

- from BCM terminal 41
- to map lamp terminal 3 (Coupe models)
- to map lamp terminals 2 (Roadster models).

When vanity mirror lamp (LH and RH) is ON, ground is supplied

- to vanity mirror lamp terminal 2
- through grounds M30 and M66.

And power is supplied

- from BCM terminal 41
- to vanity mirror lamp terminal 1.

MAP LAMP TIMER OPERATION

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

In addition, when map lamp turns ON or OFF there is gradual brightening or dimming over 1 second.
Power is supplied

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

When all doors are closed (all door switches OFF) and key is removed from key cylinder (key switch OFF), power will not be supplied to BCM terminal 37.
Ground is supplied

- from BCM terminal 22
- to power window main switch (door lock and unlock switch) terminal 12.

At this time, BCM detects that driver door is unlocked. It determines that map lamp timer operation conditions are met, and turns map lamp ON for 30 seconds.
When all doors are closed (all door switches OFF) and key is in key cylinder (key switch ON),
Power is supplied

- through key switch terminal 1
- to BCM terminal 37.

When key is removed from key switch (key switch OFF), power supply to BCM terminal 37 is terminated. BCM detects that key has been removed. It determines that map lamp timer conditions are met, and turns map lamp ON for 30 seconds.
When driver door opens → closes, and key is not inserted in key switch (key switch OFF), BCM terminal 62 changes between 0V (door open) → 5V (door closed). BCM determines that conditions for spot lamp operation are met and turns interior lamp ON for 30 seconds.
Timer control is canceled under the following conditions.

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

INTERIOR LAMP BATTERY SAVER CONTROL

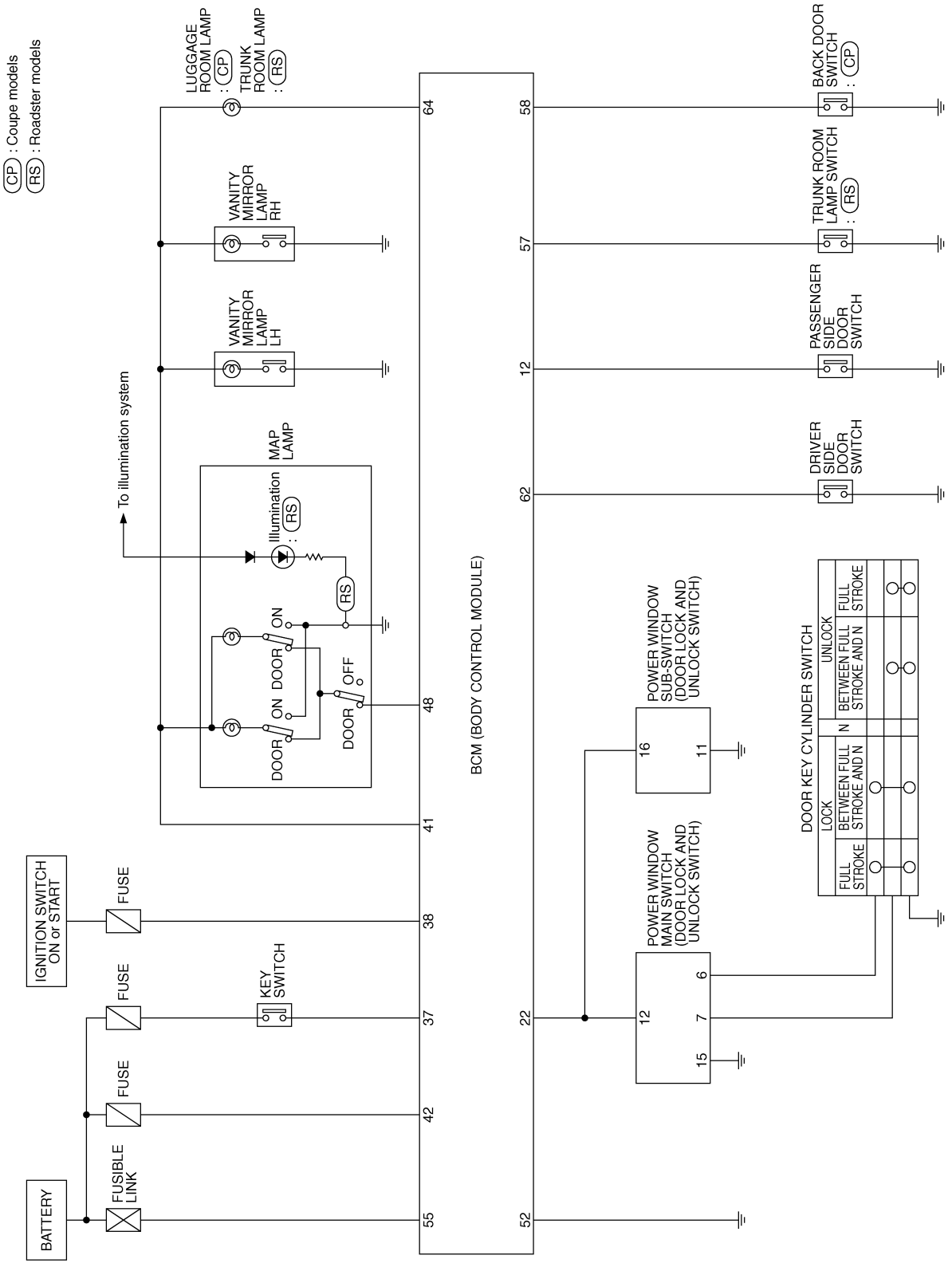
If room lamp remains illuminated by door switch open signal, or if room lamp switch is in ON position for more than 30 minutes after ignition switch is turned to OFF position, BCM will automatically turn off map lamp, step lamp, and/or personal lamp and vanity mirror lamp.
After lamps turn OFF by battery saver system, lamps illuminate again when

- signal from key fob, or door lock and unlock switch, or key cylinder is locked or unlocked,
- door is opened or closed,
- key is removed from ignition key cylinder or inserted in ignition key cylinder.

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

Schematic

AKS000W2

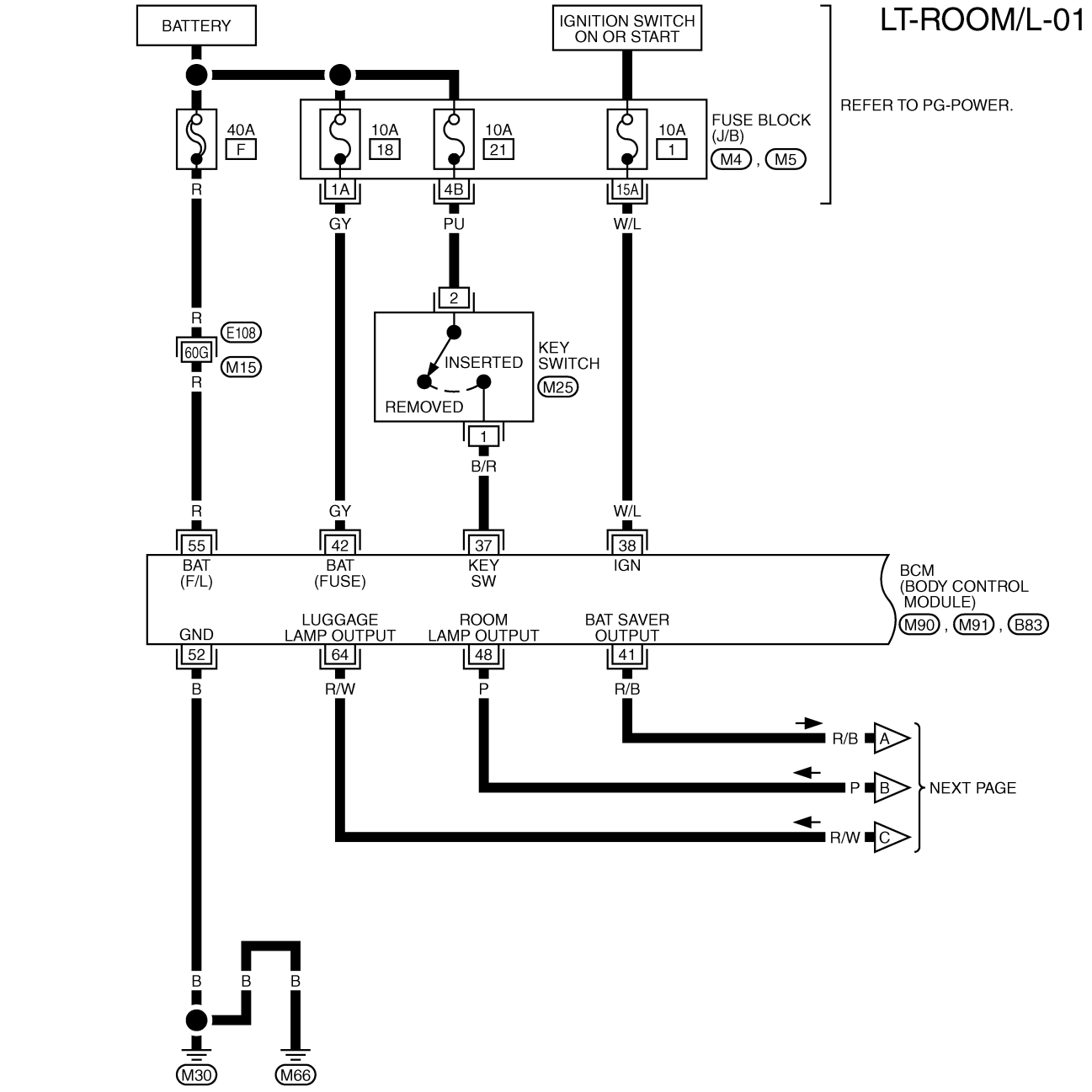


TKWT1816E

Wiring Diagram — ROOM/L —

AKS000W3

COUPE MODELS

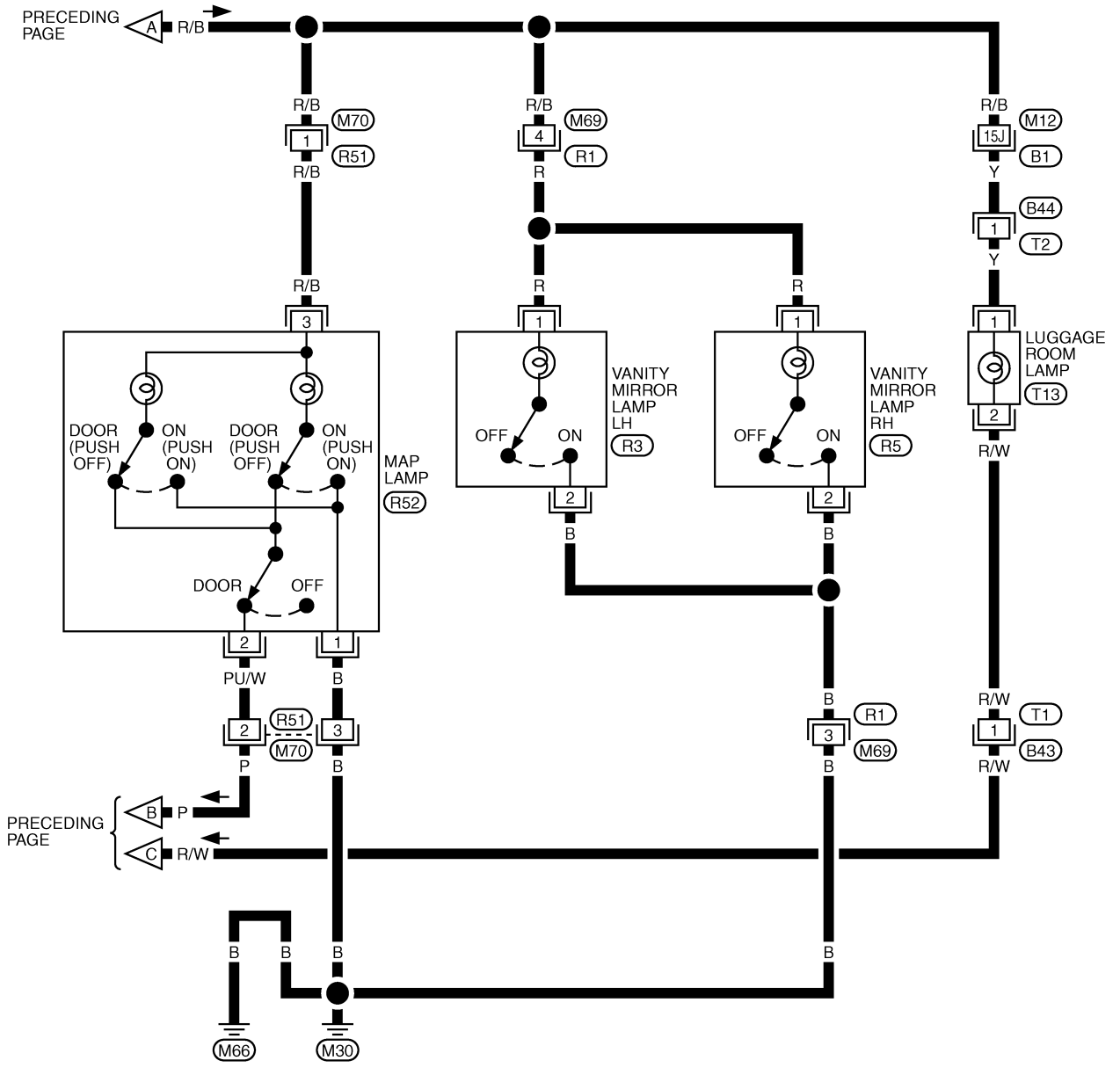


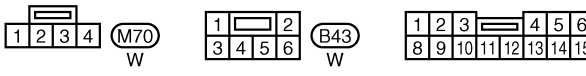
1 2 M25
BR

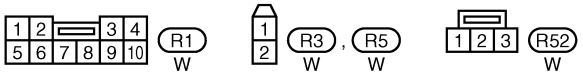
REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M4, M5 -FUSE BLOCK-JUNCTION BOX (J/B)
M90, M91, B83 -ELECTRICAL UNITS

