SECTION LT
LIGHTING SYSTEM

CONTENTS

PRECAUTIONS

PFP:00011

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

AKS004DC

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

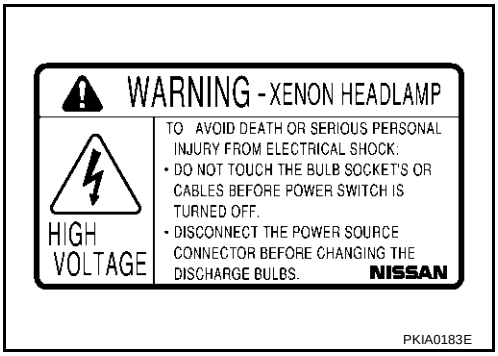
AKS004DB

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

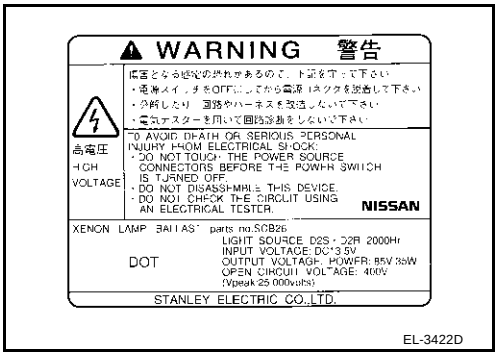
AKS0037Z

- 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.



PKIA0183E

- 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.



EL-3422D

- 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

AKS00380

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:

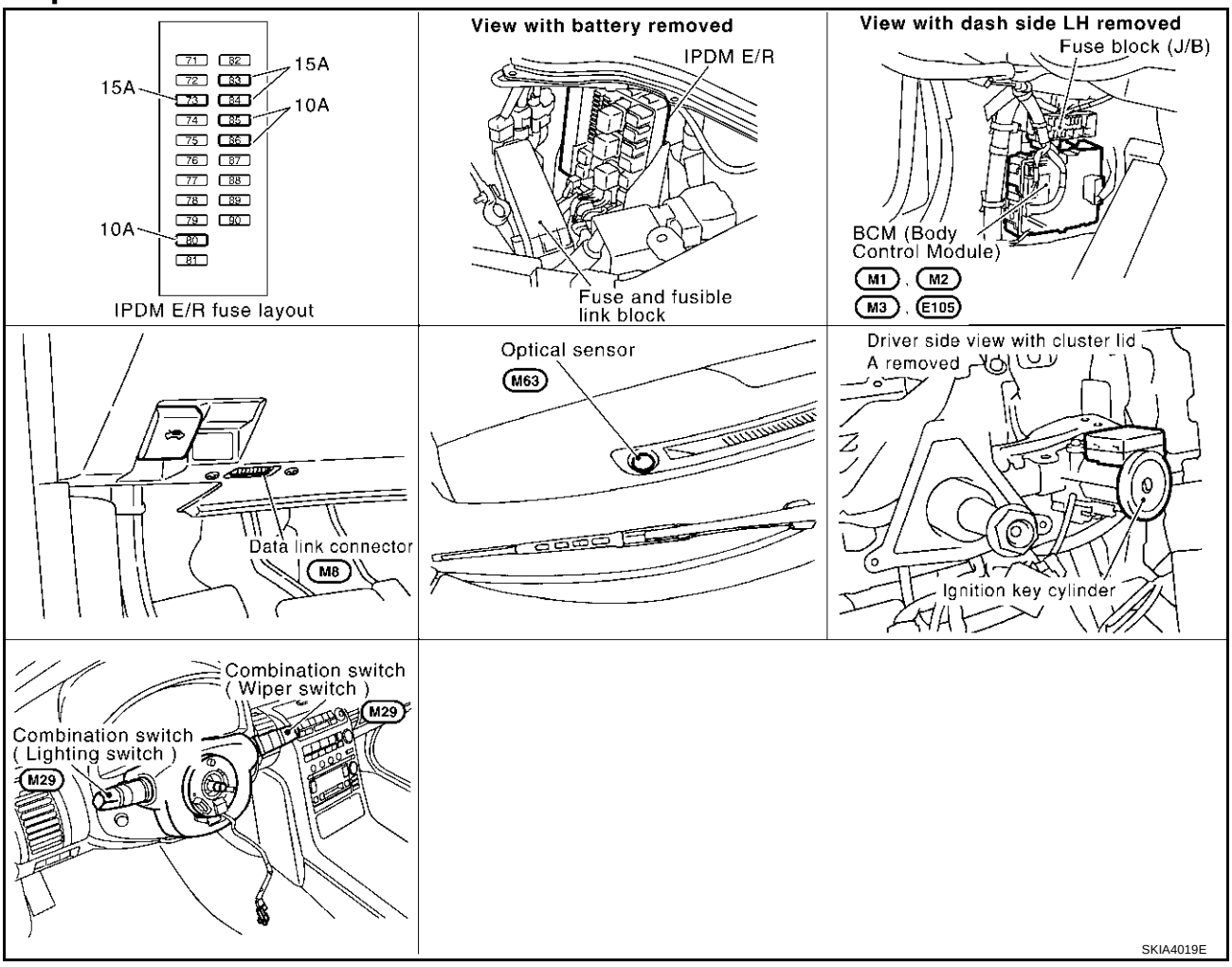
- Refer to GI-11, "HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSES" in GI section.
- Refer to GI-27, "How to Perform Efficient Diagnosis for an Electrical Incident" in GI section.

HEADLAMP (FOR USA)

PFP:26010

Component Parts and Harness Connector Location

AKS00381



System Description

AKS00382

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

OUTLINE

Power is supplied at all times

- to headlamp high relay, located in the IPDM E/R (intelligent power distribution module engine room), and
- to headlamp low relay, located in the IPDM E/R (intelligent power distribution module engine room), and
- to BCM (body control module) terminal 7
- through 50A fusible link (letter F, located in the fuse and fusible link box)
- to CPU (central processing unit) in the IPDM E/R (intelligent power distribution module engine room)
- through 15A fuse [No. 73 located in the IPDM E/R (intelligent power distribution module engine room)].

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

- to BCM (body control module) terminal 35
- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to CPU (central processing unit) in the IPDM E/R (intelligent power distribution module engine room)
- through 10A fuse [No. 80 located in the IPDM E/R (intelligent power distribution module engine room)]

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

- to BCM (body control module) terminal 36
- through 10A fuse [No. 6, located in the fuse block (J/B)].

Ground is supplied

- to BCM (body control module) terminal 8
- through grounds E17 and E43.
- to IPDM E/R (intelligent power distribution module engine room) terminals 14 and 45
- through grounds E17 and E43.

Low Beam Operation

With the lighting switch in 2ND position, the BCM (body control module) receives input signal requesting the headlamps to illuminate. This input signal is communicated to the IPDM E/R (intelligent power distribution module engine room) across the CAN communication lines. The CPU (central processing unit) in the IPDM E/R controls the headlamp low relay coil, which when energized, directs power

- to 15A fuse [No. 83, located in the IPDM E/R]
- through terminal 27 of the IPDM E/R
- to terminal 3 of headlamp RH, and
- to 15A fuse [No. 84, located in the IPDM E/R]
- through terminal 21 of the IPDM E/R
- to terminal 3 of headlamp LH.

Ground is supplied at all times

- to terminal 8 of headlamp RH
- through grounds E17 and E43, and
- to terminal 8 of headlamp LH
- through grounds E17 and E43.

With power and ground supplied, low beam headlamps illuminate.

High Beam Operation/Flash-to-Pass Operation

With the lighting switch in 2ND position and placed in HIGH or PASS position, the BCM (body control module) receives input signal requesting the headlamp high beams to illuminate. This input signal is communicated to the IPDM E/R (intelligent power distribution module engine room) across the CAN communication lines. The CPU (central processing unit) in the IPDM E/R controls the headlamp high relay coil, which when energized, directs power

- to 10A fuse [No. 86, located in the IPDM E/R]
- through terminal 24 of the IPDM E/R
- to terminal 2 of headlamp RH, and
- to 10A fuse [No. 85, located in the IPDM E/R]
- through terminal 22 of the IPDM E/R
- to terminal 2 of headlamp LH.

Ground is supplied

- to terminal 4 of headlamp RH
- through grounds E17 and E43, and
- to terminal 4 of headlamp LH
- through grounds E17 and E43.

With power and ground supplied, the high beam headlamps illuminate.
High beam indicator illuminates when combination meter receives input signal requesting high beam indicator to illuminate. This is communicated to BCM across the CAN communication lines.

COMBINATION SWITCH READING FUNCTION

Refer to LT-122, "Combination Switch Reading Function" .

EXTERIOR LAMP BATTERY SAVER CONTROL

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

AUTO LIGHT OPERATION

Refer to LT-63, "System Description" in “AUTO LIGHT SYSTEM”.

VEHICLE SECURITY SYSTEM

The vehicle security system will flash the high beams if the system is triggered. Refer to BL-93, "VEHICLE SECURITY (THEFT WARNING) SYSTEM" .

XENON HEADLAMP

Xenon type headlamp is adopted to the 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 the headlamps stable quality and tone color.
Following are some of the many advantages of the xenon type headlamp.

- The light produced by the 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

AKS005PQ

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

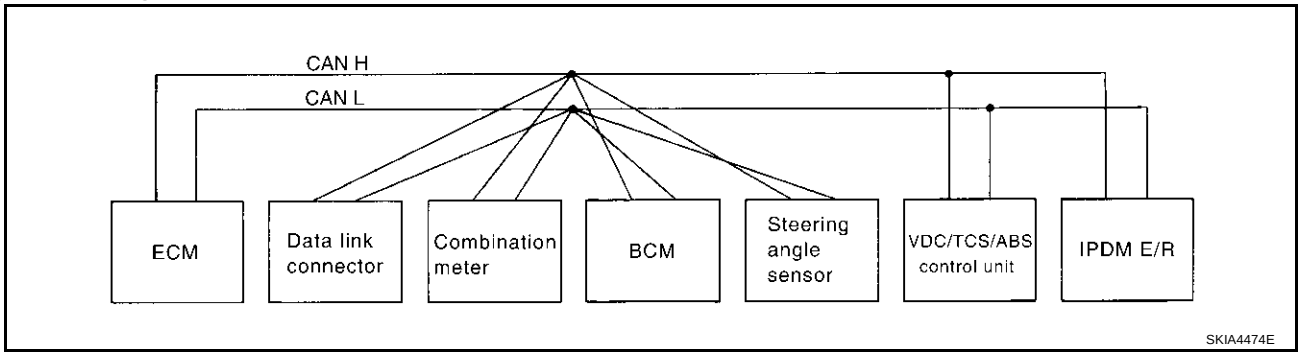
AKS005PR

Body type	Coupe	
Axle	2WD	
Engine	VQ35DE	
Transmission	M/T	A/T
Brake control	VDC	
CAN communication unit		
ECM	×	×
TCM		×
Data link connector	×	×
Combination meter	×	×
BCM	×	×
Steering angle sensor	×	×
VDC/TCS/ABS control unit	×	×
IPDM E/R	×	×
CAN communication type	LT-10	LT-11