TKWT1817E

LT-ROOM/L-02



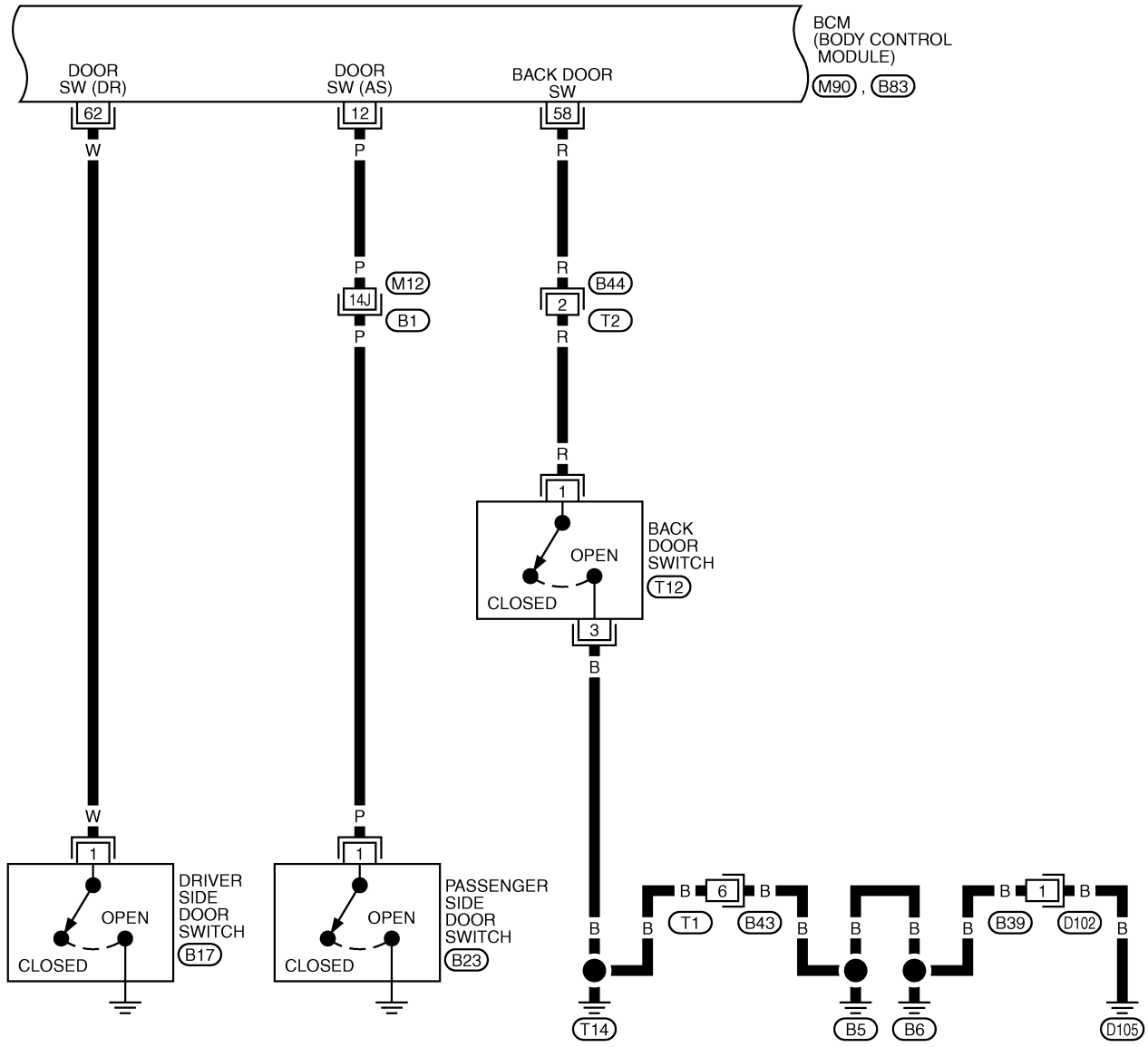


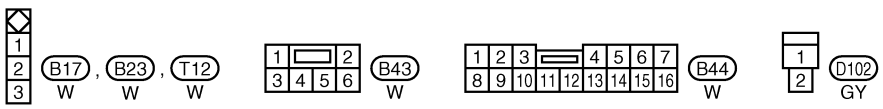


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)

TKWT1818E

LT-ROOM/L-03

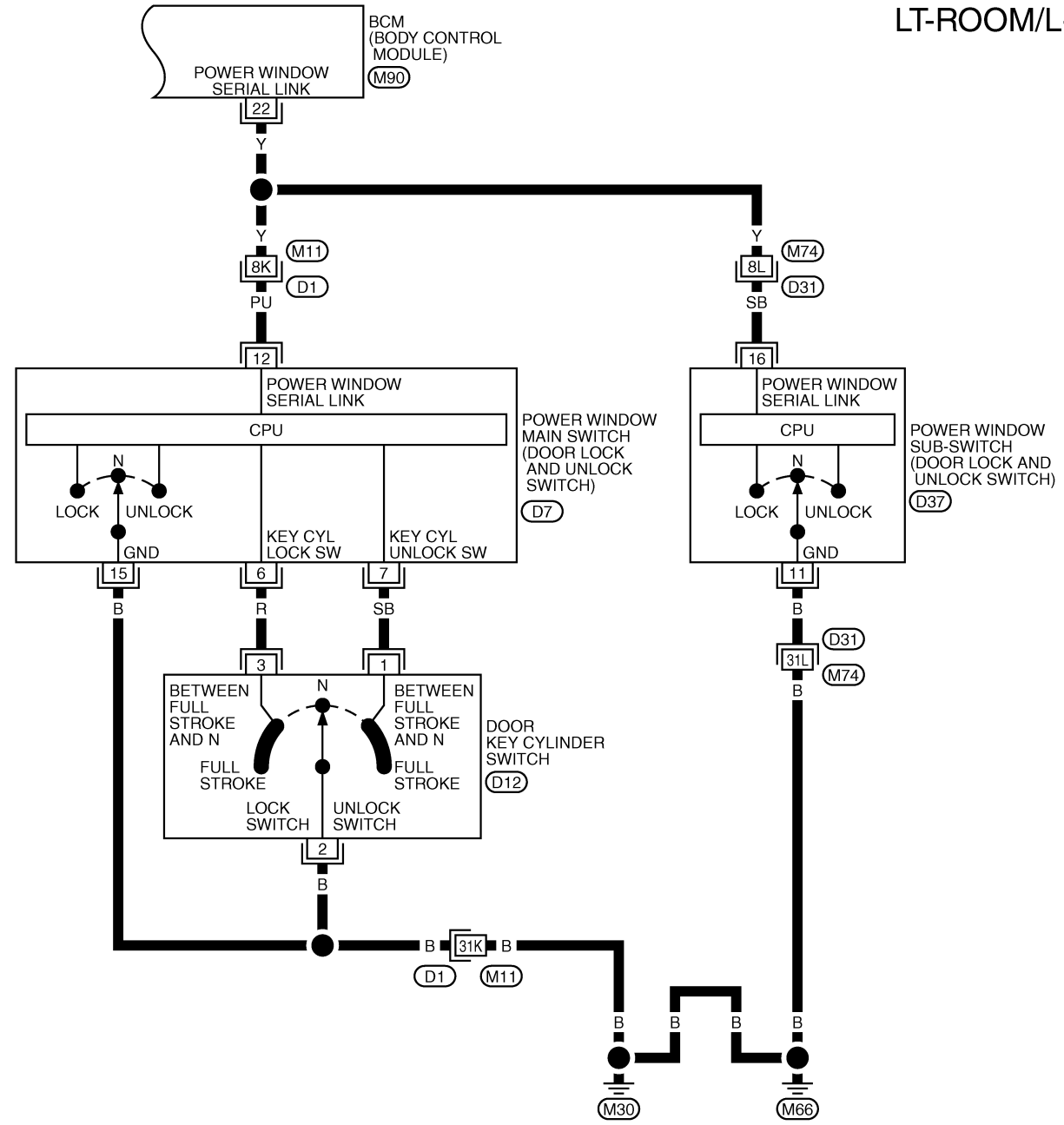


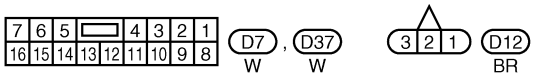


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M90 , B83 -ELECTRICAL UNITS

TKWT1819E

LT-ROOM/L-04





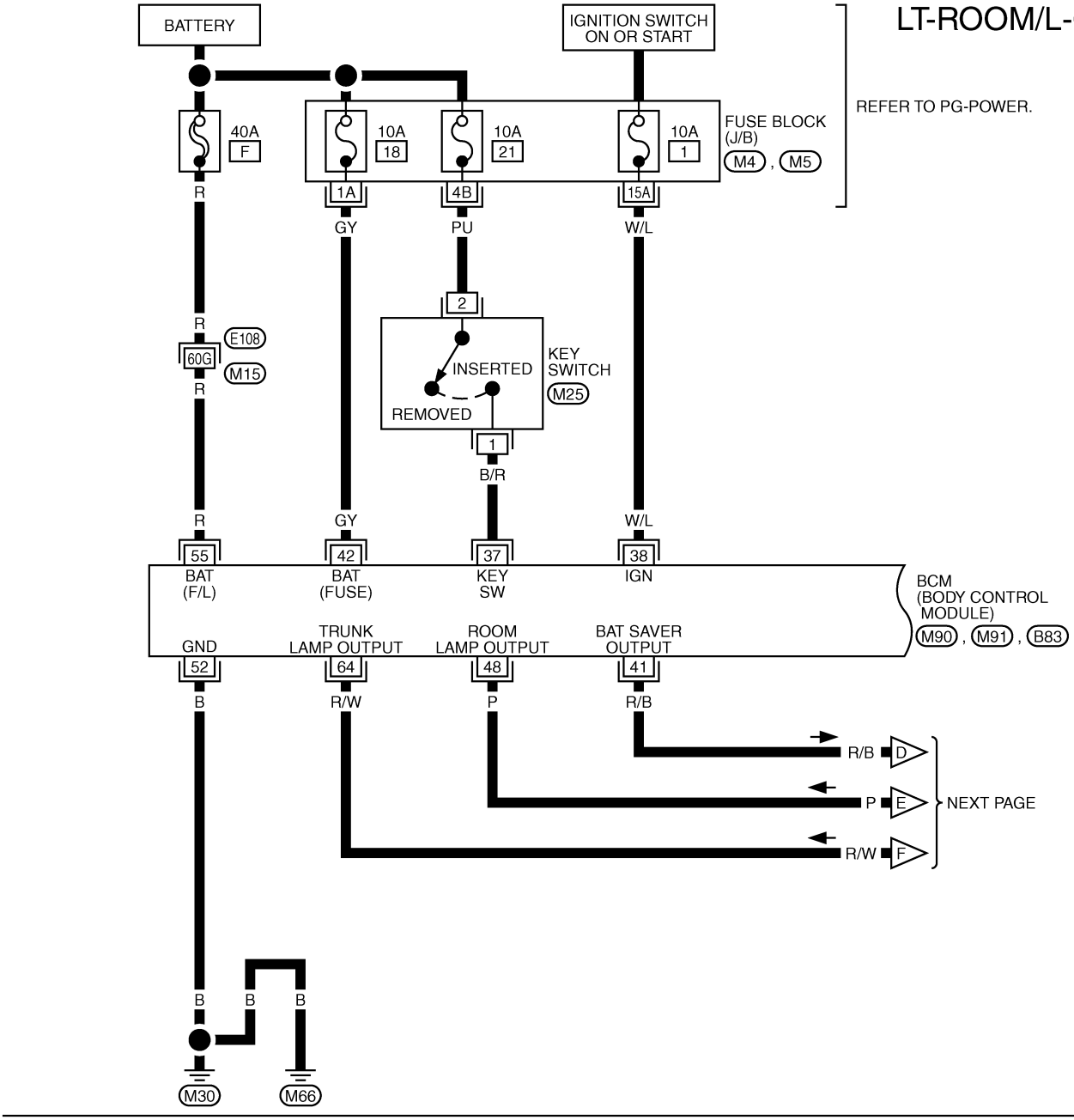
REFER TO THE FOLLOWING.

D1 , D31 -SUPER MULTIPLE JUNCTION (SMJ)