×: Applicable

TYPE 1

System diagram



Input/output signal chart

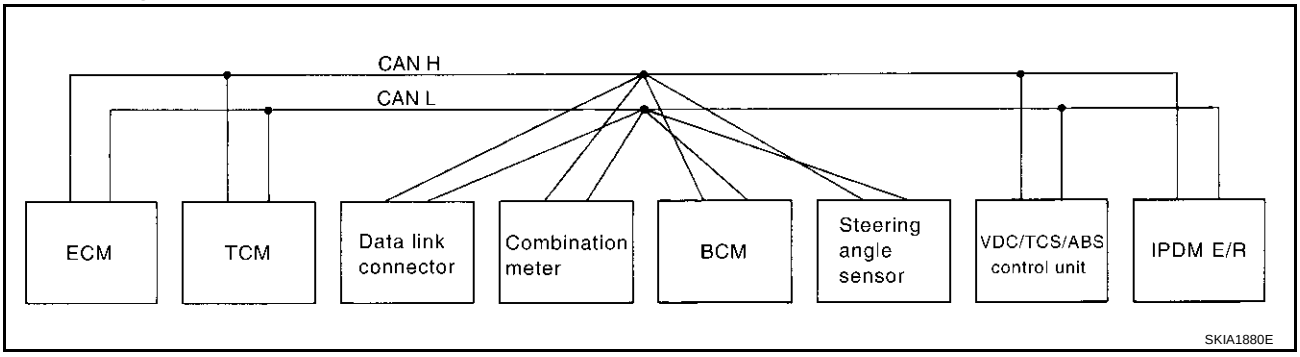
T: Transmit R: Receive

Signals	ECM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Engine speed signal	T	R			R	
Engine coolant temperature signal	T	R				
Accelerator pedal position signal	T				R	
Fuel consumption monitor signal	T	R				
Air conditioner switch signal	R		T			
A/C compressor request signal	T					R
A/C compressor feedback signal	T	R				
Blower fan motor switch signal	R		T			
Cooling fan motor operation signal	T					R
Position lights request signal		R	T			R
Low beam request signal			T			R
Low beam status signal	R		R			T
High beam request signal		R	T			R
High beam status signal	R		R			T
Front fog lights request signal			T			R
Vehicle speed signal		R			T	
	R	T	R			
Sleep request 1 signal		R	T			
Sleep request 2 signal			T			R
Wake up request 1 signal		R	T			
Wake up request 2 signal		R	T			
Door switch signal (without navigation system)		R	T			R
Door switch signal (with navigation system)		T	R			
Turn indicator signal		R	T			
Seat belt buckle switch signal		T	R			
Oil pressure switch signal		R				T
Buzzer output signal		R	T			
Trunk switch signal		R	T			
Malfunction indicator lamp signal	T	R				
ASCD SET lamp signal	T	R				
ASCD CRUISE lamp signal	T	R				

Signals	ECM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Fuel level sensor signal	R	T				
Front wiper request signal			T			R
Front wiper stop position signal			R			T
Rear window defogger switch signal			T			R
Rear window defogger control signal	R		R			T
Hood switch signal			R			T
Theft warning horn request signal			T			R
Horn chirp signal			T			R
Steering angle sensor signal				T	R	

TYPE 2

System diagram



Input/output signal chart

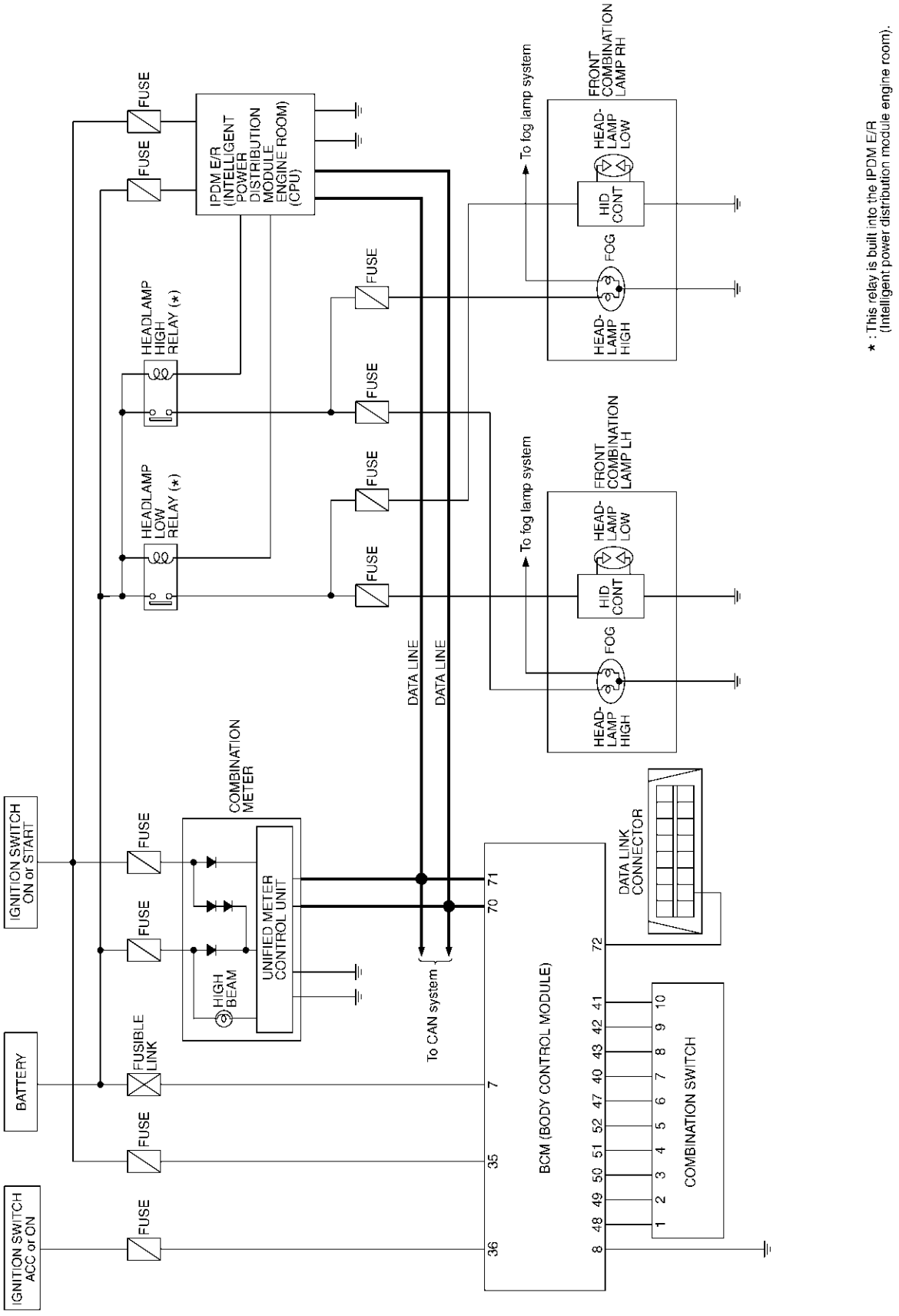
T: Transmit R: Receive

Signals	ECM	TCM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Engine speed signal	T	R	R			R	
Engine coolant temperature signal	T	R	R				
Accelerator pedal position signal	T	R				R	
Closed throttle position signal	T	R					
Wide open throttle position signal	T	R					
Battery voltage signal	T	R					
Stop lamp switch		R	T				
Fuel consumption monitor signal	T		R				
A/T self-diagnosis signal	R	T					
A/T CHECK indicator lamp signal		T	R				
A/T position indicator signal		T	R			R	
ABS operation signal		R				T	
A/T shift schedule change demand signal		R				T	
Air conditioner switch signal	R			T			
A/C compressor request signal	T						R
A/C compressor feedback signal	T		R				
Blower fan motor switch signal	R			T			
Cooling fan motor operation signal	T						R

Signals	ECM	TCM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Position lights request signal			R	T			R
Low beam request signal				T			R
Low beam status signal	R			R			T
High beam request signal			R	T			R
High beam status signal	R			R			T
Front fog lights request signal				T			R
Vehicle speed signal			R			T	
	R	R	T	R			
Sleep request 1 signal			R	T			
Sleep request 2 signal				T			R
Wake up request 1 signal			R	T			
Wake up request 2 signal			R	T			
Door switch signal (without navigation system)			R	T			R
Door switch signal (with navigation system)			T	R			
Turn indicator signal			R	T			
Seat belt buckle switch signal			T	R			
Oil pressure switch signal			R				T
Buzzer output signal			R	T			
Trunk switch signal			R	T			
Malfunction indicator lamp signal	T		R				
ASCD SET lamp signal	T		R				
ASCD CRUISE lamp signal	T		R				
Fuel level sensor signal	R		T				
Output shaft revolution signal	R	T					
Turbine revolution signal	R	T					
Front wiper request signal				T			R
Front wiper stop position signal				R			T
Rear window defogger switch signal				T			R
Rear window defogger control signal	R			R			T
Manual mode signal		R	T				
Not manual mode signal		R	T				
Manual mode shift up signal		R	T				
Manual mode shift down signal		R	T				
Manual mode indicator signal		T	R				
Hood switch signal				R			T
Theft warning horn request signal				T			R
Horn chirp signal				T			R
Steering angle sensor signal					T	R	