M90 -ELECTRICAL UNITS

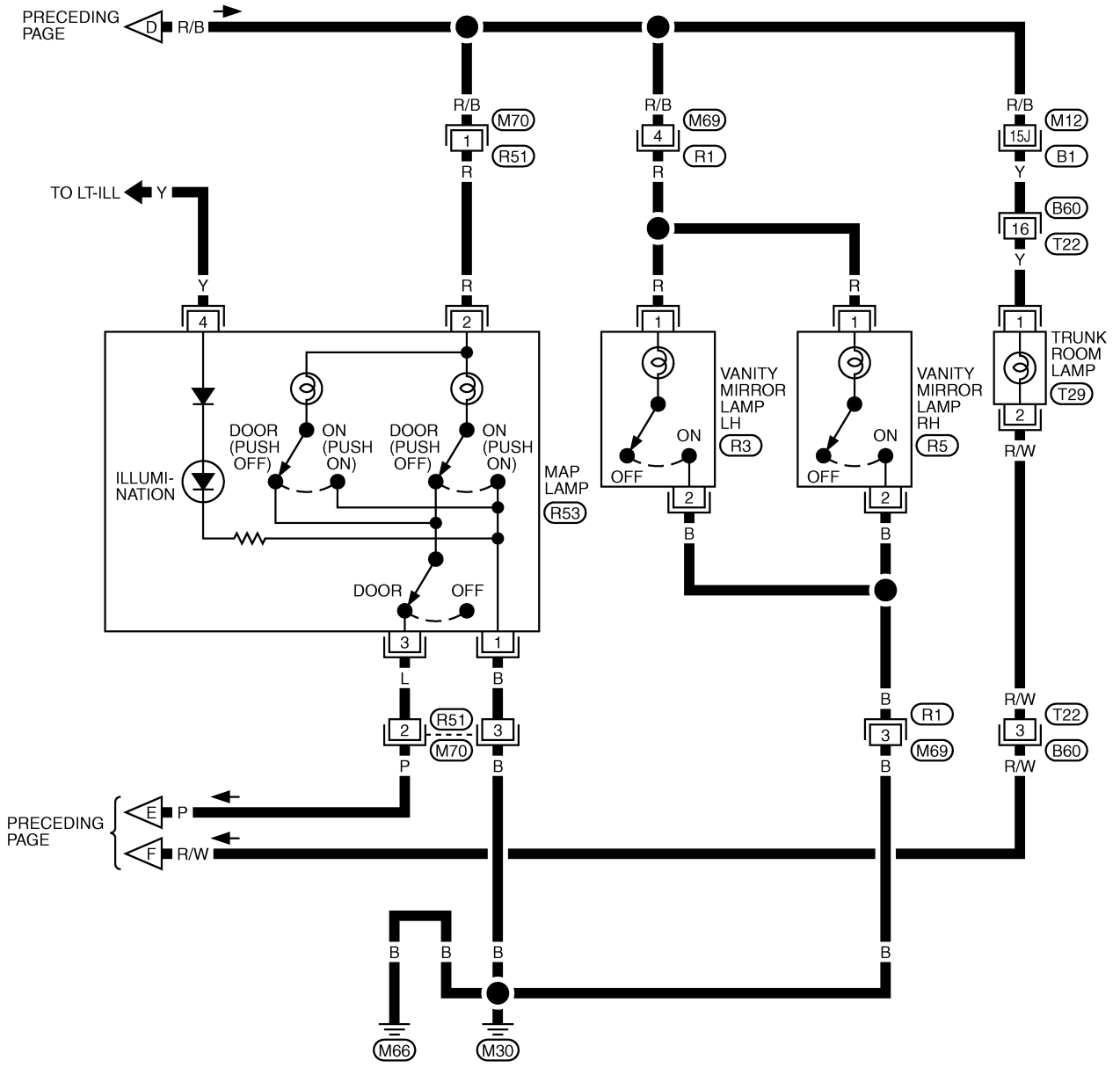
TKWT1820E

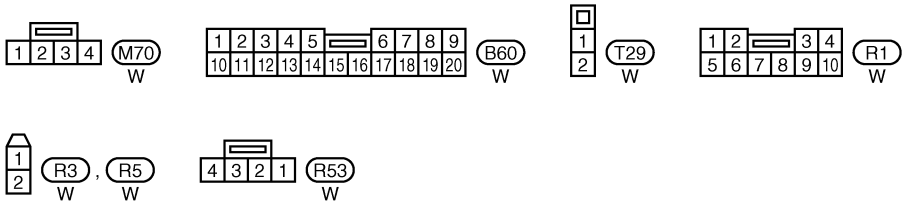
ROADSTER MODELS



TKWT1821E

LT-ROOM/L-06



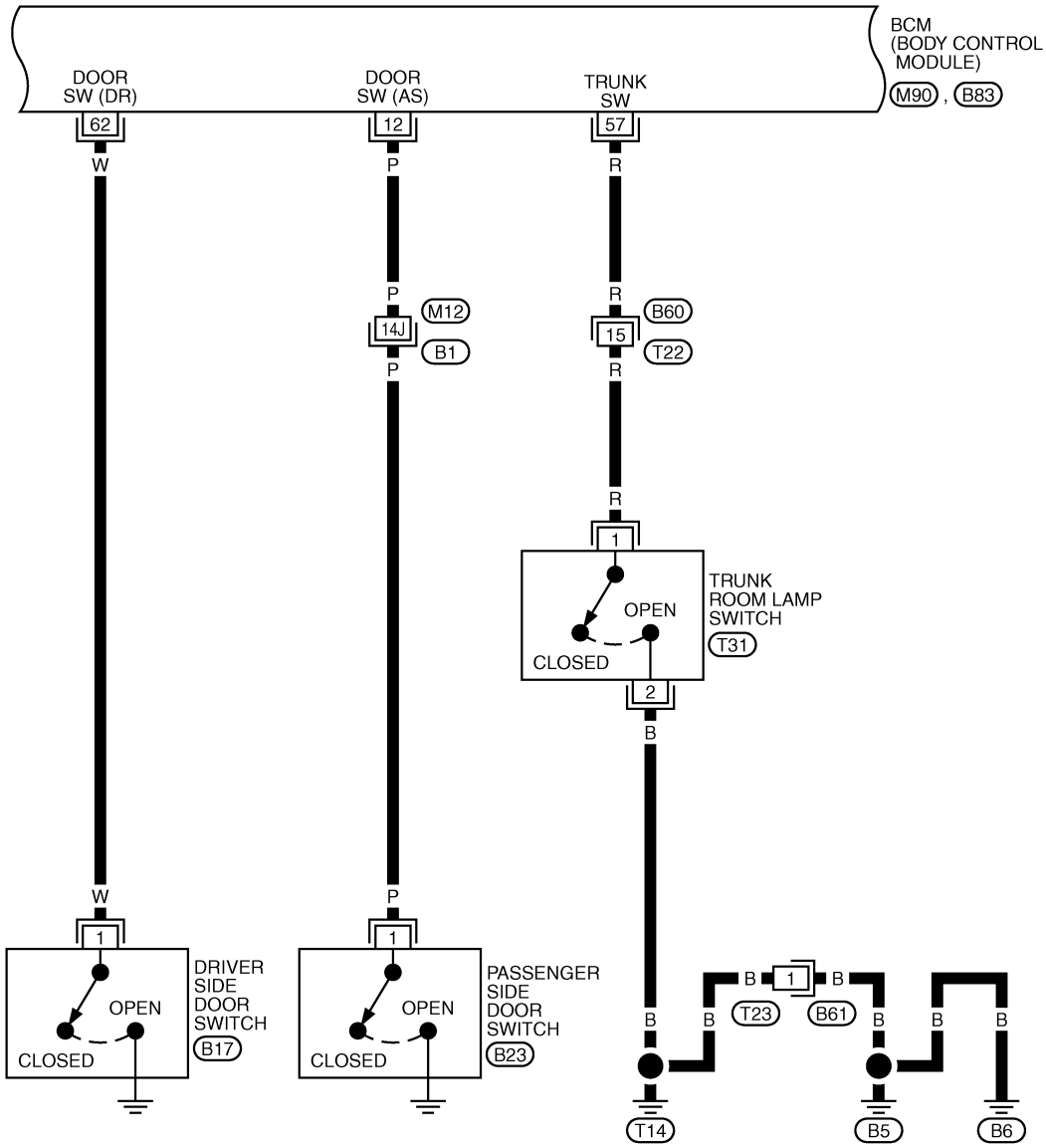


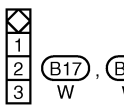
REFER TO THE FOLLOWING.

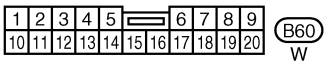
B1 -SUPER MULTIPLE JUNCTION (SMJ)

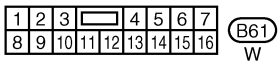
TKWT1822E

LT-ROOM/L-07





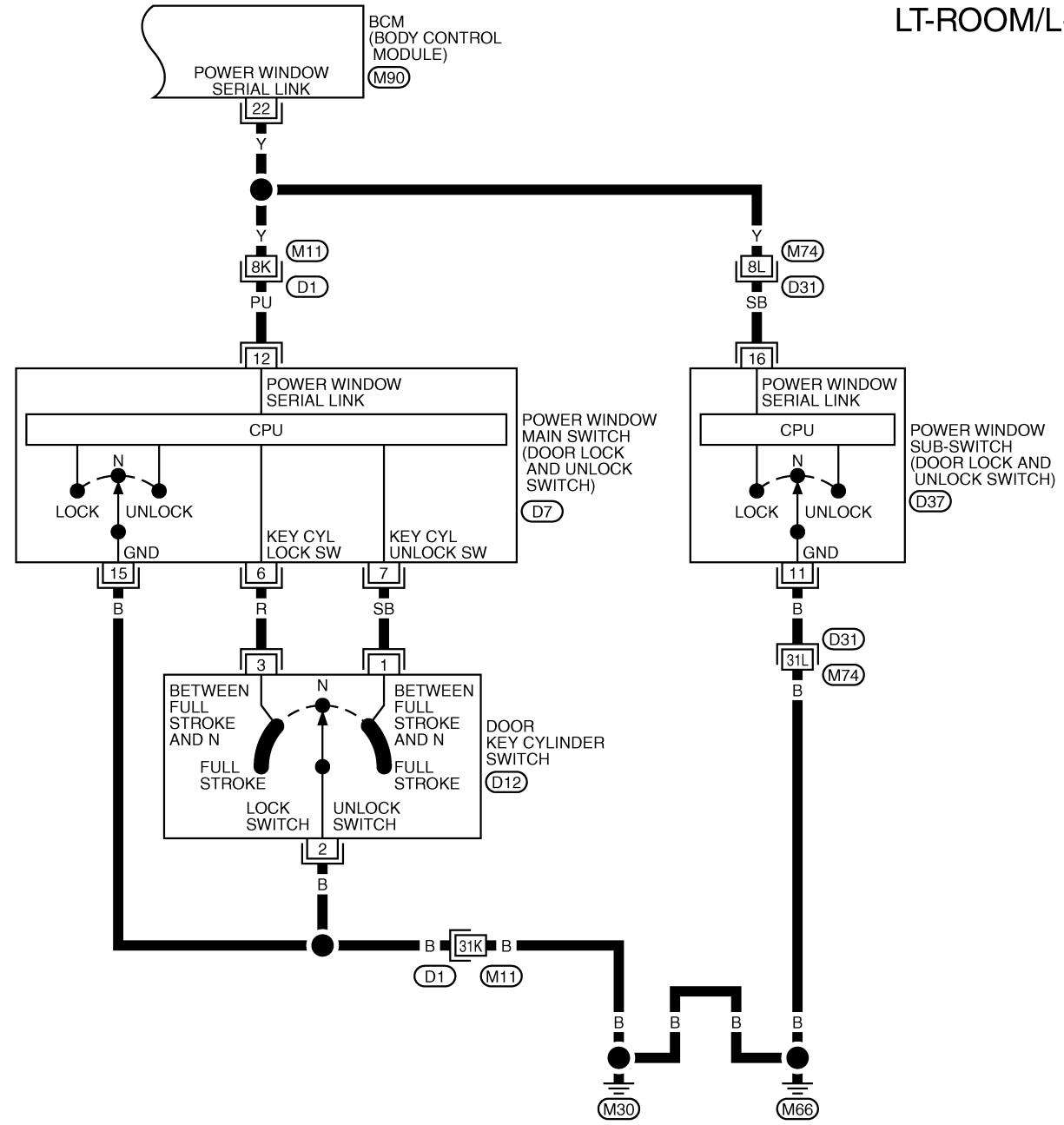


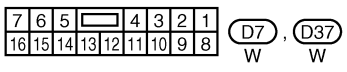


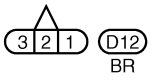
REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M90 , B83 -ELECTRICAL UNITS

TKWT1823E

LT-ROOM/L-08







REFER TO THE FOLLOWING.

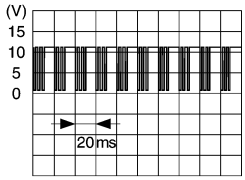
D1 , D31 -SUPER MULTIPLE JUNCTION (SMJ)

M90 -ELECTRICAL UNITS

TKWT1824E

Terminals and Reference Values for BCM

AKS00APE

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
12	P	Front door switch AS signal	OFF	Front door switch AS	ON (open)	Approx. 0V
					OFF (closed)	Battery voltage
22	Y	Power window switch serial link	ON	—		 PKIA7023E
37	B/R	Key-in detection switch signal	OFF	Vehicle key is removed.		Approx. 0V
				Vehicle key is inserted.		Battery voltage
38	W/L	Ignition power supply	ON	—		Battery voltage
41	R/B	Battery saver output signal	OFF	30 minutes after ignition switch is turned to OFF.		Approx. 0V
			ON	—		Battery voltage
42	GY	Battery power supply	OFF	—		Battery voltage
48	P	Interior room lamp, map lamp and front door inside handle illumination output signal	OFF	Interior door switch: DOOR position	Any door switch: ON (open)	Approx. 0V
					Any door switch: OFF (closed)	Battery voltage
52	B	Ground	ON	—		Approx. 0V
55	R	Battery power supply	OFF	—		Battery voltage
57*1	R	Trunk room lamp switch signal	OFF	Trunk room lamp switch	ON (open)	Approx. 0V
					OFF (closed)	Battery voltage
58*2	R	Back door switch signal	OFF	Luggage room lamp switch	ON (open)	Approx. 0V
					OFF (closed)	Battery voltage
62	W	Front door switch DR signal	OFF	Front door switch DR	ON (open)	Approx. 0V
					OFF (closed)	Battery voltage
64	R/W	Trunk room lamp*1 or back door*2 switch signal	OFF	Trunk room lamp*1 or back door*2 switch	ON (open)	Approx. 0V
					OFF (closed)	Battery voltage

*1: Roadster models, *2: Coupe models

How to Proceed with Trouble Diagnosis

AKS000W5

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-211, "System Description" .
3. Perform preliminary check. Refer to LT-224, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Does interior room lamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. INSPECTION END

Preliminary Check

AKS000W6

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown BCM fuses.

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

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

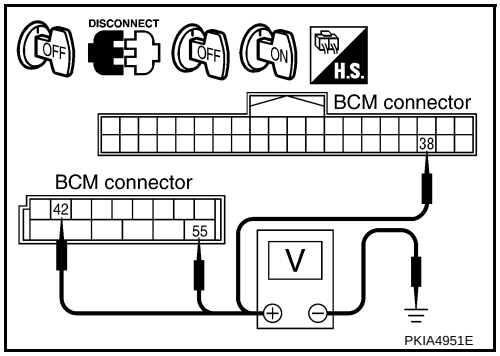
OK or NG

OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to 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 connector and ground.



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

OK or NG

OK >> GO TO 3.

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

3. CHECK GROUND CIRCUIT

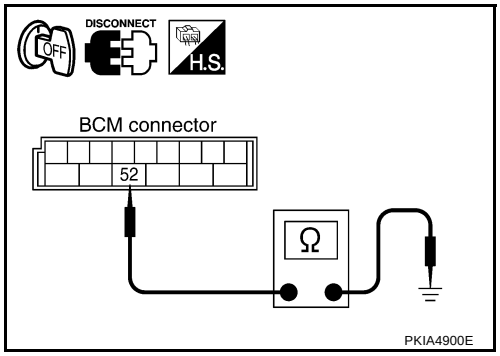
Check continuity between BCM and ground.

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

OK or NG

OK >> INSPECTION END

NG >> Check harness ground circuit.



CONSULT-II Functions

AKS00APF

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.