Schematic

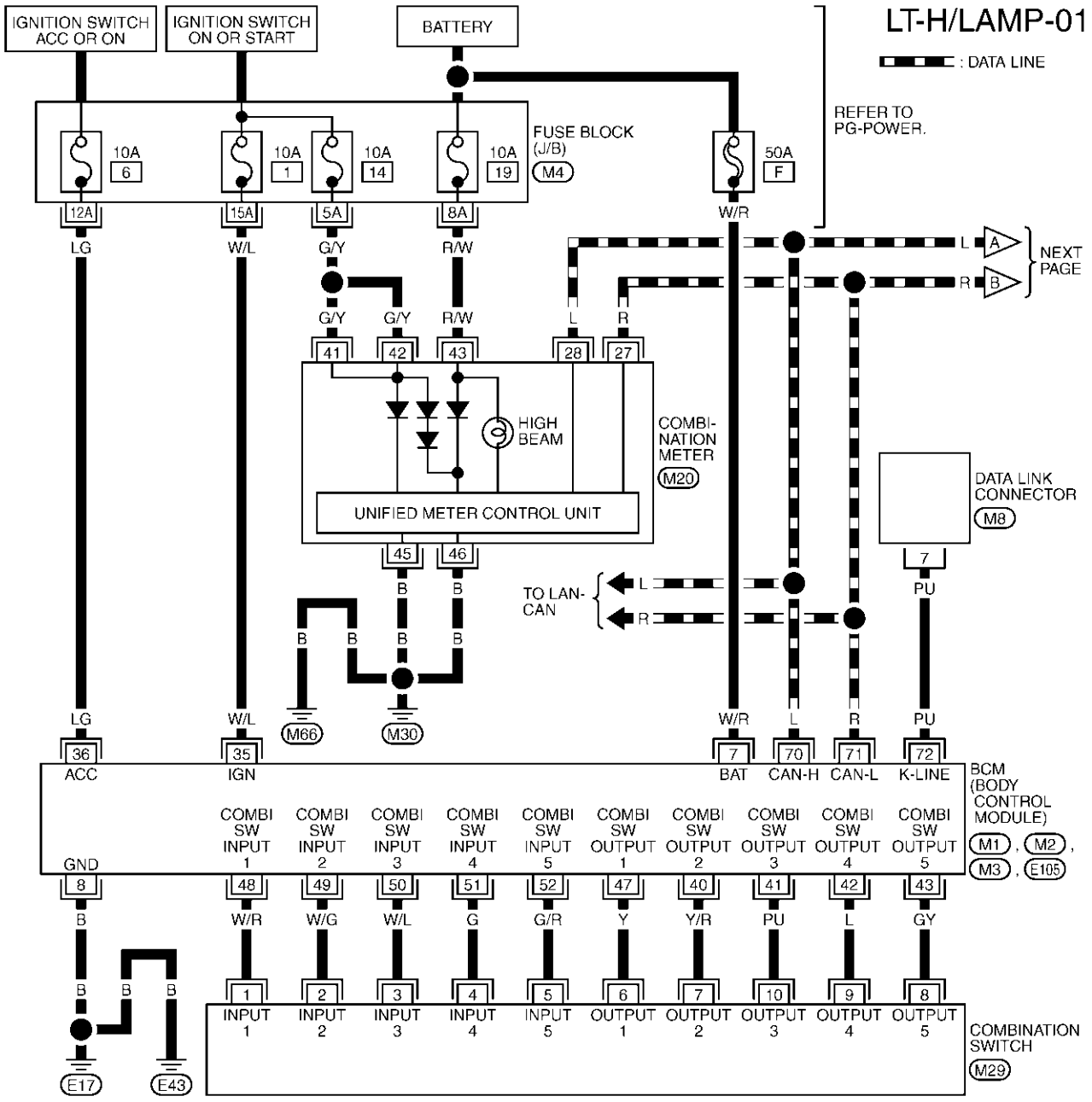
AKS00385

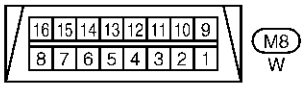


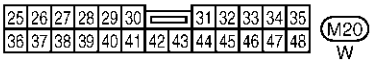
TKWT0589E

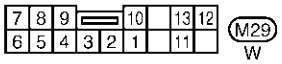
Wiring Diagram — H/LAMP —

AKS00386





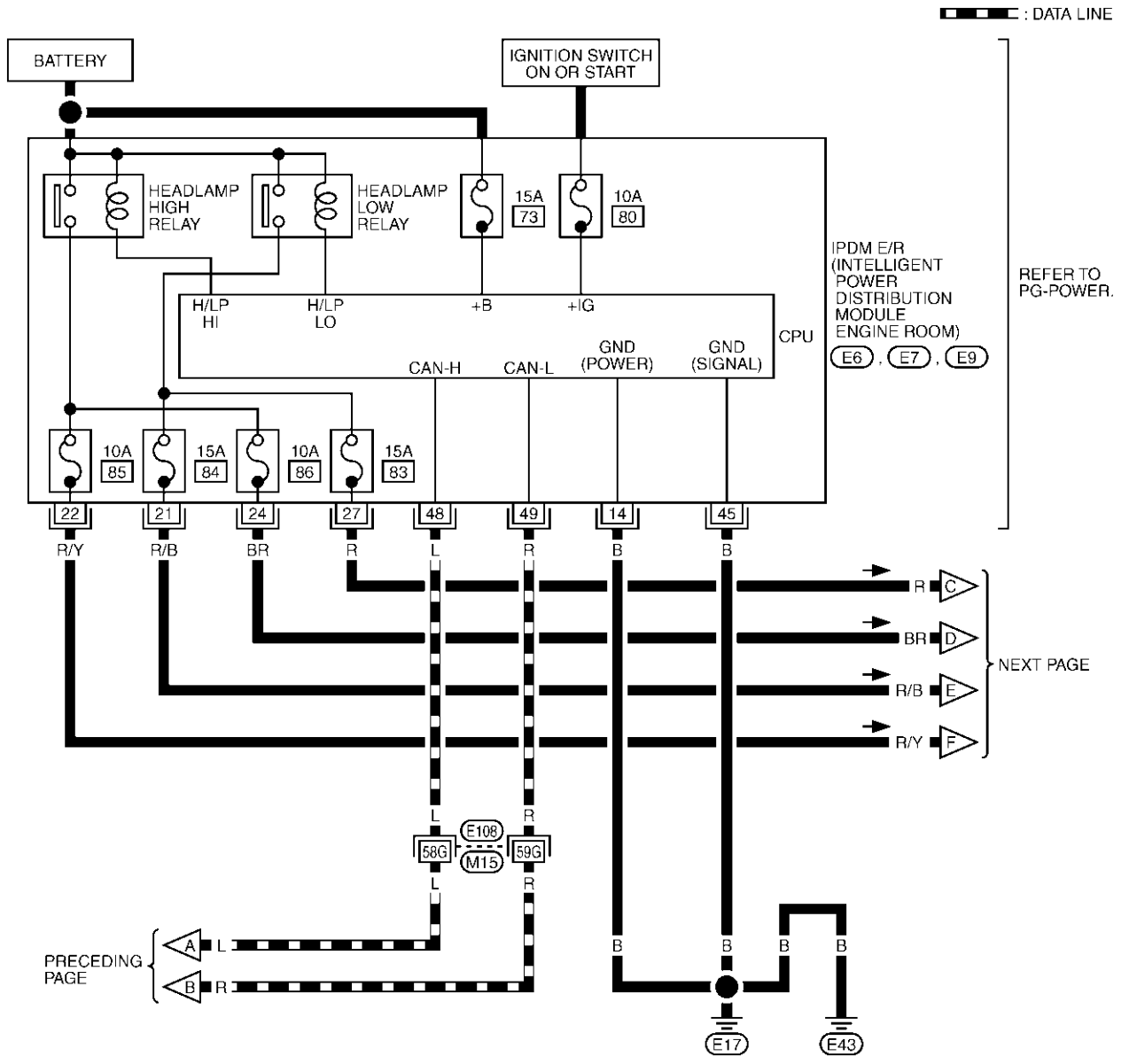


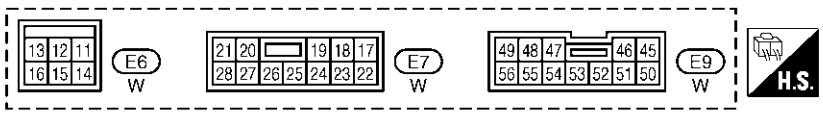


REFER TO THE FOLLOWING.
M4 -FUSE BLOCK-JUNCTION BOX (J/B)
M1, M2, M3, E105 -ELECTRICAL UNITS

TKWT0590E

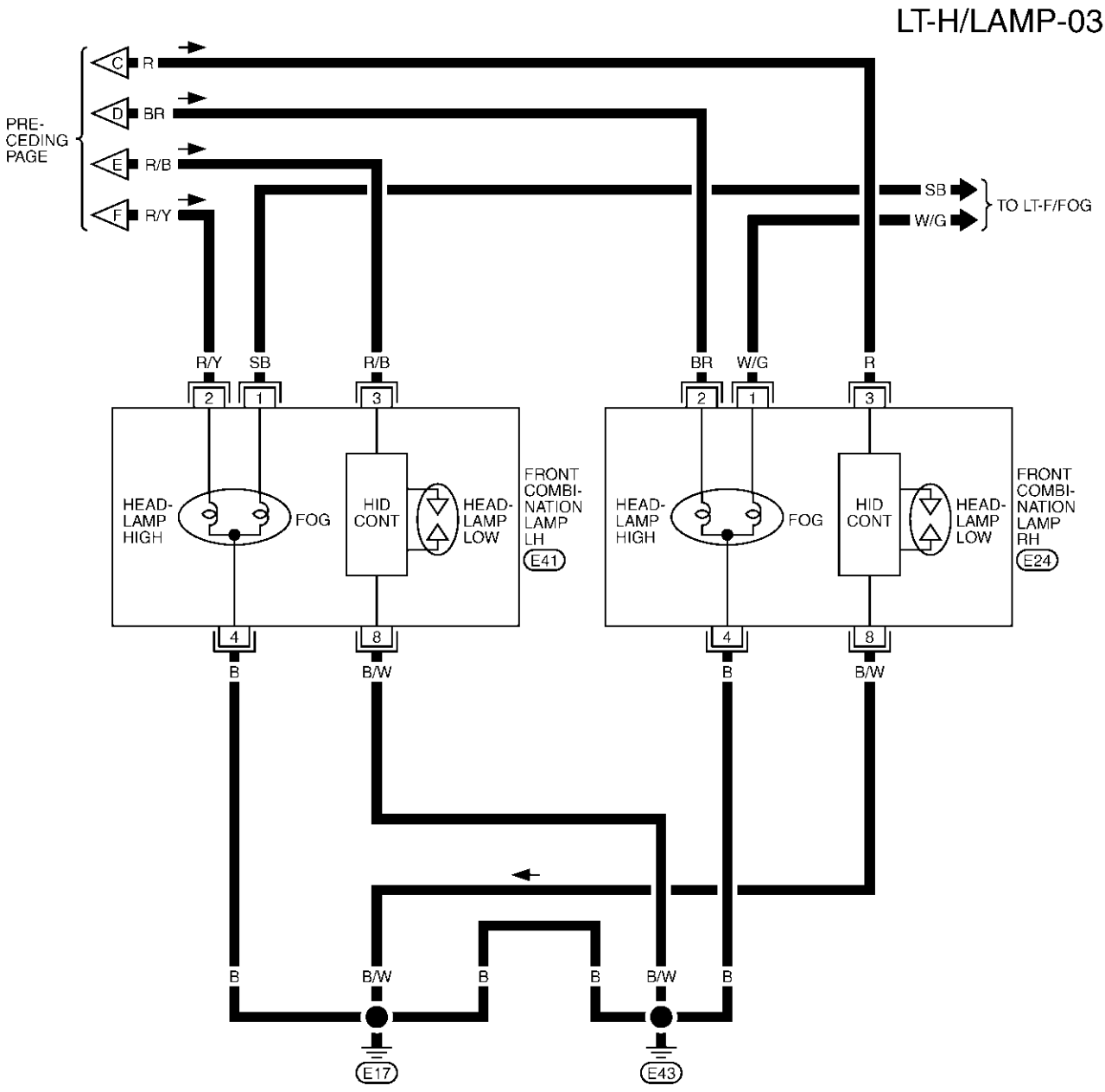
LT-H/LAMP-02

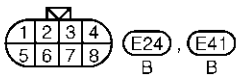




REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)

TKWT0591E

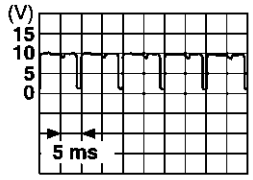

LT-H/LAMP-03
PRE-CEDING PAGE
C R
D BR
E R/B
F R/Y
SB
W/G
TO LT-F/FOG
R/Y SB R/B
BR W/G R
2 1 3
2 1 3
HEAD-LAMP HIGH
FOG
HID CONT
HEAD-LAMP LOW
FRONT COMBI-NATION LAMP LH
E41
HEAD-LAMP HIGH
FOG
HID CONT
HEAD-LAMP LOW
FRONT COMBI-NATION LAMP RH
E24
4 8
4 8
B B/W
B B/W
B B B/W B
E17
E43


1 2 3 4
5 6 7 8
E24 B
E41 B

TKWT0592E

Terminals and Reference Value for BCM

AKS00387

Terminal No.	Wire color	Item	Measuring condition		Reference value
			Ignition switch	Operation or condition	
7	W/R	Battery power supply	OFF	—	Battery voltage
8	B	Ground	ON	—	Approx.0V
35	W/L	Ignition switch (ON)	ON	—	Battery voltage
36	LG	Ignition switch (ACC)	ACC	—	Battery voltage
40	Y/R	Combination switch output 2	ON	Lighting, turn, wiper OFF	 SKIA1119J
41	PU	Combination switch output 3			
42	L	Combination switch output 4			
43	GY	Combination switch output 5			
47	Y	Combination switch output 1			
48	W/R	Combination switch input 1	ON	Lighting, turn, wiper OFF	4.5V or more
49	W/G	Combination switch input 2			
50	W/L	Combination switch input 3			
51	G	Combination switch input 4			
52	G/R	Combination switch input 5			
70	L	CAN-H	—	—	—
71	R	CAN-L	—	—	—
72	PU	K-LINE	—	—	—

Terminals and Reference Values for IPDM E/R

AKS004CT

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

How to Proceed With Trouble Diagnosis

AKS00388

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-7, "System Description" .
3. Carry out the Preliminary Inspection. Refer to LT-18, "Preliminary Inspection" .
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 Inspection

AKS00389

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown fuses.

UNIT	POWER SOURCE	FUSE No.
BCM	Battery	F
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
IPDM E/R	Battery	83
		84
		85
		86

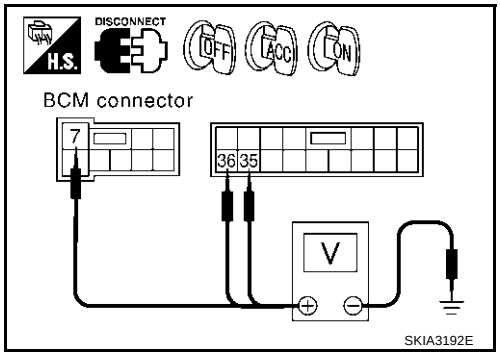
Refer to LT-14, "Wiring Diagram — H/LAMP —" .

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



Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
E105	7 (W/R)	Ground	Battery voltage	Battery voltage	Battery voltage
M1	35 (W/L)		0V	0V	Battery voltage
M1	36 (LG)		0V	Battery voltage	Battery voltage

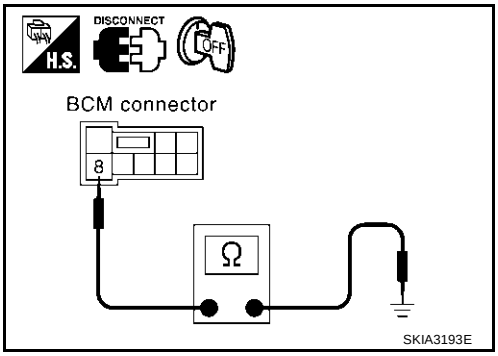
OK or NG

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)		
E105	8 (B)	Ground	Yes



OK or NG

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

CONSULT-II Function

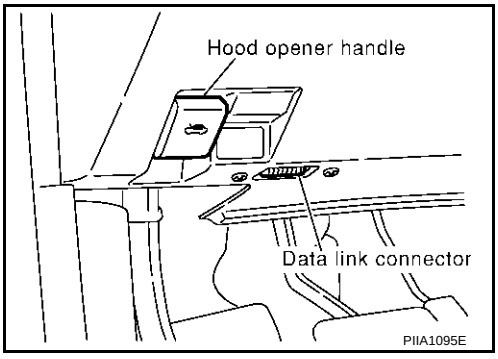
AKS0038A

CONSULT-II performs the following functions communicating with BCM.

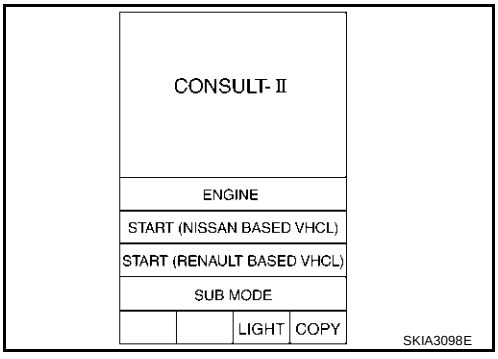
BCM diagnosis part	Check item, diagnosis mode	Description
HEAD LAMP	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
BCM C/U	CAN DIAG SUPPORT MNTR	The result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

CONSULT-II BASIC OPERATION

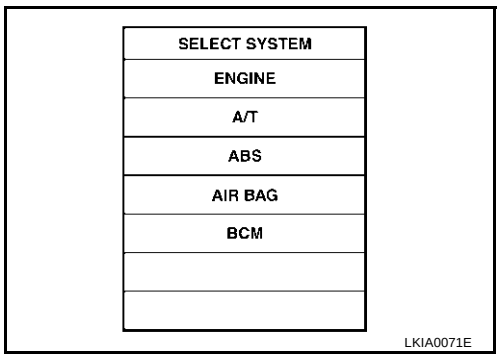
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



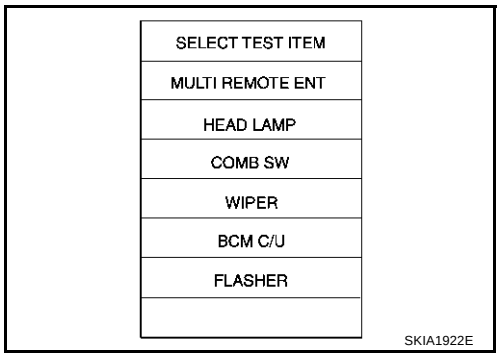
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “BCM” on “SELECT SYSTEM” screen.
If “BCM” is not indicated, go to GI-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 the “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.
AUTO LIGHT SW[Note 1]	“ON/OFF”	Displays status of the lighting switch as judged from the lighting switch signal. (AUTO position: ON/Other than AUTO position: OFF)
TAIL LAMP SW	“ON/OFF”	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
HEAD LAMP SW 1	“ON/OFF”	Displays status (headlamp switch 1: ON/Others: OFF) of headlamp switch 1 judged 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.
PASSING SW	“ON/OFF”	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW	“ON/OFF”	Displays status (front fog switch: ON/Others: OFF) of front fog switch judged from lighting switch signal.
DOOR SW - DR	“ON/OFF”	Displays status of the driver door as judged from the driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - AS	“ON/OFF”	Displays status of the passenger door as judged from the passenger door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RR[Note 2]	“OFF”	—
HEAD LAMP SW 2	“ON/OFF”	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
OPTICAL SENSOR	[0 - 5V]	Displays “ambient light (close to 5V when light/close to 0V when dark)” judged from optical sensor signal.

NOTE:
Note 1: Even vehicles without auto light system display this item, but cannot monitor it.
Note 2: 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 (LOW)	Allows headlamp relay to operate by switching ON–OFF.
HEAD LAMP (HI)	Allows headlamp relay to operate by switching ON–OFF.
FR FOG LAMP	Allows fog lamp relay to operate by switching ON–OFF.

Headlamp HI Does Not Illuminate (Both Sides)

AKS0038B

1. INSPECTION 1: IPDM E/R AND HEADLAMPS

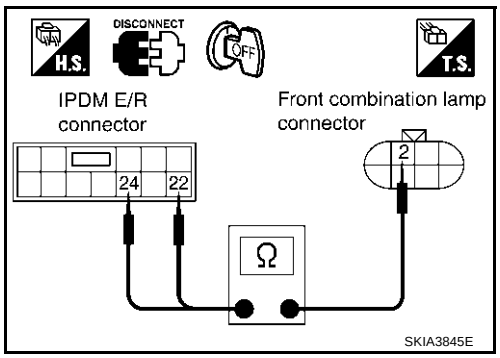
1. Start auto active test. Refer to PG-22, "Auto Active Test" .
2. Check whether headlamp HI operates.

OK or NG

OK >> GO TO 5.
NG >> GO TO 2.

2. INSPECTION 2: IPDM E/R AND HEADLAMPS

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



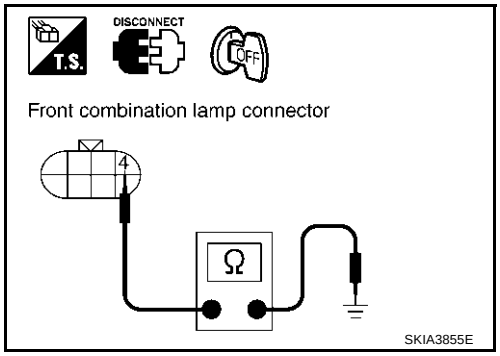
Terminals					Continuity
IPDM E/R		Front combination lamp			
Connector	Terminal (Wire color)	Connector		Terminal (Wire color)	
E7	24 (BR)	RH	E24	2 (BR)	Yes
	22 (R/Y)	LH	E41	2 (R/Y)	

OK or NG

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

3. INSPECTION: HEADLAMPS AND GROUND

Check continuity between harness connector of LH/RH front combination lamp and ground.