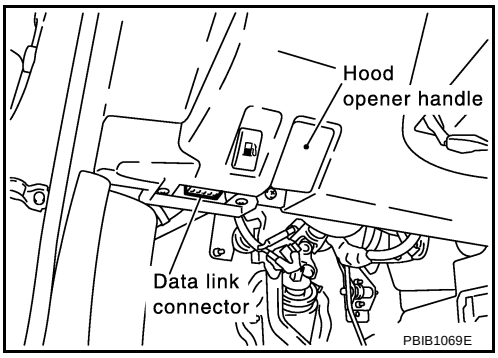
BCM diagnosis part	Check item, diagnosis mode	Description
INTERIOR LAMP	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending driving signal to them.

CONSULT-II BASIC OPERATION

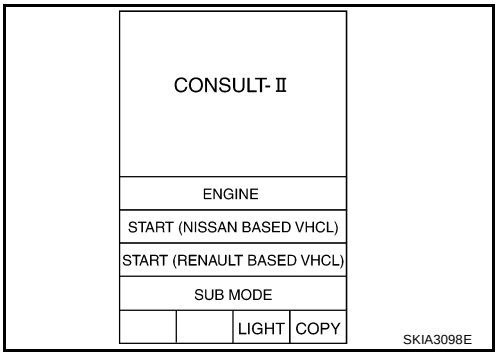
CAUTION:

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

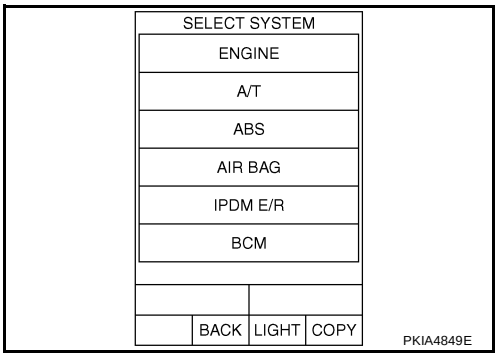
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



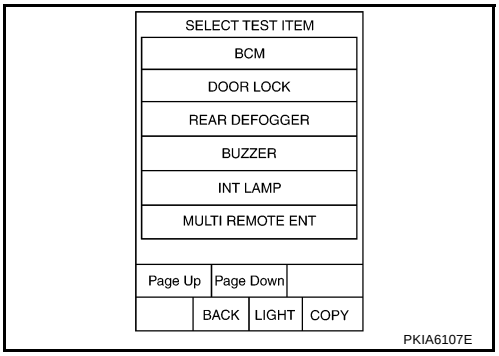
2. Touch “START (NISSAN BASED VHCL)”.



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



4. Touch “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 illumination can be selected when driver door is released (unlocked).	ON/OFF
ROOM LAMP ON TIME SET	The time in order to escalate illumination can be adjusted when interior room lamps and ignition keyhole illumination is turned on.	MODE 1 – 7
ROOM LAMP OFF TIME SET	The time in order to diminish illumination can be adjusted when interior room lamps and ignition keyhole illumination is turned off.	MODE 1 – 7

Reference between “MODE” and “TIME” for “TURN ON/OFF”

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

DATA MONITOR

Operation Procedure

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

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

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

Display Item List

Monitor item		Contents
IGN ON SW	“ON/OFF”	Displays “IGN position (ON)/OFF, ACC position (OFF)” judged from ignition switch signal.
KEY ON SW	“ON/OFF”	Displays “Key inserted (ON)/key removed (OFF)” status judged from key switch signal.

Monitor item		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.
2. Touch “ACTIVE TEST” on “SELECT DIAG MODE” screen.
3. Touch item to be tested and check operation of the selected item.
4. During the operation check, touching “BACK” deactivates the operation.

Display Item List

Test item	Description
INT LAMP	Map lamp can be operated by any ON-OFF operations.
IGN ILLUM[NOTE]	—
STEM LAMP TEST [NOTE]	—
LUGGAGE LAMP TEST	● Luggage room lamp can be operated by any ON-OFF operations. (Coupe models) ● Trunk room lamp can be operated by any ON-OFF operations. (Roadster models)

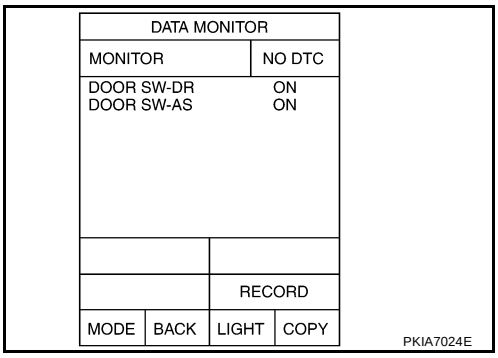
NOTE:
This item is displayed, but cannot monitor it.

Map Lamp Control Does Not Operate (Coupe models)

AKS009SI

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.



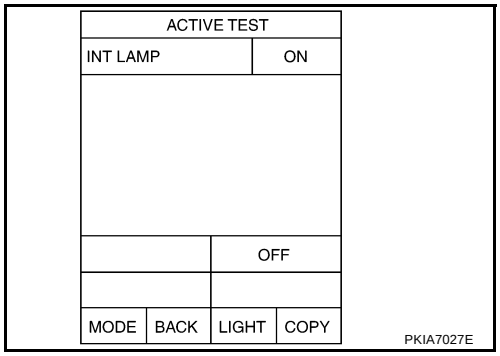
OK or NG

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

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

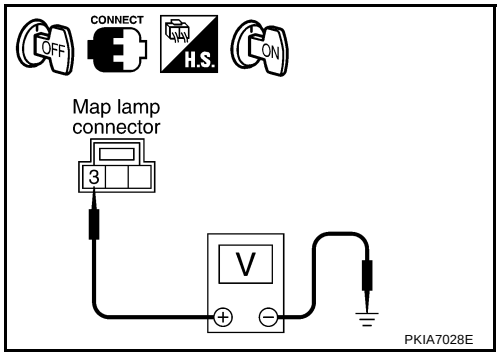
OK >> Replace BCM. Refer to BCS-17, "Removal and Installation of BCM" .

NG >> GO TO 3.

3. CHECK POWER SUPPLY CIRCUIT

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

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



OK or NG

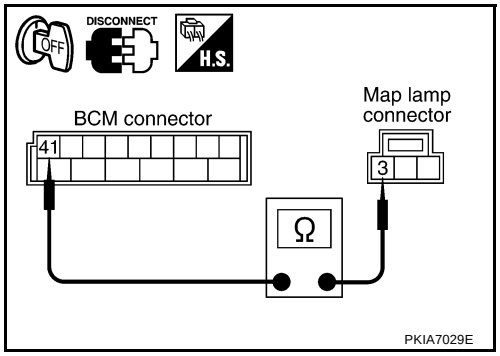
OK >> GO TO 6.

NG >> GO TO 4

4. CHECK MAP LAMP CIRCUIT

1. Disconnect BCM connector and map lamp connector.
2. Check continuity between BCM harness connector M91 terminal 41 (R/B) and map lamp harness connector R52 terminal 3 (R/B).

41 (R/B) – 3 (R/B) : Continuity should exist.



OK or NO

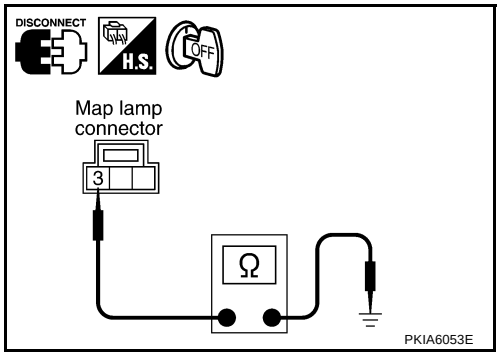
OK >> GO TO 5.

NG >> Repair harness or connector.

5. CHECK SHORT CIRCUIT

Check continuity between map lamp harness connector R52 terminal 3 (R/B) and ground.

3 (R/B) – Ground : Continuity should not exist.



OK or NG

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

NG >> After repairing harness, be sure to disconnect battery negative cable, and then reconnect it.

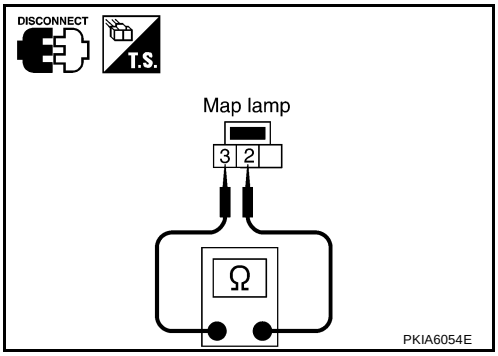
6. CHECK MAP LAMP

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

Terminal		Condition	Continuity
Map lamp			
3	2	Map lamp switch is DOOR.	Yes
		Map lamp switch is OFF.	No

OK or NG

OK >> GO TO 7.
NG >> Replace map lamp



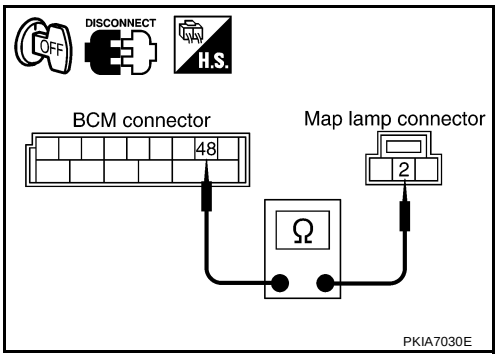
7. CHECK MAP LAMP CIRCUIT

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 BCS-17, "Removal and Installation of BCM" .
NG >> Repair harness or connector.



Map Lamp Control Does Not Operate (Roadster models)

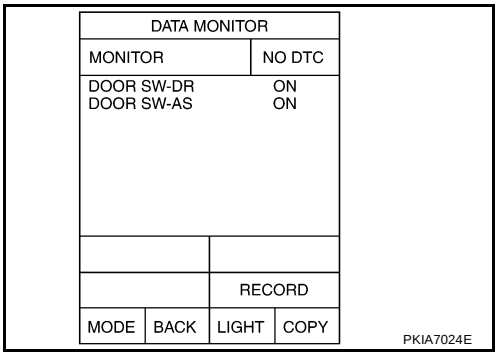
AKS009SJ

1. CHECK BETWEEN EACH SWITCH AND BCM

Select BCM on CONSULT-II. Use “INT LAMP” data monitor to check that switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-226, "Display Item List" for switches and their functions.

OK or NG

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



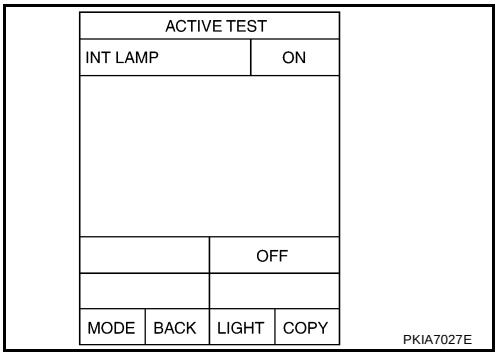
2. CHECK BETWEEN BCM AND MAP LAMP

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

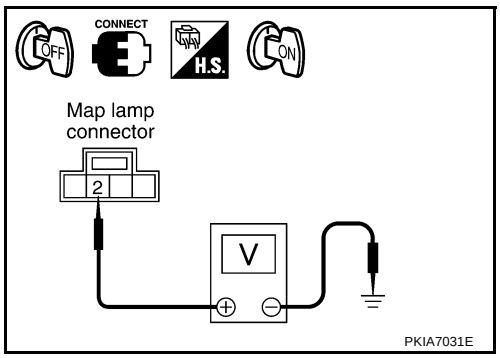
OK >> Replace BCM. Refer to BCS-17, "Removal and Installation of BCM" .
NG >> GO TO 3.



3. CHECK BETWEEN BCM AND MAP LAMP

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

2 (R) – Ground : Battery voltage should exist.



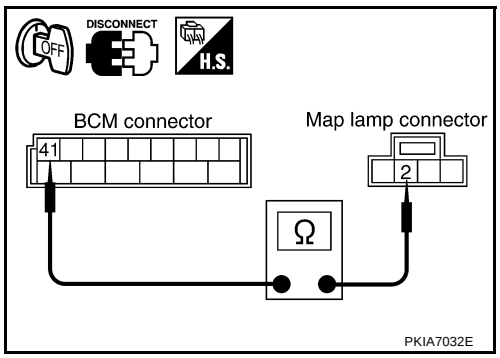
OK or NG

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

4. CHECK POWER SUPPLY CIRCUIT

1. Disconnect BCM connector and map lamp connector.
2. Check continuity between BCM harness connector M91 terminal 41 (R/B) and map lamp harness connector R53 terminal 2 (R).

41 (R/B) – 2 (R) : Continuity should exist.



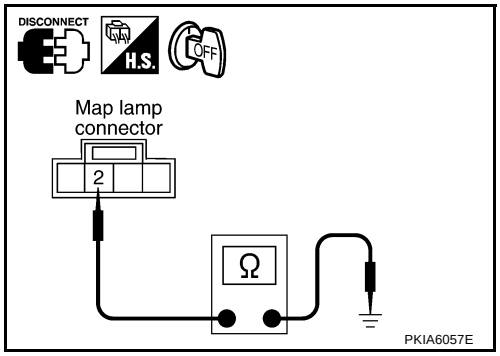
OK or NO

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

5. CHECK SHORT CIRCUIT

Check continuity between map lamp harness connector R53 terminal 2 (R) and ground.

2 (R) – Ground : Continuity should not exist.



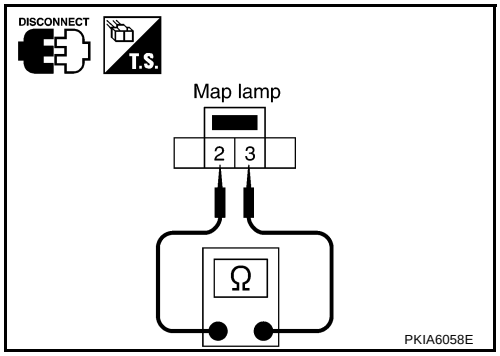
OK or NG

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

6. CHECK MAP LAMP

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

Terminal		Condition	Continuity
Map lamp			
2	3	Map lamp switch is DOOR.	Yes
		Map lamp switch is OFF.	No



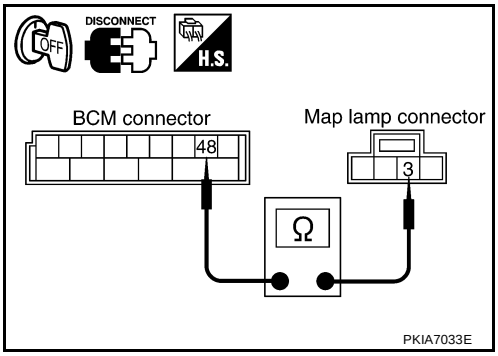
OK or NG

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).