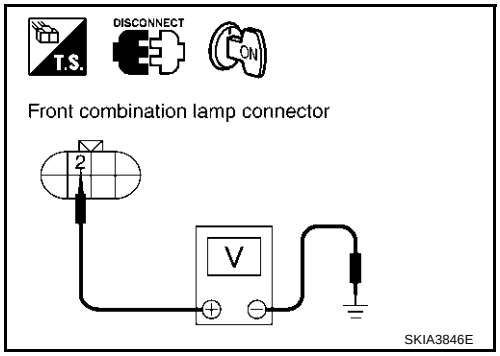
Terminals				Continuity
Front combination lamp			Ground	
Connector		Terminal (Wire color)		
RH	E24	4 (B)		Yes
LH	E41			

OK or NG

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

4. CHECK IPDM E/R

1. Connect IPDM E/R connector.
2. Start auto active test. Refer to PG-22, "Auto Active Test" . When headlamp HI is operating, check voltage between harness connector of LH/RH front combination lamp and ground.



Terminals				Voltage
Front combination lamp			Ground	
Connector		Terminal (Wire color)		
RH	E24	2 (BR)		Battery voltage
LH	E41	2 (R/Y)		

OK or NG

OK >> Check headlamp bulbs.
NG >> Replace IPDM E/R.

5. INSPECTION 1: COMBINATION SWITCH AND BCM

Select “BCM” on CONSULT-II. Carry out “BCM C/U” self-diagnosis.

Displayed results of self-diagnosis

No malfunction detected>> GO TO 6.

CAN communications or CAN system>> Inspect the BCM CAN communications system. Refer to BCS-17, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" .

OPEN DETECT 1 - 5>> Combination switch system malfunction. Refer to LT-128, "Combination Switch Inspection According to Self-Diagnostic Results" .

SELF-DIAG RESULTS	
DTC RESULTS	TIME
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	

LKIA0073E

6. INSPECTION 2: COMBINATION SWITCH AND BCM

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

OK or NG

OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM"

NG >> Replace lighting switch.

DATA MONITOR	
MONITOR	
IGN ON SW	ON
ACC ON SW	ON
AUTO LIGHT SW	OFF
TAIL LAMP SW	OFF
HEAD LAMP SW 1	OFF
HI BEAM SW	OFF
PASSING SW	OFF
FR FOG SW	OFF
DOOR SW-DR	OFF

SKIA4603E

Headlamp HI Does Not Illuminate (One Side)

AKS0038C

1. CHECK INSPECTION

Inspect bulbs of lamps which do not illuminate.

OK or NG

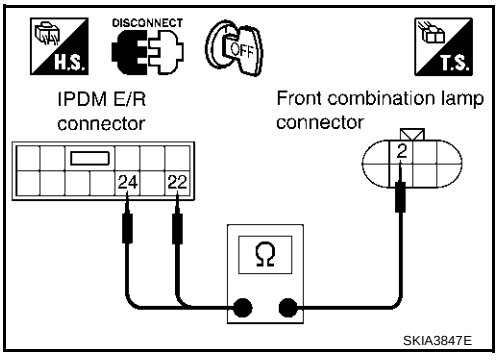
OK >> GO TO 2.

NG >> Replace headlamp bulb.

2. INSPECTION: IPDM E/R AND HEADLAMP

1. Disconnect IPDM E/R connector and front combination lamp connector.
2. Check continuity between harness connector of IPDM E/R and harness connector of front combination lamp.

Terminals					Continuity
IPDM E/R		Front combination lamp			
Connector	Terminal (Wire color)	Connector		Terminal (Wire color)	
E7	24 (BR)	RH	E24	2 (BR)	Yes
	22 (R/Y)	LH	E41	2 (R/Y)	



SKIA3847E

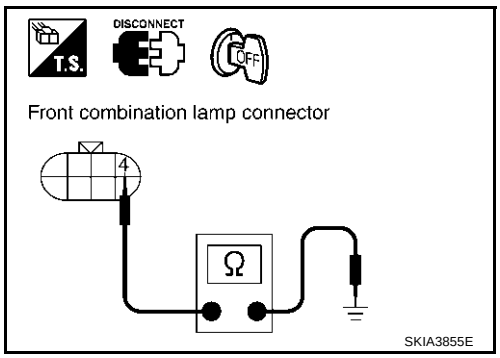
OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.

3. INSPECTION: HEADLAMPS AND GROUND

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



Terminals				Continuity
Front combination lamp			Ground	
Connector		Terminal (Wire color)		
RH	E24	4 (B)		Yes
LH	E41			

OK or NG

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

High Beam Indicator Lamp Does Not Illuminate

AKS0038D

1. CHECK BULB

Inspect bulb of high beam indicator lamp.

OK or NG

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

Headlamp LO Does Not Illuminate (Both Sides)

AKS0038E

1. INSPECTION 1: IPDM E/R AND HEADLAMPS

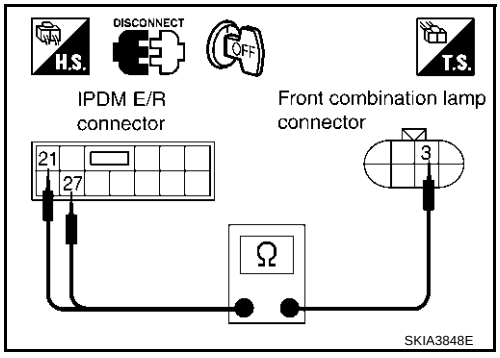
1. Start auto active test. Refer to PG-22, "Auto Active Test" .
2. Check whether headlamp LO operates.

OK or NG

OK >> GO TO 5.
NG >> GO TO 2.

2. INSPECTION: IPDM E/R AND HEADLAMPS

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



Terminals					Continuity
IPDM E/R		Front combination lamp			
Connector	Terminal (Wire color)	Connector		Terminal (Wire color)	
E7	27 (R)	RH	E24	3 (R)	Yes
	21 (R/B)	LH	E41	3 (R/B)	

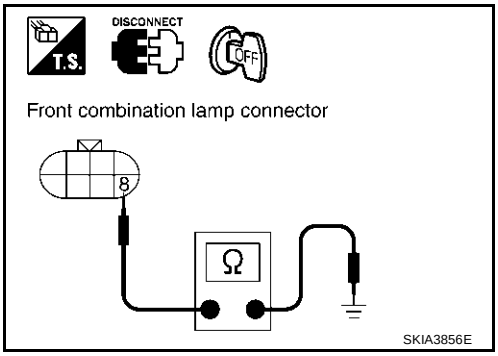
OK or NG

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

3. INSPECTION: HEADLAMPS AND GROUND

Check continuity between harness connector of LH/RH front combination lamp and ground.

Terminals				
Front combination lamp			Ground	Continuity
Connector		Terminal (Wire color)		
RH	E24	8 (B/W)		Yes
LH	E41			



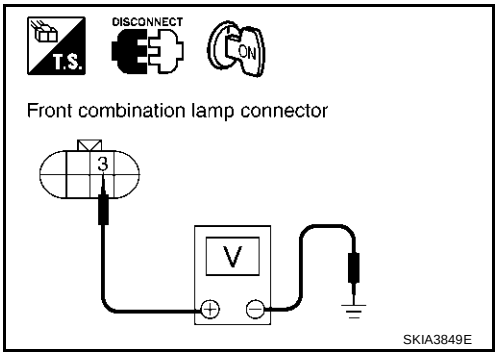
OK or NG

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

4. CHECK IPDM E/R

1. Connect IPDM E/R connector.
2. Start auto active test. Refer to PG-22, "Auto Active Test" . When headlamp LO is operating, check voltage between harness connector of LH/RH front combination lamp and ground.

Terminals				
Front combination lamp			Ground	Voltage
Connector		Terminal (Wire color)		
RH	E24	3 (R)		Battery voltage
LH	E41	3 (R/B)		



OK or NG

OK >>
- Check headlamp harness and connectors, ballasts (HID control unit), and xenon bulbs.
- (step1) Replace xenon bulb with other side bulb or new one. (If eclampsia illuminate correctly, replace the xenon bulb.)
- (step2) Replace the ballasts (HID control unit) with other side ballasts or new one. (If eclampsia illuminate correctly, replace the ballasts.)

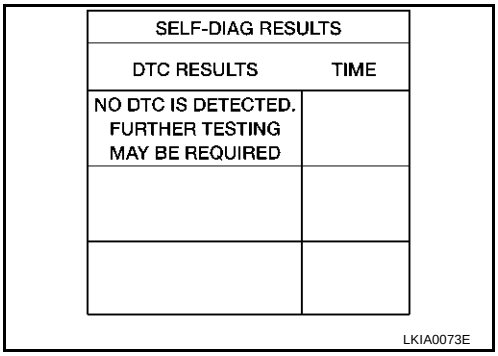
NG >> Replace IPDM E/R.

5. INSPECTION 1: COMBINATION SWITCH AND BCM

Select “BCM” on CONSULT-II. Carry out “BCM C/U” self-diagnosis.

Displayed results of self-diagnosis

No malfunction detected>> GO TO 6.
CAN communications or CAN system>> Inspect the BCM CAN communications system. Refer to BCS-17, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" .
OPEN DETECT 1 - 5>> Combination Switch System malfunction. Refer to LT-128, "Combination Switch Inspection According to Self-Diagnostic Results" .
HEAD LAMP 1 SW or HEAD LAMP 2 SW>> Replace lighting switch.



6. INSPECTION 2: COMBINATION SWITCH AND BCM

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

DATA MONITOR	
MONITOR	
HEAD LAMP SW 1	OFF
HIBEAM SW	OFF
PASSING SW	OFF
FR FOG SW	OFF
DOOR SW-DR	OFF
DOOR SW-AS	OFF
DOOR SW-RR	OFF
HEAD LAMP SW2	OFF
OPTICAL SENSOR	0.75V

SKIA3890E

OK or NG

OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .

NG >>
- Replace lighting switch.
- If one of “HEAD LAMP SW 1”and “HEAD LAMP SW 2” is NG, replace both BCM (Refer to BCS-20, "Removal and Installation of BCM") and lighting switch.

Headlamp LO Does Not Illuminate (One Side)

AKS0038F

1. CHECK BULB

Check ballasts (HID control unit) and xenon bulb of lamp which does not illuminate.

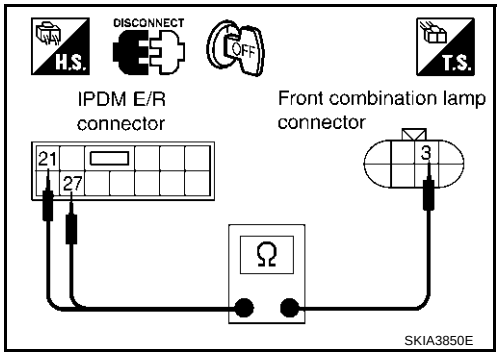
OK or NG

OK >> GO TO 2.

NG >>
- (step1) Replace xenon bulb with other side bulb or new one. (If eclampsia illuminate correctly, replace the xenon bulb.)
- (step2) Replace the ballasts (HID control unit) with other side ballasts or new one. (If eclampsia illuminate correctly, replace the ballasts.)

2. INSPECTION: IPDM E/R AND HEADLAMP

1. Disconnect IPDM E/R connector and front combination lamp connector.
2. Check continuity between harness connector of IPDM E/R and harness connector of front combination lamp.



Terminals					Continuity
IPDM E/R		Front combination lamp			
Connector	Terminal (Wire color)	Connector		Terminal (Wire color)	
E7	27 (R)	RH	E24	3 (R)	Yes
	21 (R/B)	LH	E41	3 (R/B)	

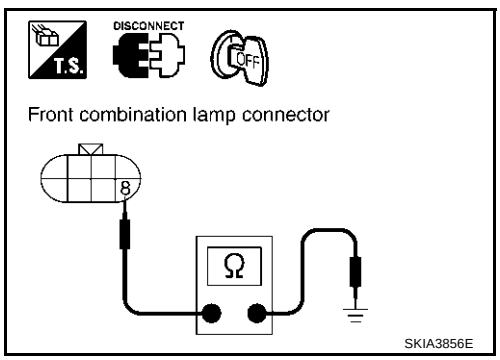
OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.

3. INSPECTION: HEADLAMP AND GROUND

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



Terminals				Continuity
Front combination lamp			Ground	
Connector		Terminal (Wire color)		
RH	E24	8 (B/W)		Yes
LH	E41			

OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness or connector.

Headlamps Do Not Turn OFF

AKS0038G

1. CHECK CAN COMMUNICATIONS BETWEEN BCM AND IPDM E/R

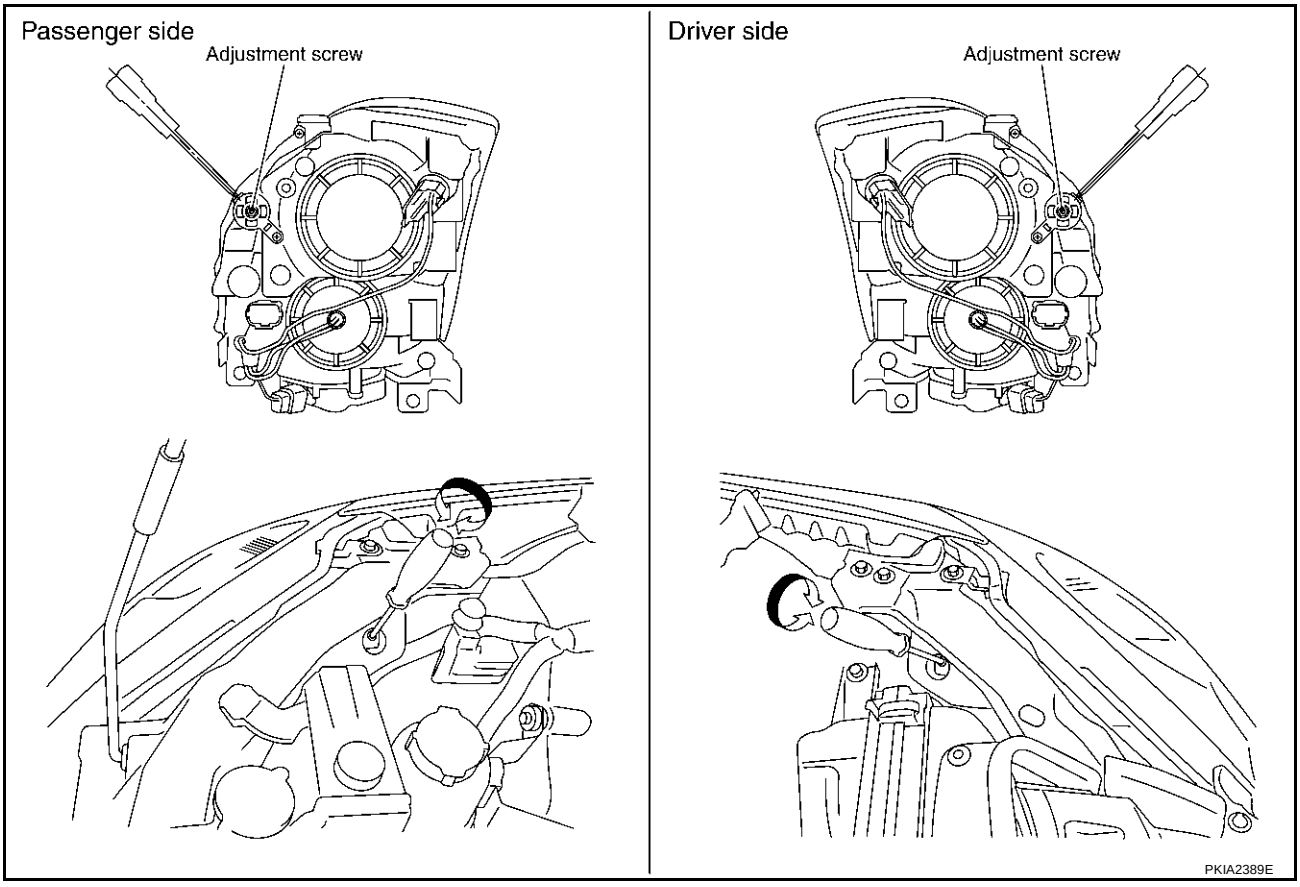
- IPDM E/R detects CAN communication malfunction and activates fail-safe operation. Refer to BCS-17, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" and inspect CAN system.

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair malfunctioning part.

Aiming Adjustment

AKS0038H



PREPARATION BEFORE ADJUSTING

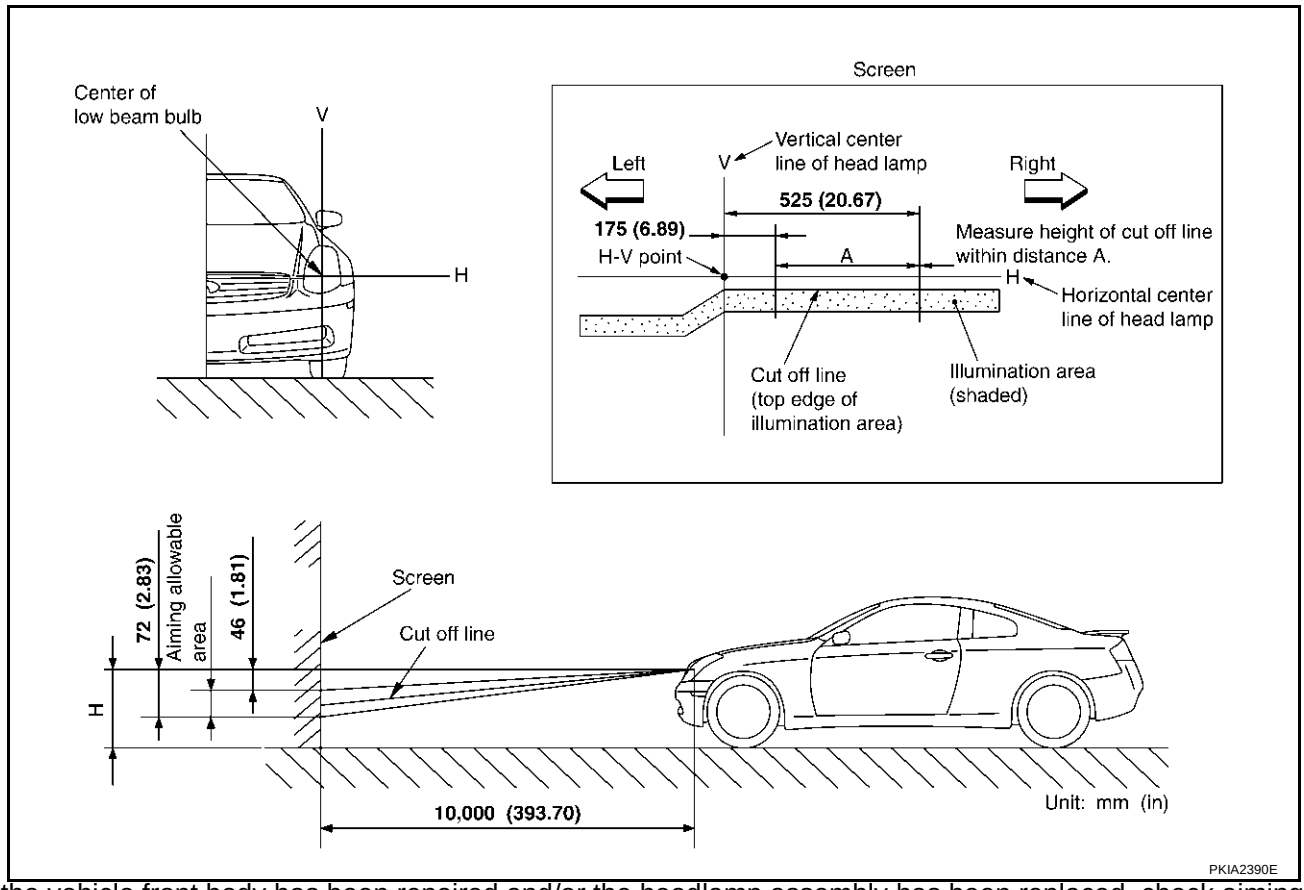
For details, refer to the regulations in your own country.
Before performing aiming adjustment, check the following.

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.

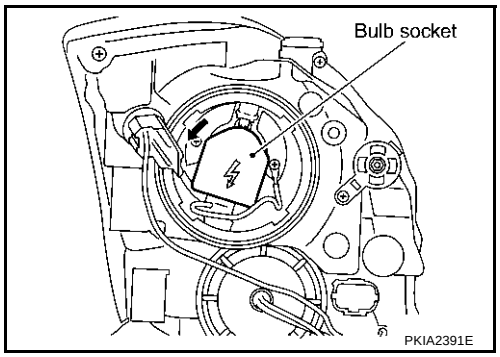
Bulb Replacement

AKS0038I

HEADLAMP (UPPER) LOW BEAM

1. Turn lighting switch OFF.
2. Remove headlamp. Refer to LT-29, "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.

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



HEADLAMP (LOWER) HIGH BEAM/FOG LAMP

1. Turn lighting switch OFF.
2. Disconnect battery negative cable or remove power fuse.
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 terminal.
6. Unlock retaining spring and remove bulb from headlamp.
7. Install in the reverse order of removal.

Headlamp (lower) high beam/Fog lamp : 12V - 60/55W (HB2)

PARKING LAMP (CLEARANCE LAMP)

1. Turn lighting switch OFF.
2. Remove fender protector (front). Refer toEI-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 lamp (Clearance lamp) : 12V - 5W

FRONT TURN SIGNAL AND PARKING 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 and parking lamp : 12V - 21/5W

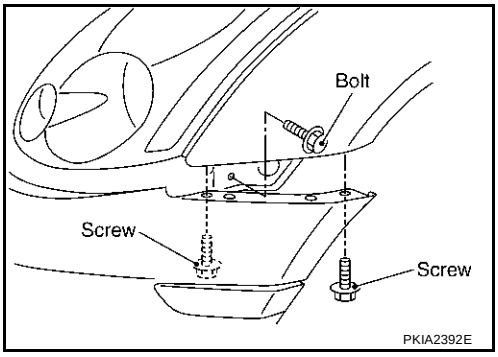
CAUTION:
After installing bulb, be sure to install plastic cap and bulb socket securely to insure watertightness.