48 (P) – 3 (L) : Continuity should exist.



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)

AKS00AT6

1. CHECK BULB

Inspect bulb of luggage room lamp.

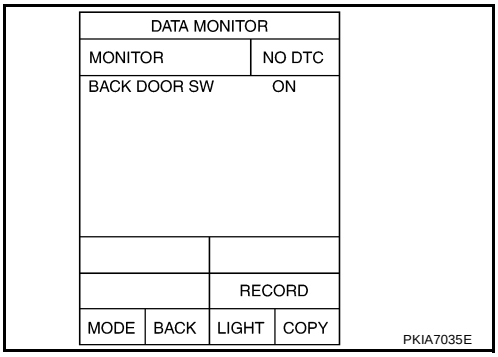
OK or NG

OK >> GO TO 2.

NG >> Replace bulb of luggage room lamp.

2. CHECK BETWEEN BACK DOOR SWITCH AND BCM

Select BCM on CONSULT-II. Use “INT LAMP” data monitor to make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-226, "Display Item List" for switches and their functions.



OK or NG

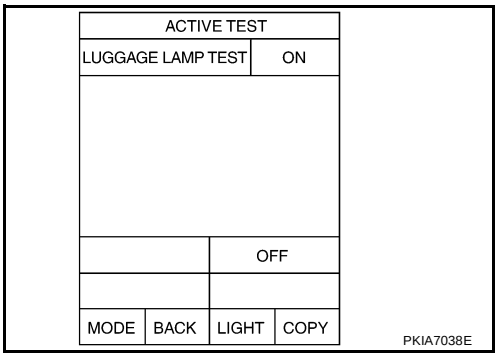
OK >> GO TO 3.

NG >> Inspect malfunctioning switch system.

3. CHECK BETWEEN BCM AND LUGGAGE ROOM LAMP

1. Select “BCM” on CONSULT-II. Select “LAGGUAGE LAMP TEST” active test.
2. Make sure luggage room lamp operates.

Luggage room lamp should operate.



OK or NG

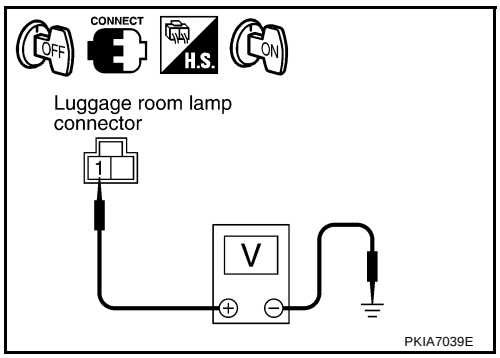
OK >> Replace BCM. Refer to BCS-17, "Removal and Installation of BCM" .

NG >> GO TO 4.

4. CHECK POWER SUPPLY CIRCUIT

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

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



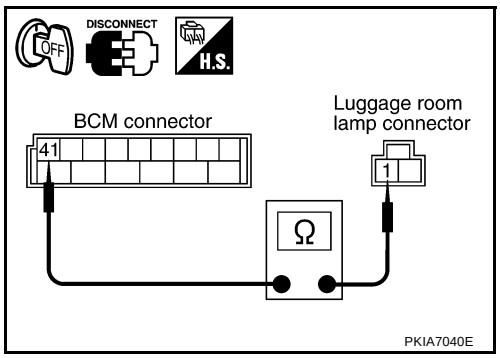
OK or NG

OK >> GO TO 7.
NG >> GO TO 5.

5. CHECK LUGGAGE ROOM LAMP CIRCUIT

1. Disconnect BCM connector and luggage room lamp connector.
2. 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.



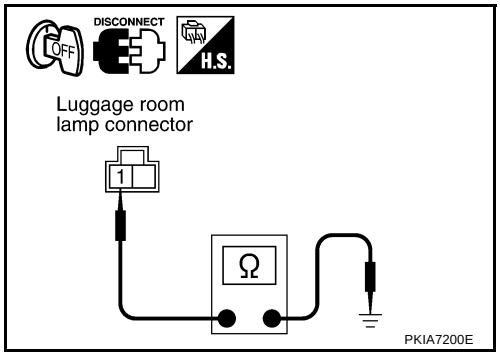
OK or NO

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.



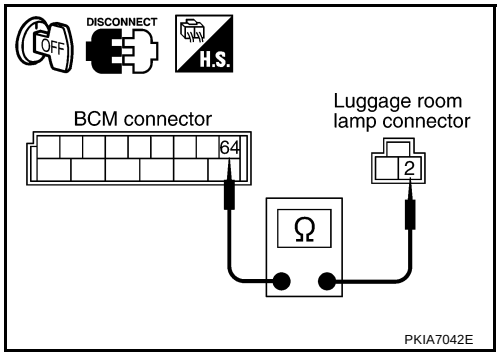
OK or NG

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

7. CHECK LUGGAGE ROOM LAMP CIRCUIT

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

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 BCS-17, "Removal and Installation of BCM" .
NG >> Repair harness or connector.

Trunk Room Lamp Does Not Illuminate (Roadster Models)

AKS00AT7

1. CHECK BULB

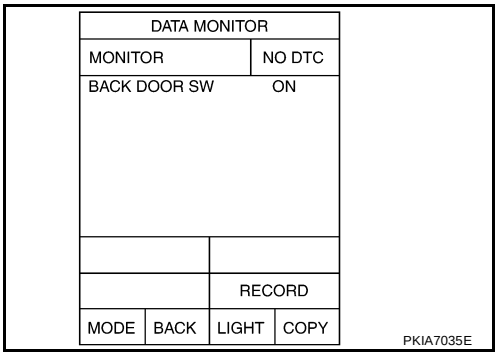
Inspect bulb of trunk room lamp.

OK or NG

OK >> GO TO 2.
NG >> Replace map lamp

2. CHECK BETWEEN BACK DOOR SWITCH AND BCM

Select BCM on CONSULT-II. Use “INT LAMP” data monitor to check that switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-226, "Display Item List" for switches and their functions.



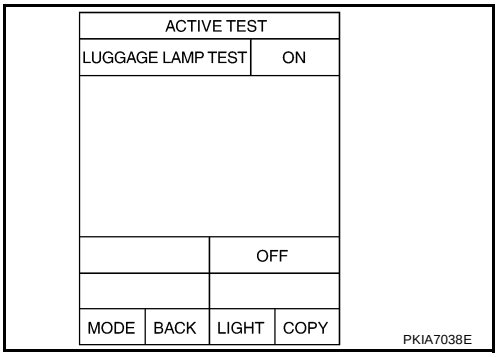
OK or NG

OK >> GO TO 3.
NG >> Inspect malfunctioning switch system.

3. CHECK BETWEEN BCM AND TRUNK ROOM LAMP

1. Select “BCM” on CONSULT-II. Select “LUGGAGE LAMP TEST” active test.
2. Make sure trunk room lamp operates.

Trunk room lamp should operate.



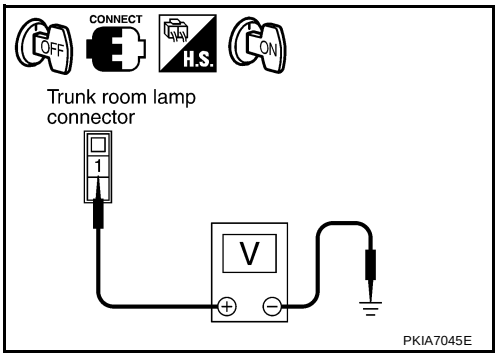
OK or NG

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

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.

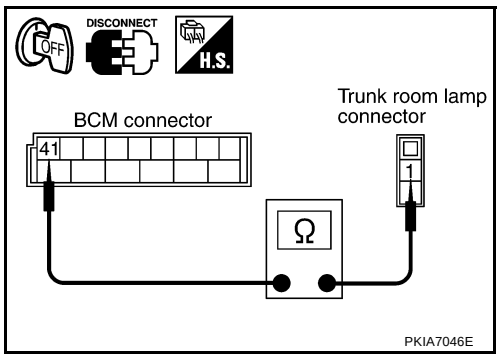
5. CHECK TRUNK ROOM LAMP CIRCUIT

1. Disconnect BCM connector and trunk room lamp connector.
2. 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.



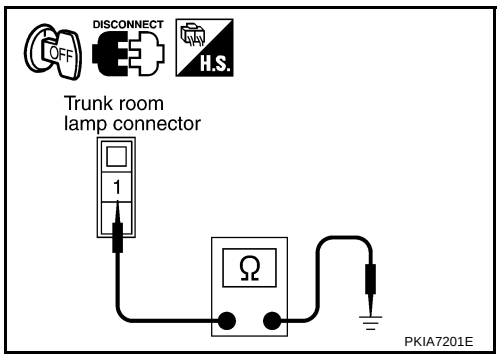
6. CHECK SHORT CIRCUIT

Check continuity between trunk room lamp harness connector T29 terminal 1 (Y) and ground.

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

OK or NG

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



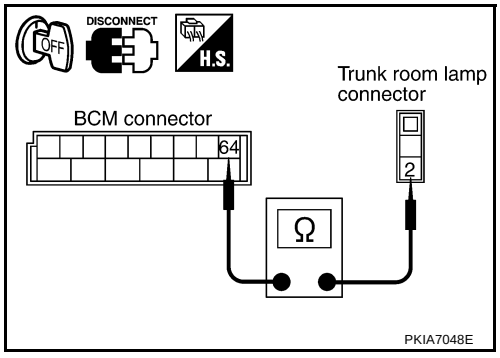
7. CHECK TRUNK ROOM LAMP CIRCUIT

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

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 BCS-17, "Removal and Installation of BCM" .
NG >> Repair harness or connector.



Bulb Replacement

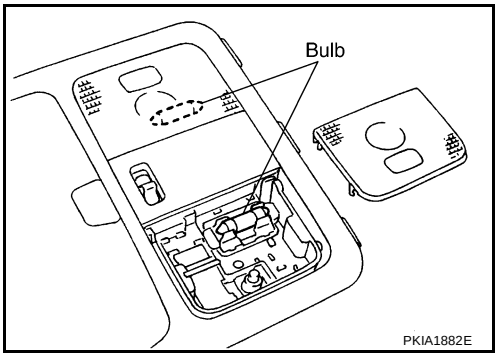
AKS00999

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.

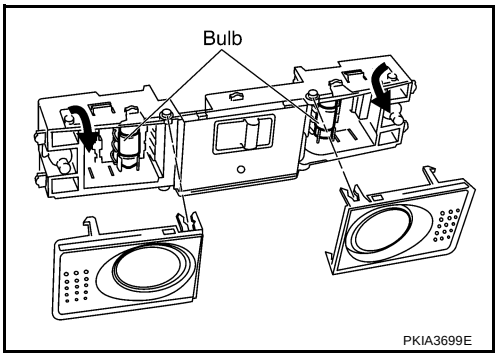


ROADSTER MODELS

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.

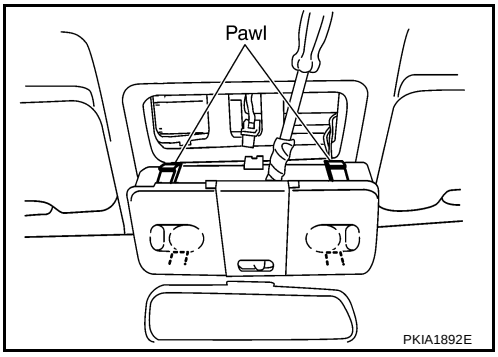


Removal and Installation

AKS0099A

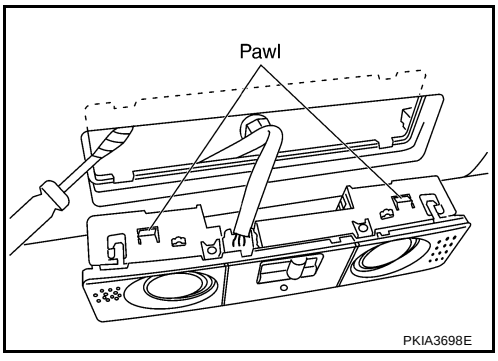
REMOVAL (COUPE MODELS)

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



REMOVAL (ROADSTER MODELS)

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



INSTALLATION

Install in the reverse order of removal.

ILLUMINATION

PFP:27545

System Description

AKS009QH

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

Power is supplied at all times

- through 10A fuse [No.71, located in IPDM E/R (intelligent power distribution module engine room)]
- to tail lamp relay [located in IPDM E/R (intelligent power distribution module engine room)]
- through 15A fuse [No.78, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)].

Power is also supplied at all times

- through 40A fusible link (letter F, located in fuse and fusible link block)
- to BCM (body control module) terminal 55
- through 10A fuse [No.18, located in fuse block (J/B)]
- to BCM (body control module) terminal 42
- through 10A fuse [No.19, located in fuse block (J/B)]
- to unified meter and A/C amp. terminal 21
- through 10A fuse [No.19, located in fuse block (J/B)]
- to combination meter terminal 24.

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

- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)]
- to BCM (body control module) terminal 38
- through 10A fuse [No.1, located in fuse block (J/B)]
- through 10A fuse [No.12, located in fuse block (J/B)]
- to unified meter and A/C amp. terminal 22.

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

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

Ground is supplied

- to BCM (body control module) terminal 52
- through grounds M30 and M66
- to IPDM E/R (intelligent power distribution module engine room) terminals 38 and 60
- through grounds E17, E43 and F152
- to unified meter and A/C amp. terminals 29 and 30
- through grounds M30 and M66.

ILLUMINATION OPERATION BY LIGHTING SWITCH

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

- through terminal 22 of IPDM E/R
- to NAVI control unit terminal 9 (With navigation system),
- to NAVI switch terminal 2 (With navigation system),
- to VDC off switch (illumination) terminal 3 (with VDC),
- to TCS off switch (illumination) terminal 3 (with TCS),
- to A/T device A/T illumination terminal 3 (With A/T),
- to hazard switch (illumination) terminal 3,

- to map lamp (illumination) terminal 4 (Roadster models)
- to ashtray illumination terminal 1 (With ashtray),
- to heated seat switch (driver side) (illumination) terminal 5 (With heated seat),
- to heated seat switch (passenger side) (illumination) terminal 5 (With heated seat),
- to luggage floor box lamp terminal 1,
- to soft top switch (illumination) terminal 5 (Roadster model),
- to audio unit terminal 8.