Removal and Installation

AKS0038J

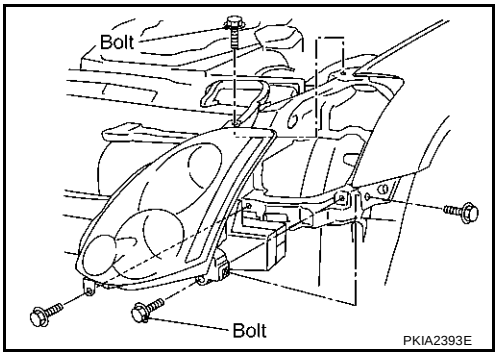
REMOVAL

1. Disconnect battery negative cable or remove power fuse.
2. Remove front bumper. Refer to EI-14, "FRONT BUMPER" in “EI” section.



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

CAUTION:
When removing headlamps, put a shop cloth or something similar between headlamps and bumper to protect bumper.



INSTALLATION

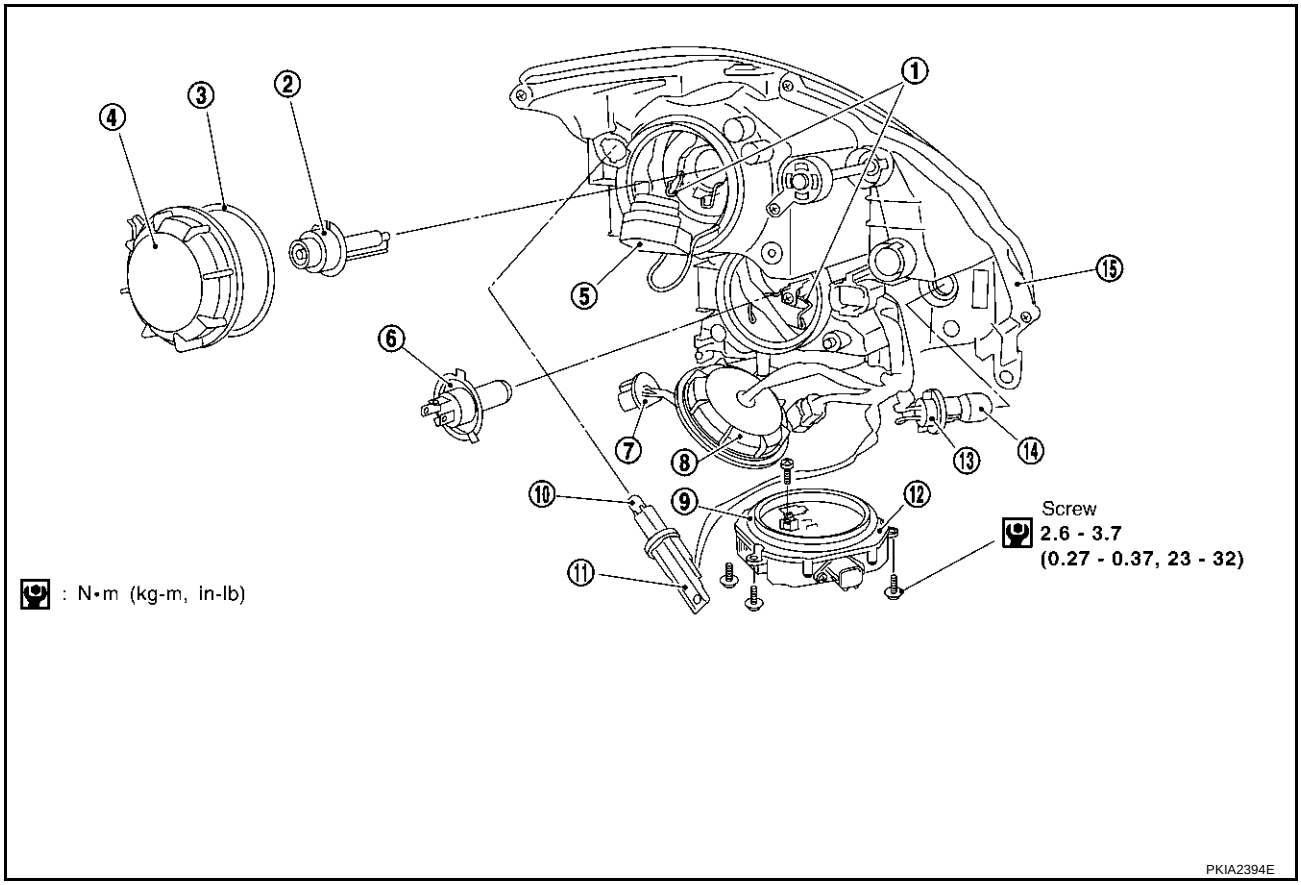
Install in the reverse order of removal. Be careful of the following:

Headlamp mounting bolt:

: 4.4 - 6.5 N·m (0.45 - 0.66 kg-m, 39 - 57 in-lb)

Disassembly

AKS0038K



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

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

Assembly

AKS0038L

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

HID control unit:

: 2.5 - 3.8 N·m (0.26 - 0.38 kg-m, 23 - 33 in-lb)

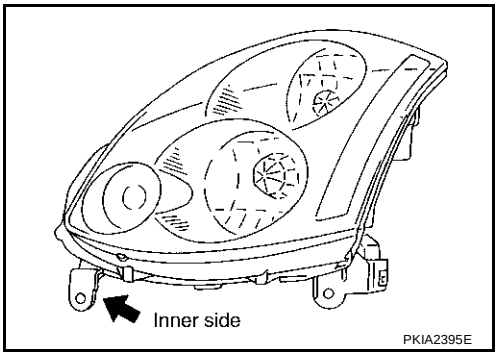
CAUTION:

- **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

AKS0038M

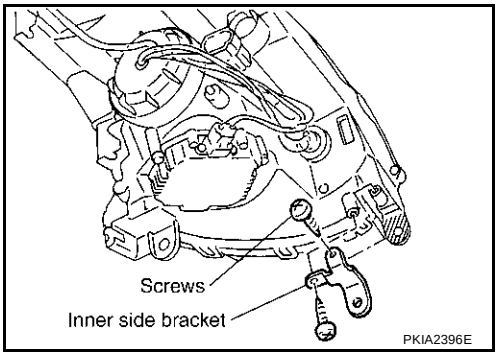
If only installation part as shown in the figure is damaged, and headlamp housing itself is not damaged, repair can be completed easily by installing correction brackets.



REMOVAL AND INSTALLATION

1. Remove headlamps. Refer to LT-29, "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 AM800**
LH headlamp	**Inner side**	**26090 AM800**

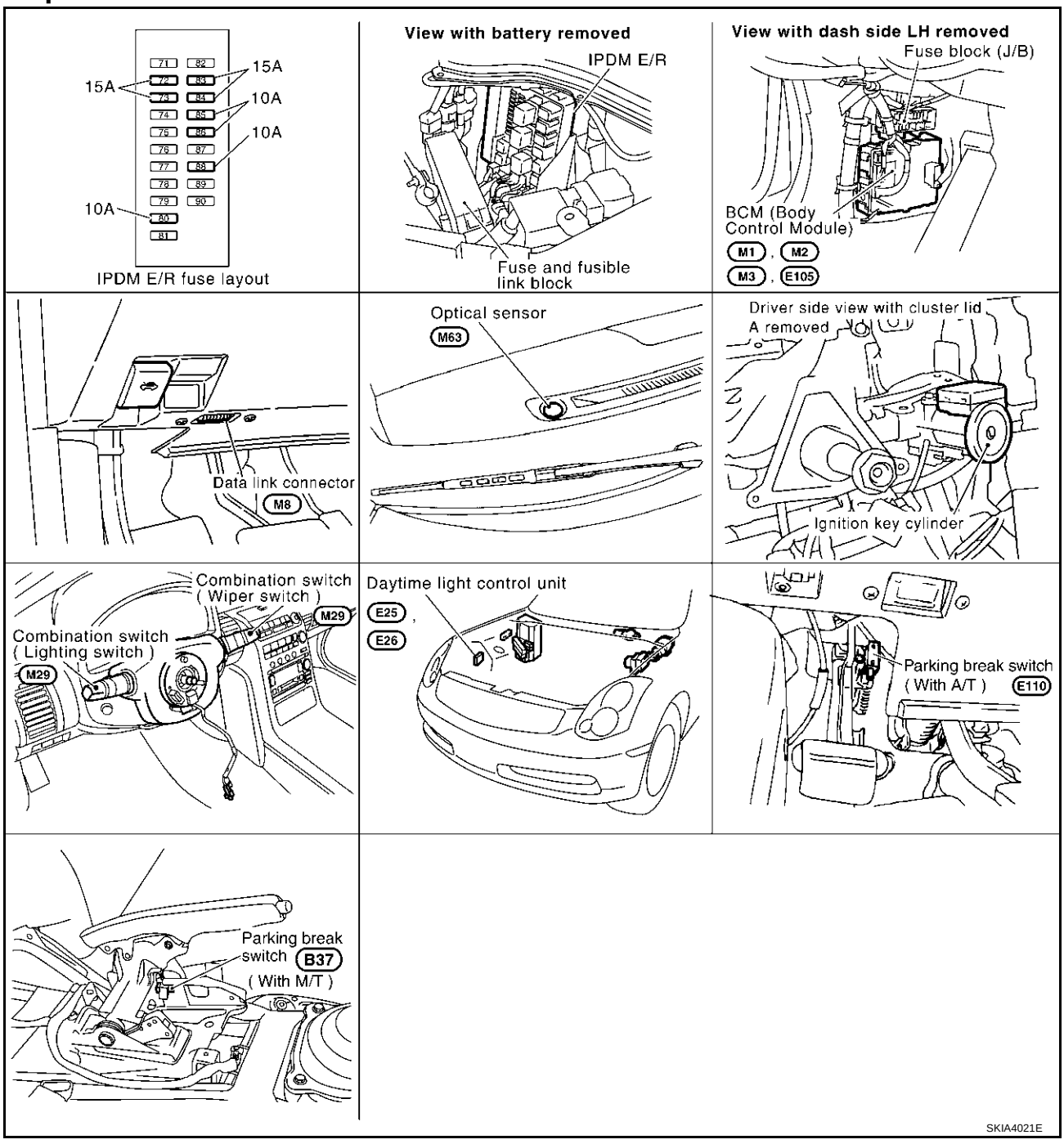


HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

PFP:26010

Component Parts and Harness Connector Location

AKS0038N



System Description

AKS0038O

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

And battery saver system is controlled by the BCM.