Ground is supplied at all times

- to luggage floor box lamp terminal 2,
- through grounds D105, B5, B6, and T14 (Coupe model),
- through grounds B5, B6 and T14 (Roadster model),
- to ashtray illumination terminal 2 (With ashtray),
- to map lamp (illumination) terminal 1 (Roadster models),
- through grounds M30 and M66
- to soft top switch (illumination) terminal 6 (Roadster models),
- to hazard switch (illumination) terminal 4,
- to VDC off switch (illumination) terminal 4 (With VDC),
- to TCS off switch (illumination) terminal 4 (With TCS),
- to A/T device (A/T illumination) terminal 5 (With A/T),
- to NAVI switch terminal 3 (With navigation system),
- to audio unit terminal 7,
- to heated seat switch (driver side) (illumination) terminal 6 (With heated seat),
- to heated seat switch (passenger side) (illumination) terminal 6,
- through combination meter terminal 18,
- to combination meter terminals 10, 11 and 12,
- through grounds M30 and M66.

With power and ground supplied, illumination lamps illuminate.

EXTERIOR LAMP BATTERY SAVER CONTROL

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

CAN Communication System Description

AKS009QI

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

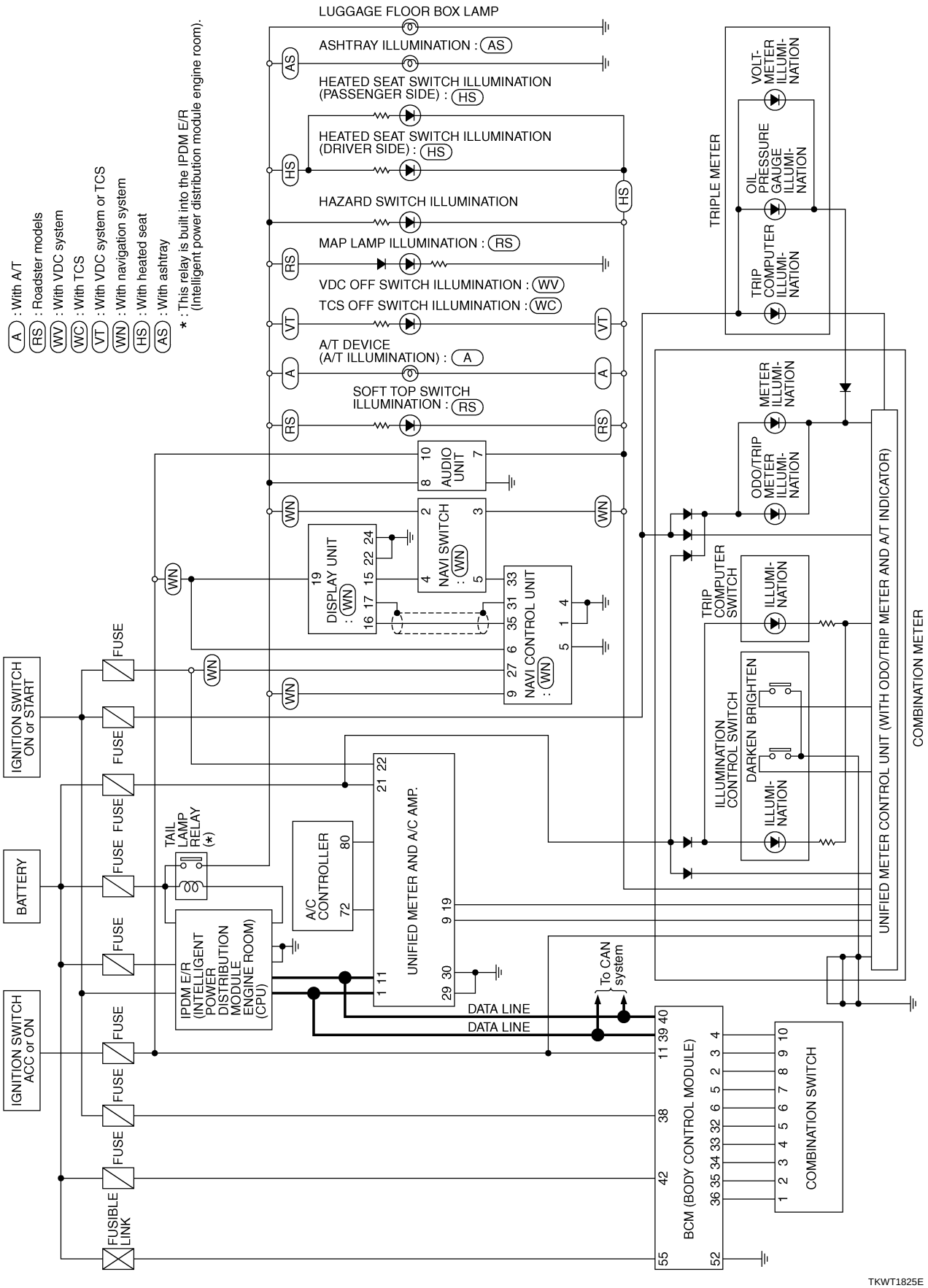
CAN Communication Unit

AKS009QJ

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

Schematic

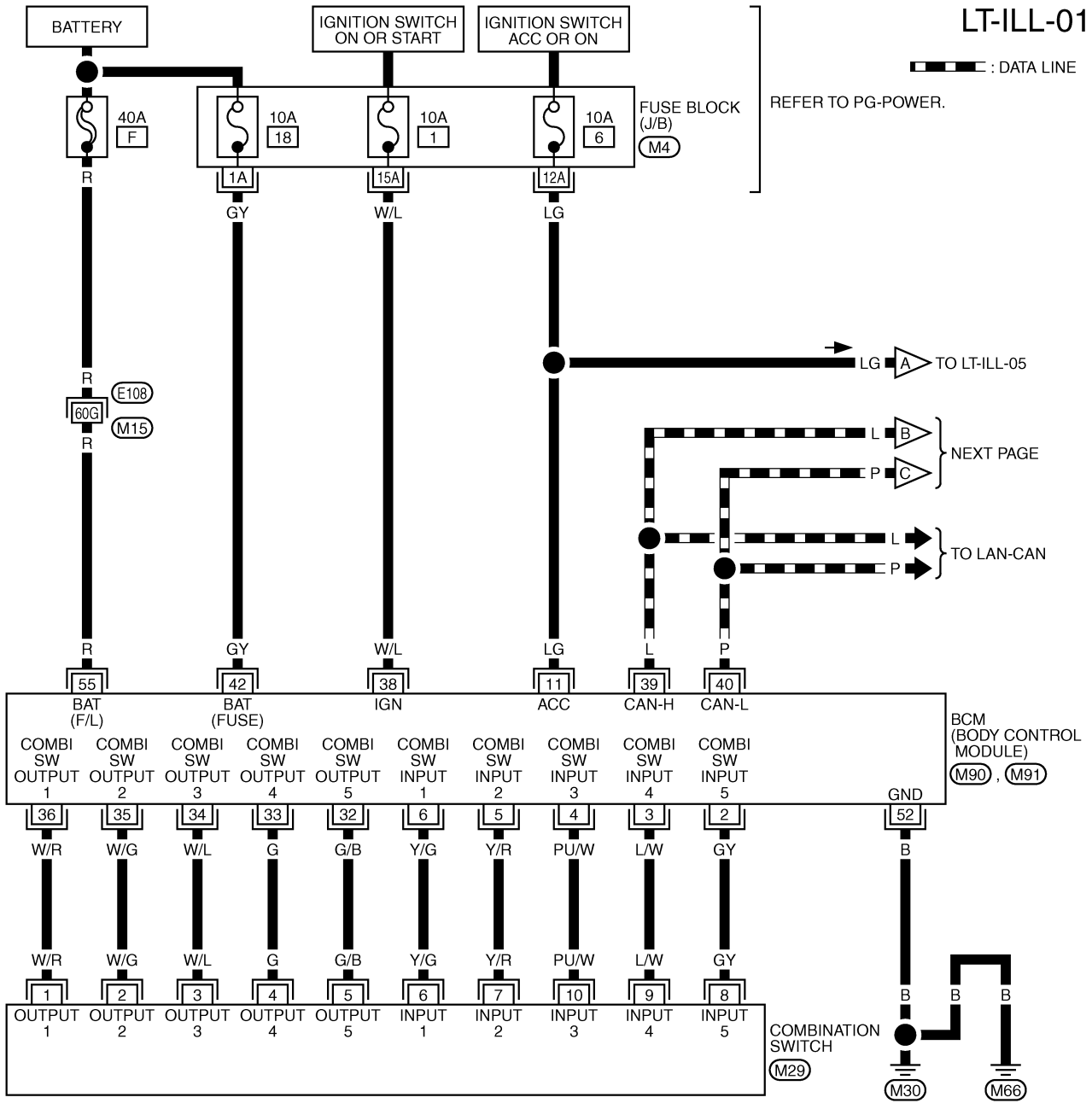
AKS009QK



TKWT1825E

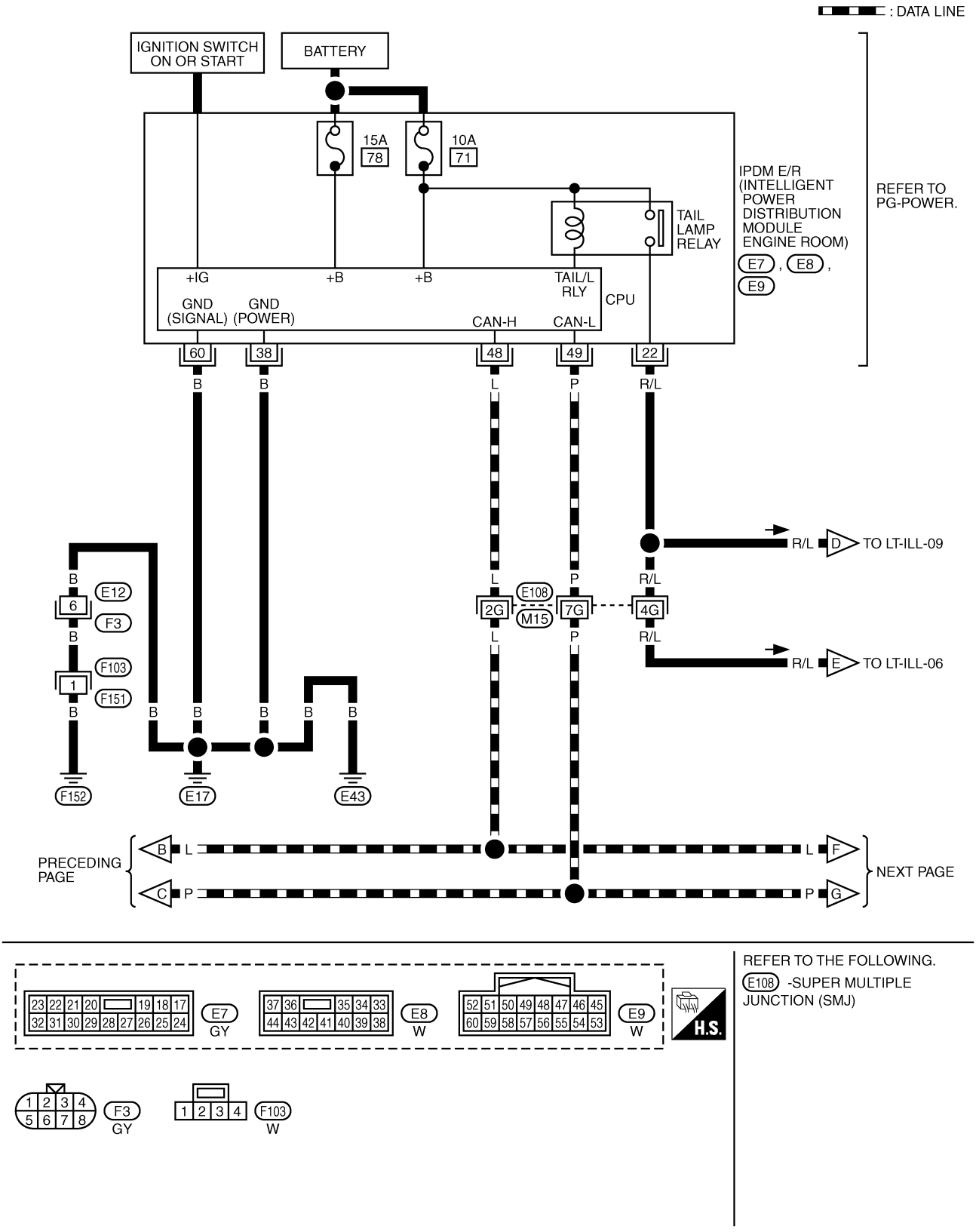
Wiring Diagram — ILL —

AKS009QL

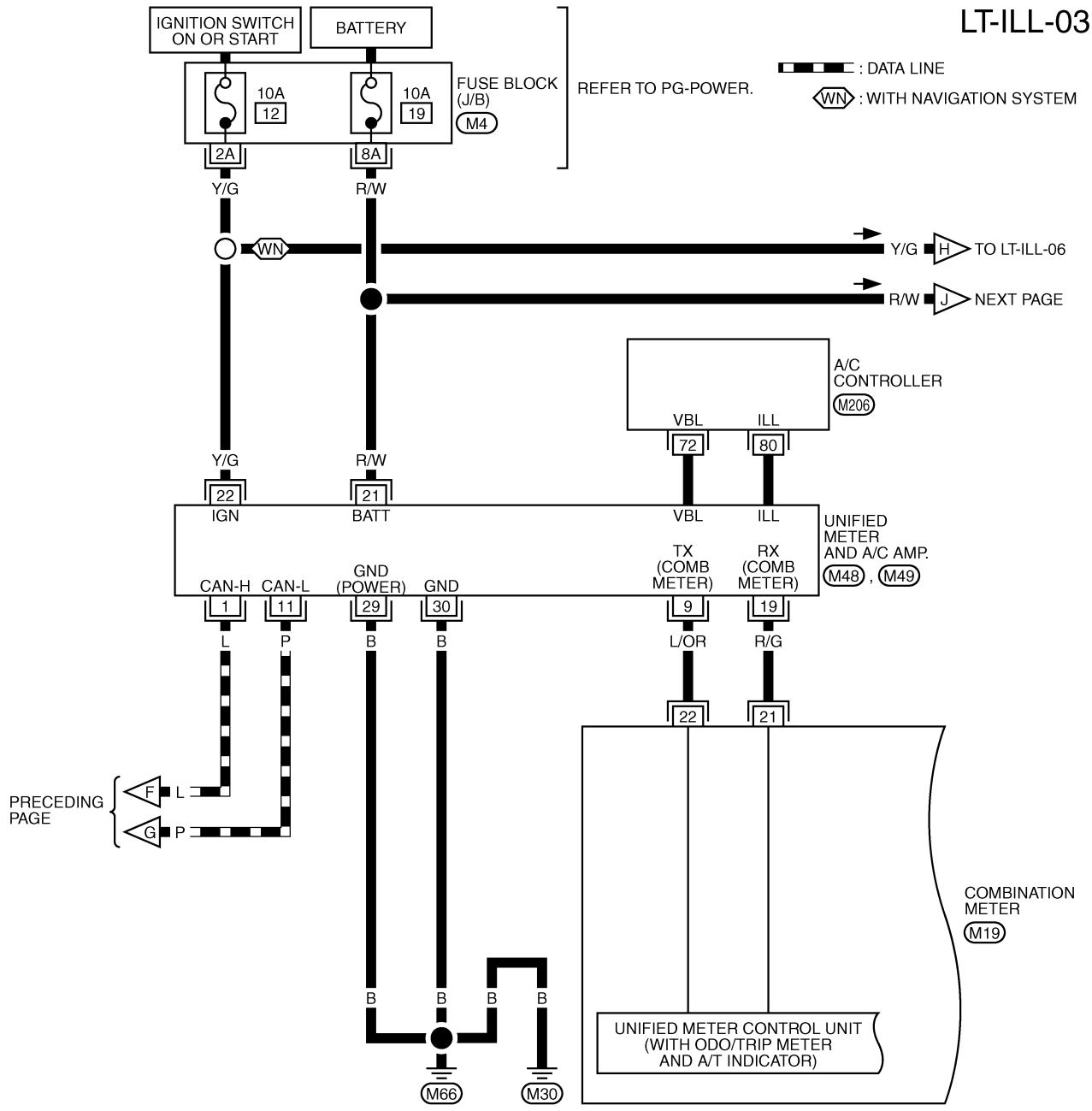


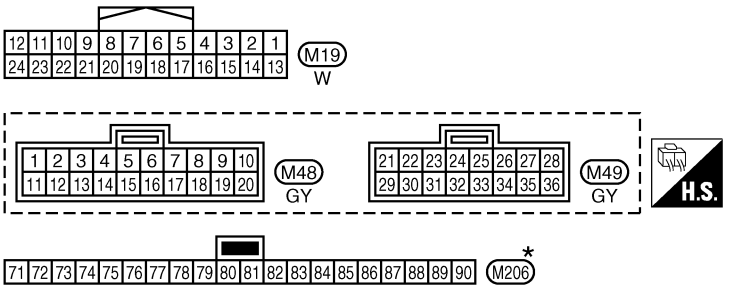
TKWT1826E

LT-ILL-02



TKWT1827E

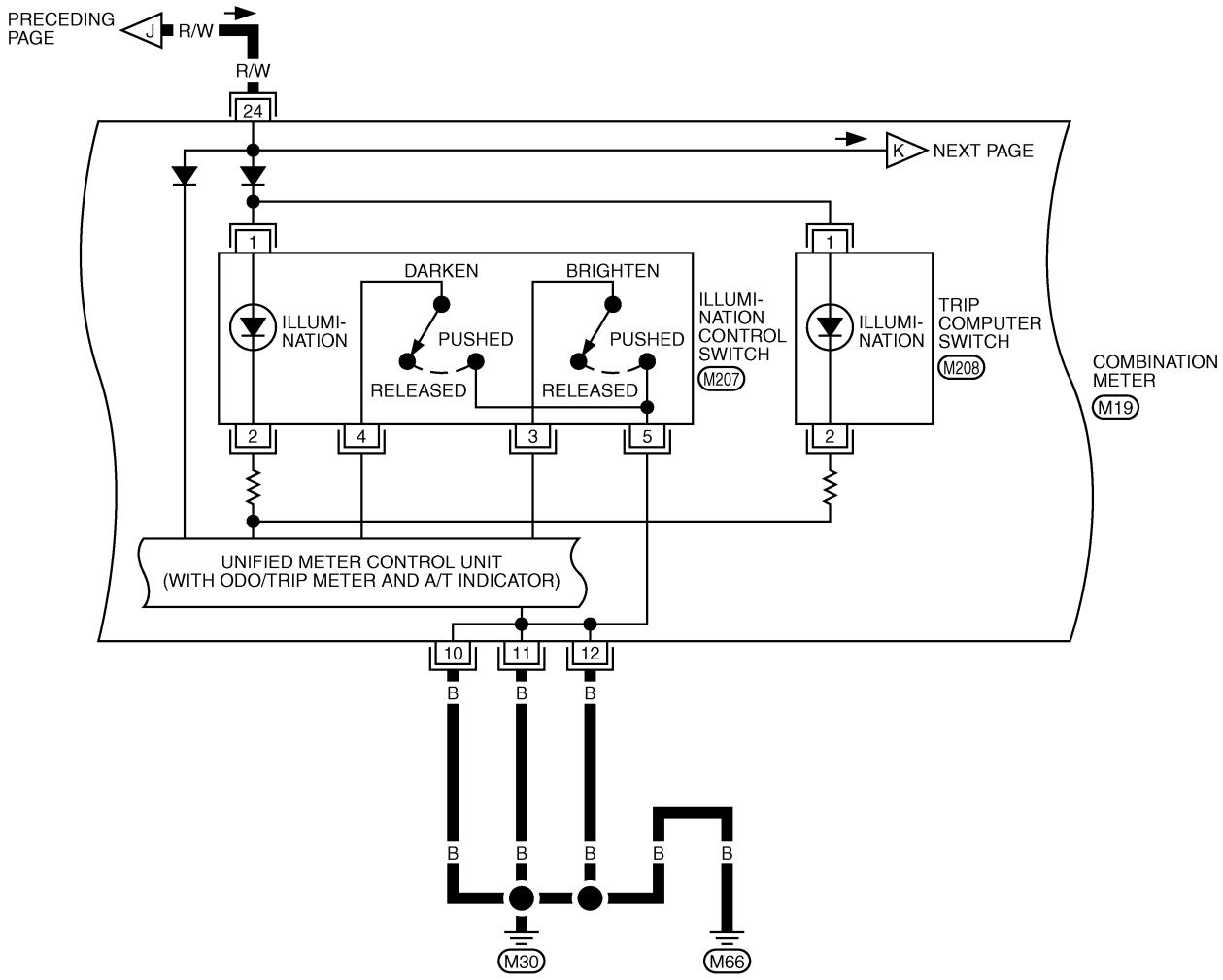


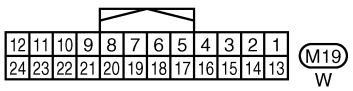


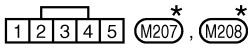
REFER TO THE FOLLOWING.
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT1828E

LT-ILL-04



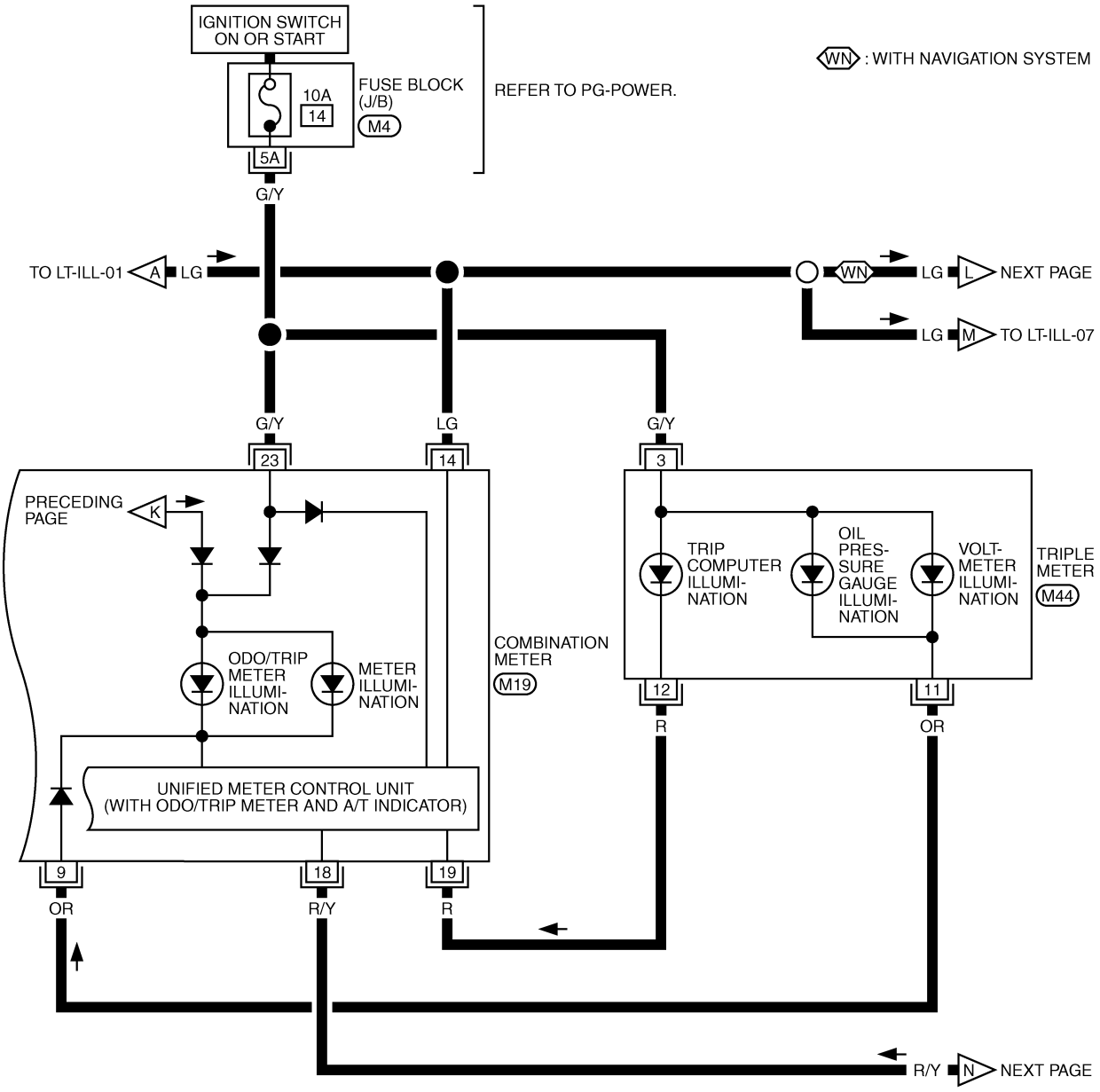


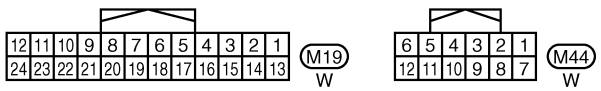


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT1829E

LT-ILL-05

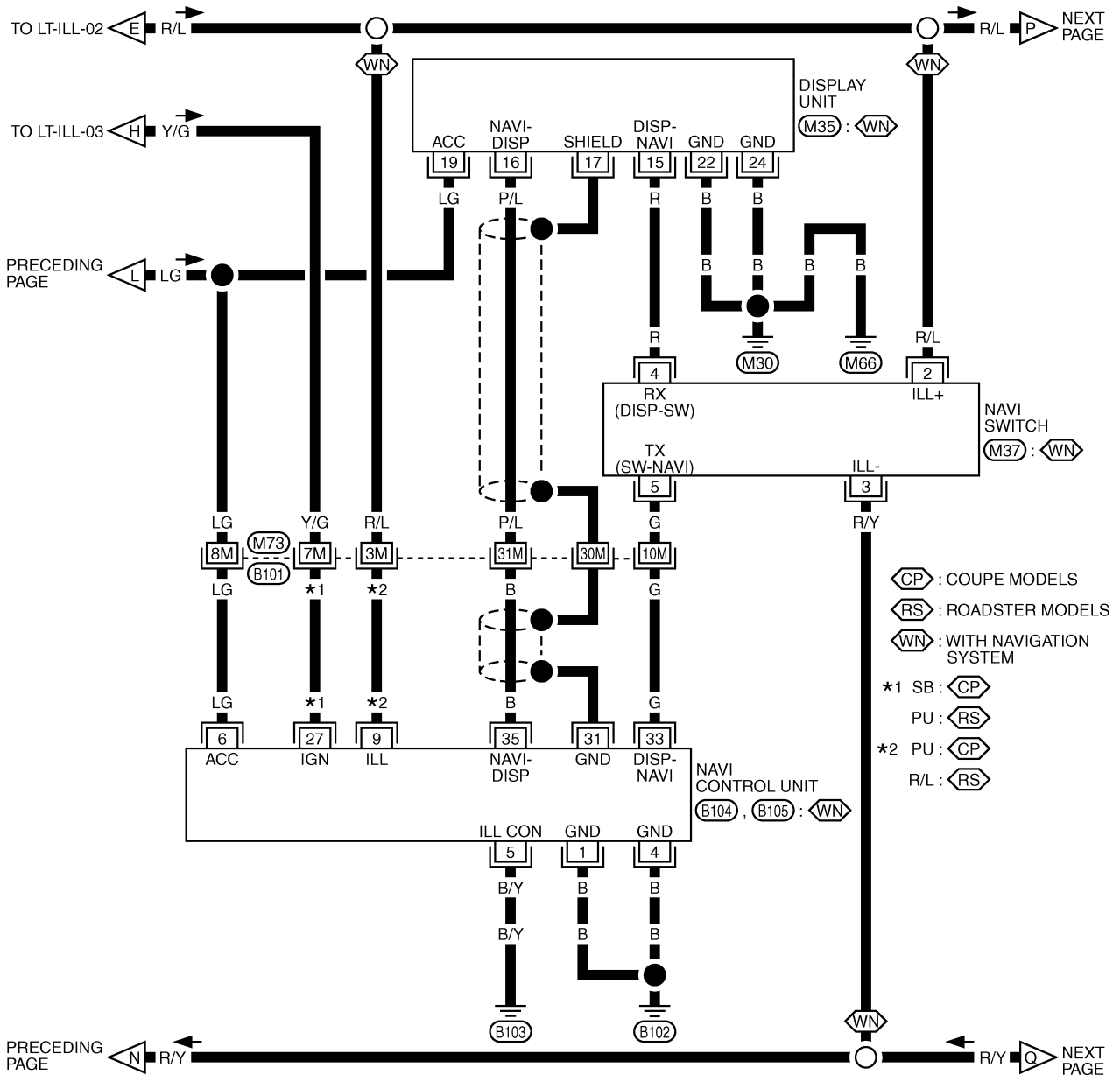


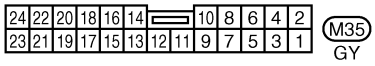


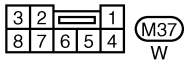
REFER TO THE FOLLOWING.
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

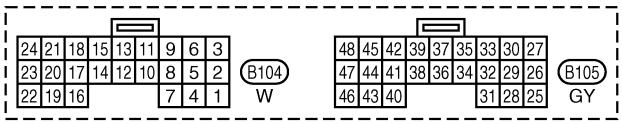
TKWT1830E

LT-ILL-06





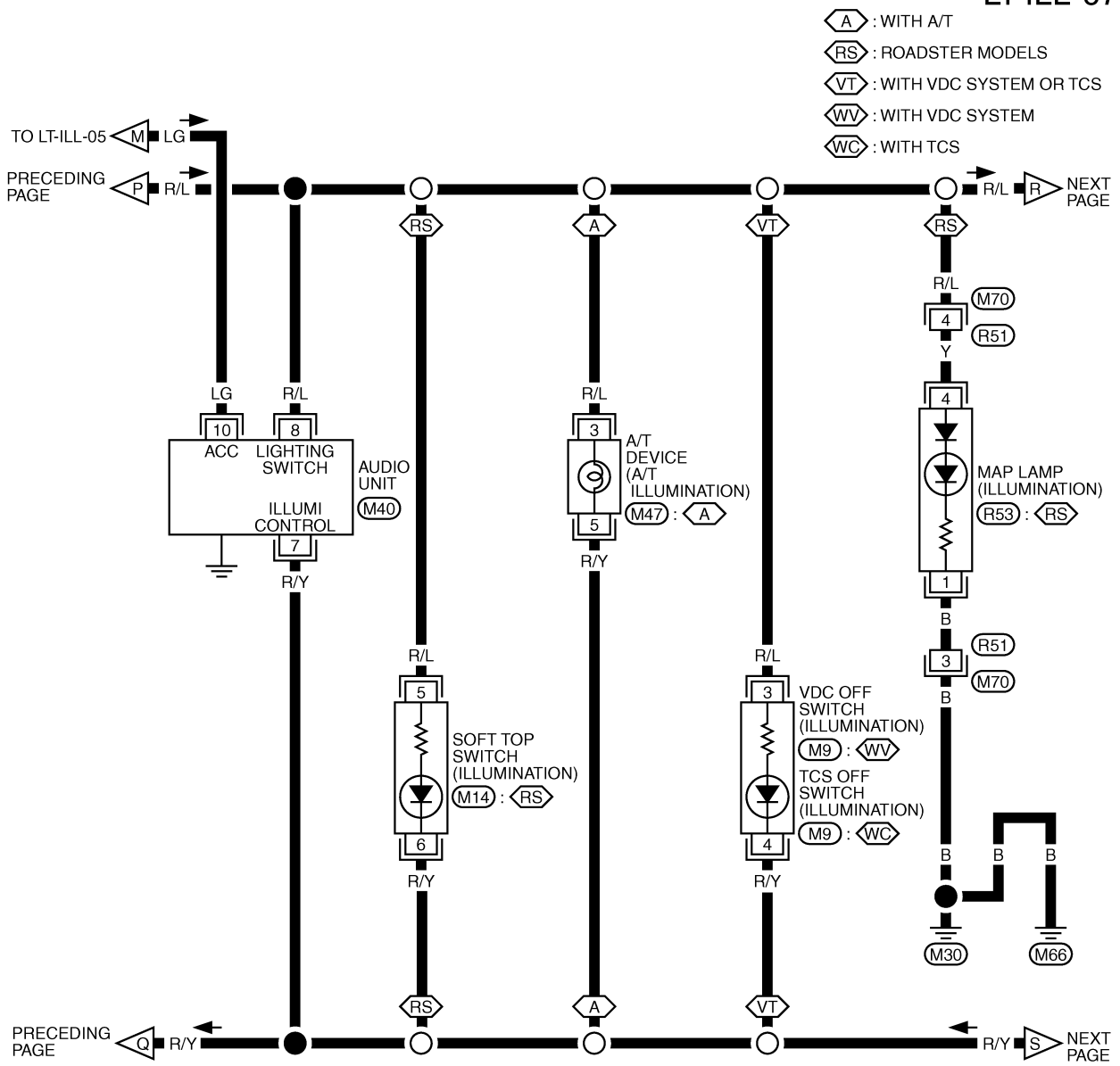


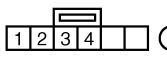


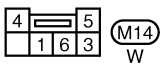
REFER TO THE FOLLOWING.
B101 -SUPER MULTIPLE JUNCTION (SMJ)

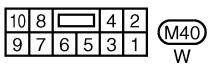
TKWT1831E

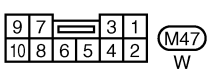
LT-ILL-07

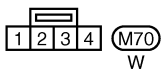


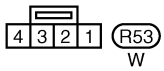






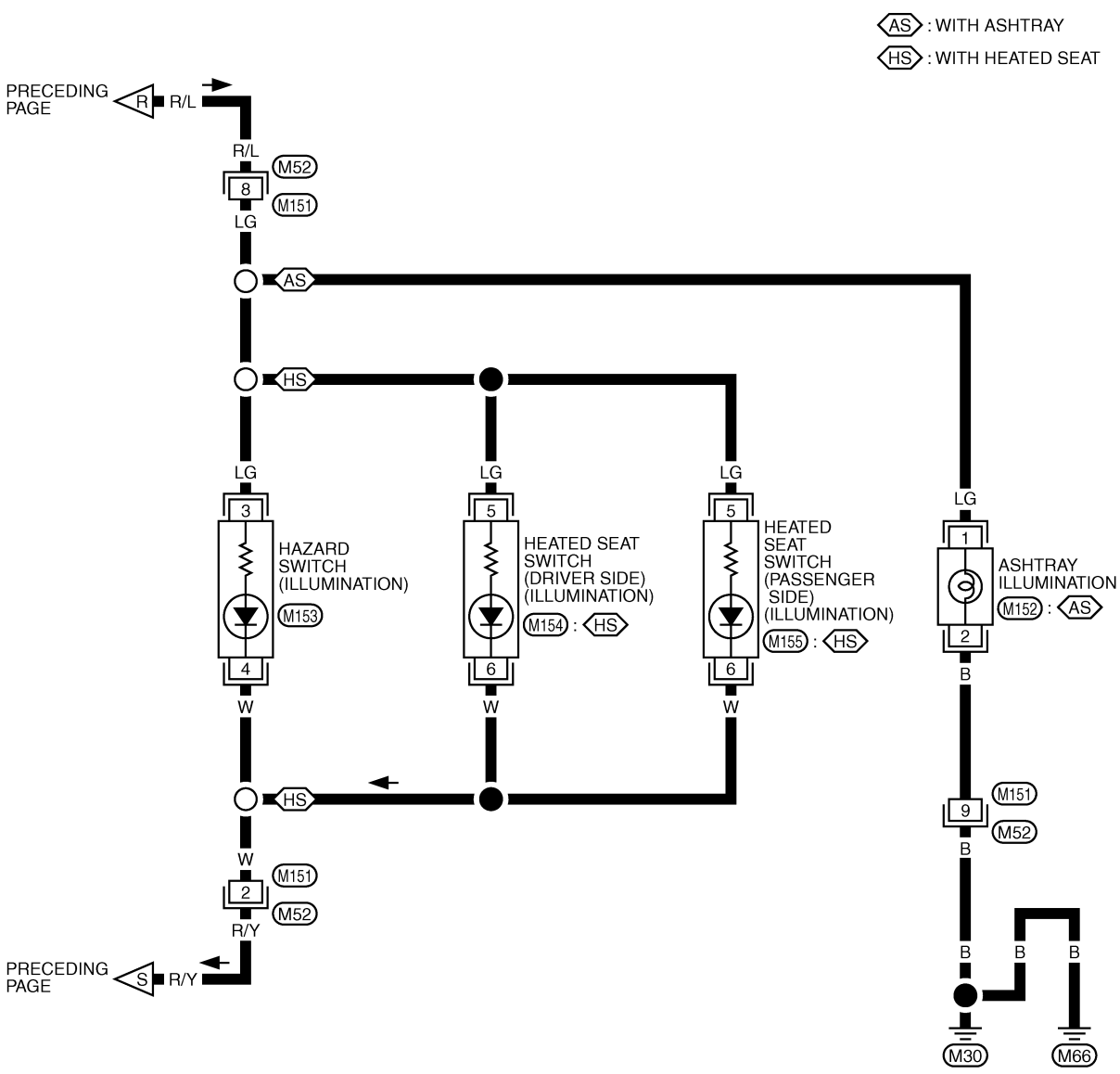


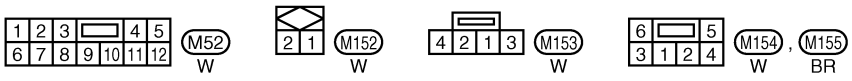




TKWT1832E

LT-ILL-08

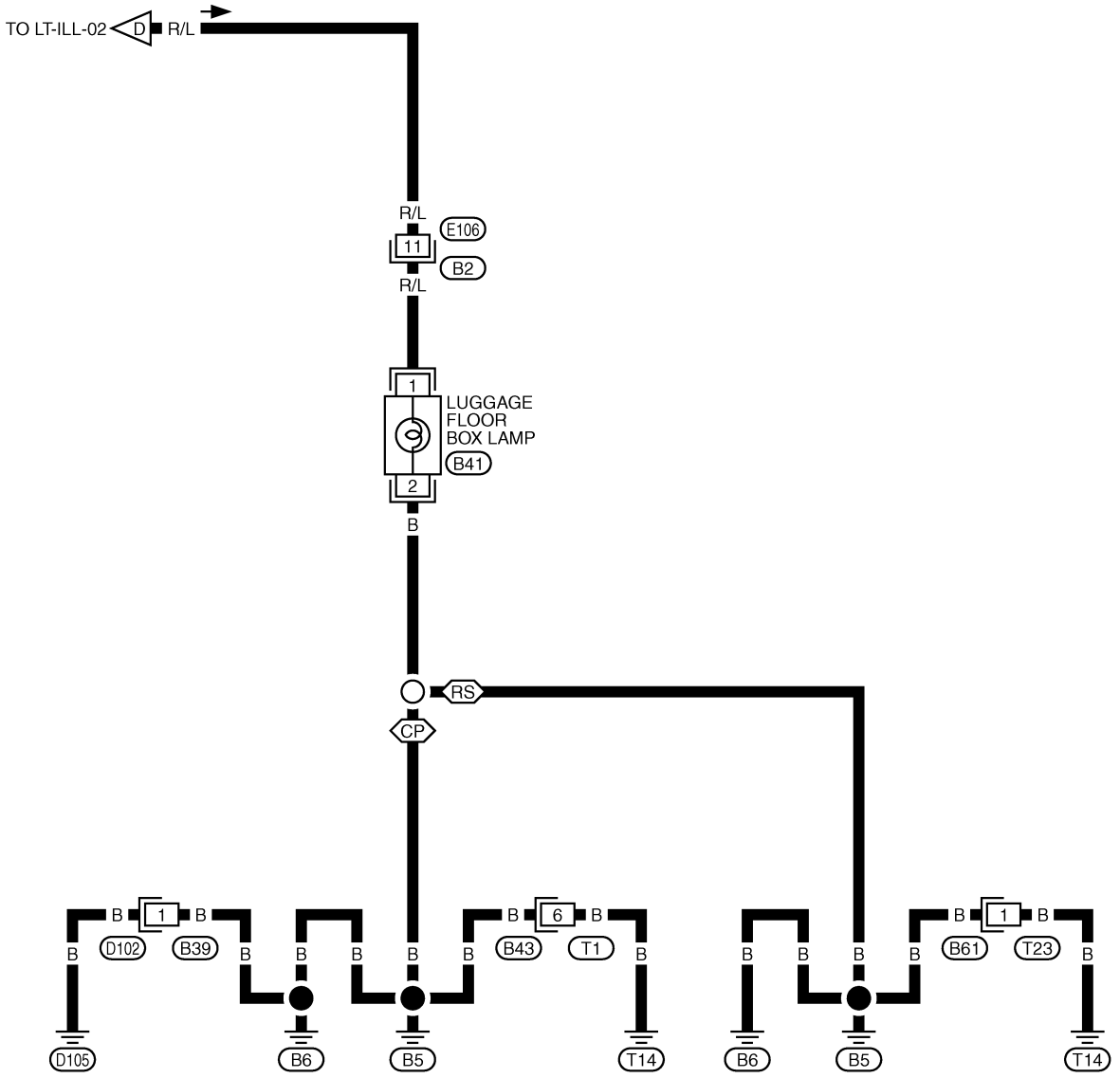


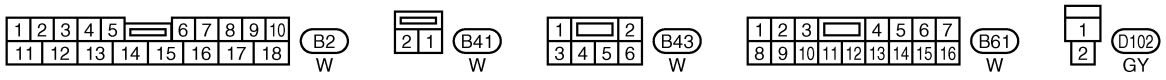


TKWT1833E

LT-ILL-09

CP : COUPE MODELS
RS : ROADSTER MODELS





TKWT1834E

BULB SPECIFICATIONS

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 combination lamp	Front Turn signal lamp	21 (amber)
	Parking lamp	5
	Front side marker lamp	5
Rear combination lamp	Stop/Tail lamp	21/5
	Rear Turn signal lamp	21
	Back-up lamp	21
	Rear side marker lamp	5
License plate lamp		5
High-mounted stop lamp (back door mount)		LED

Interior Lamp/Illumination

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	3.4
Vanity mirror lamp	1.32