Power is supplied at all times

- to headlamp high relay located in the IPDM E/R (intelligent power distribution module engine room)
- to headlamp low relay located in the IPDM E/R (intelligent power distribution module engine room)
- to CPU (central processing unit) in the IPDM E/R (intelligent power distribution module engine room)

- through 15A fuse [No. 73, located in the IPDM E/R (intelligent power distribution module engine room)],

Power is also supplied at all times

- to BCM (body control module) terminal 7
- through 50A fusible link [letter F, located in the fuse and fusible link box].

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

- to daytime light control unit terminal 12
- through 10A fuse [No. 88, located in the IPDM E/R (intelligent power distribution module engine room)], and
- to BCM (body control module) terminal 35
- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to CPU (central processing unit) in the IPDM E/R (intelligent power distribution module engine room)
- through 10A fuse [No. 80, located in the IPDM E/R (intelligent power distribution module engine room)],

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

- to BCM (body control module) terminal 36
- through 10A fuse [No. 6, located in the fuse block (J/B)].

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

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

Ground is supplied

- to daytime light control unit terminal 9
- through grounds E17 and E43, and
- to BCM (body control module) terminal 8
- through grounds E17 and E43
- to IPDM E/R (intelligent power distribution module engine room) terminals 14 and 45
- through grounds E17 and E43.

HEADLAMP OPERATION

Low Beam Operation

With the lighting switch in 2ND position, the BCM (body control module) receives input signal requesting the headlamps to illuminate. This input signal is communicated to the IPDM E/R (intelligent power distribution module engine room) across the CAN communication lines. The CPU (central processing unit) in the IPDM E/R controls the headlamp low relay coil, which when energized, directs power

- to 15A fuse [No. 83, located in the IPDM E/R]
- through terminal 27 of the IPDM E/R
- to terminal 3 of headlamp RH, and
- to 15A fuse [No. 84, located in the IPDM E/R]
- through terminal 21 of the IPDM E/R
- to terminal 3 of headlamp LH.

Ground is supplied at all times

- to terminal 8 of headlamp RH
- through grounds E17 and E43, and
- to terminal 8 of headlamp LH
- through grounds E17 and E43.

With power and ground supplied, low beam headlamps illuminate.

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

With the lighting switch in 2ND position and placed in HIGH or PASS position, the BCM (body control module) receives input signal requesting the headlamp high beams to illuminate. This input signal is communicated to the IPDM E/R (intelligent power distribution module engine room) across the CAN communication lines. The CPU (central processing unit) in the IPDM E/R controls the headlamp high relay coil and daytime light relay-2 turned on, which when energized, directs power

- to 10A fuse [No. 85, located in the IPDM E/R]

- through terminal 22 of the IPDM E/R
- to terminal 22 of the IPDM E/R
- through terminal 5 of the daytime light control unit
- to terminal 6 of daytime light control unit
- through terminal 2 of headlamp LH
- to 10A fuse [No. 86, located in the IPDM E/R]
- through terminal 24 of the IPDM E/R
- to terminal 24 of the IPDM E/R
- through terminal 2 of the daytime light relay-2 and
- through terminal 1 of the daytime light control unit
- to 10A fuse [No. 86, located in the IPDM E/R]
- through terminal 24 of the IPDM E/R
- to terminal 24 of the IPDM E/R
- through terminal 5 of the daytime light relay-2
- to terminal 3 of daytime light relay-2
- through terminal 2 of headlamp RH.

Ground is supplied

- to terminal 1 of the daytime light relay-2
- through grounds E17 and E43
- to terminal 4 of headlamp RH
- through grounds E17 and E43
- to terminal 4 of headlamp LH
- through terminal 7 of the daytime light control unit
- to terminal 8 of headlamp RH
- through grounds E17 and E43
- to terminal 8 of headlamp LH
- through grounds E17 and E43
- to terminal 9 of the daytime light control unit
- through grounds E17 and E43.

When power and ground supplied, the high beam headlamps illuminate.
High beam indicator illuminates when combination meter receives input signal requesting high beam indicator to illuminate. This is communicated to BCM across the CAN communication lines.

COMBINATION SWITCH READING FUNCTION

Refer to LT-122, "Combination Switch Reading Function" .

EXTERIOR LAMP BATTERY SAVER CONTROL

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

AUTO LIGHT OPERATION

For auto light operation, refer to LT-63, "System Description" in “AUTO LIGHT SYSTEM”.

DAYTIME LIGHT OPERATION

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

- through daytime light control unit terminal 6
- to terminal 2 of headlamp LH
- through terminal 4 of headlamp LH
- to daytime light control unit terminal 7
- through daytime light control unit terminal 8

- to terminal 2 of headlamp RH.

Ground is supplied

- to terminal 4 of headlamp RH
- through grounds E17 and E43, and
- to daytime light control unit terminal 9
- through grounds E17 and E43.

Because the high beam headlamps are now wired in series, they operate at half illumination.
If the lighting switch is in the HIGH position, daytime light operation is canceled. On this occasion, power is supplied

- through terminal 24 of the IPDM E/R
- to daytime light control unit terminal 1

Daytime light control unit is canceled power suppling from terminal 8 to terminal 2 of headlamp RH (series power suppling is canceled). And then high beam is ON.

OPERATION

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

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

- Hi: “HIGH BEAM” position
- Lo: “LOW BEAM” position
- P: “FLASH TO PASS” position
- F: “FOG LAMP” SW is ON
- ×: 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 the 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 the headlamps stable quality and tone color.
Following are some of the many advantages of the xenon type headlamp.

- The light produced by the 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

AKS0038P

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

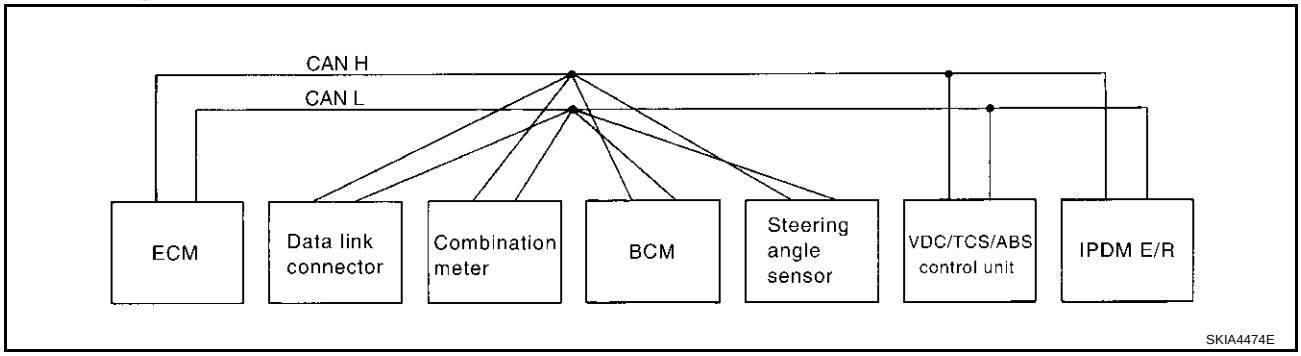
AKS005QC

Body type	Coupe	
Axle	2WD	
Engine	VQ35DE	
Transmission	M/T	A/T
Brake control	VDC	
CAN communication unit		
ECM	×	×
TCM		×
Data link connector	×	×
Combination meter	×	×
BCM	×	×
Steering angle sensor	×	×
VDC/TCS/ABS control unit	×	×
IPDM E/R	×	×
CAN communication type	LT-36	LT-38

×: Applicable

TYPE 1

System diagram



Input/output signal chart

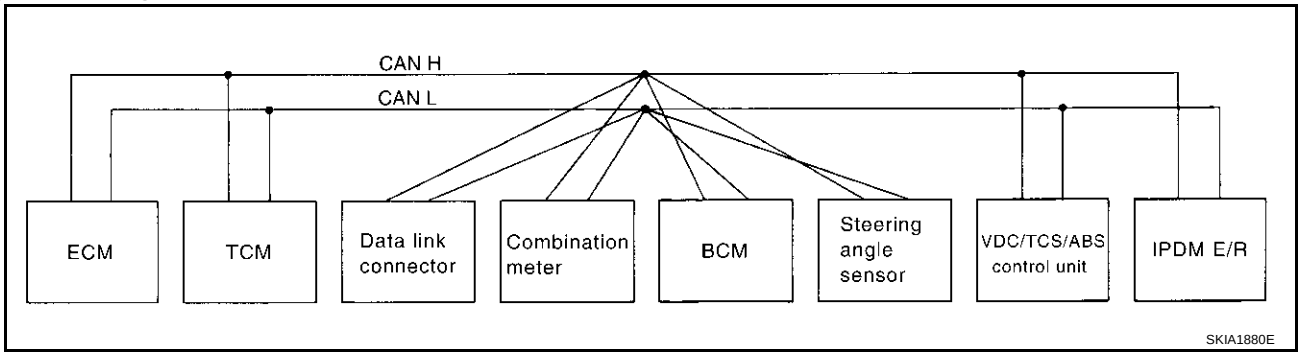
T: Transmit R: Receive

Signals	ECM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Engine speed signal	T	R			R	
Engine coolant temperature signal	T	R				
Accelerator pedal position signal	T				R	
Fuel consumption monitor signal	T	R				
Air conditioner switch signal	R		T			
A/C compressor request signal	T					R
A/C compressor feedback signal	T	R				

Signals	ECM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Blower fan motor switch signal	R		T			
Cooling fan motor operation signal	T					R
Position lights request signal		R	T			R
Low beam request signal			T			R
Low beam status signal	R		R			T
High beam request signal		R	T			R
High beam status signal	R		R			T
Front fog lights request signal			T			R
Vehicle speed signal		R			T	
	R	T	R			
Sleep request 1 signal		R	T			
Sleep request 2 signal			T			R
Wake up request 1 signal		R	T			
Wake up request 2 signal		R	T			
Door switch signal (without navigation system)		R	T			R
Door switch signal (with navigation system)		T	R			
Turn indicator signal		R	T			
Seat belt buckle switch signal		T	R			
Oil pressure switch signal		R				T
Buzzer output signal		R	T			
Trunk switch signal		R	T			
Malfunction indicator lamp signal	T	R				
ASCD SET lamp signal	T	R				
ASCD CRUISE lamp signal	T	R				
Fuel level sensor signal	R	T				
Front wiper request signal			T			R
Front wiper stop position signal			R			T
Rear window defogger switch signal			T			R
Rear window defogger control signal	R		R			T
Hood switch signal			R			T
Theft warning horn request signal			T			R
Horn chirp signal			T			R
Steering angle sensor signal				T	R	

TYPE 2

System diagram



Input/output signal chart

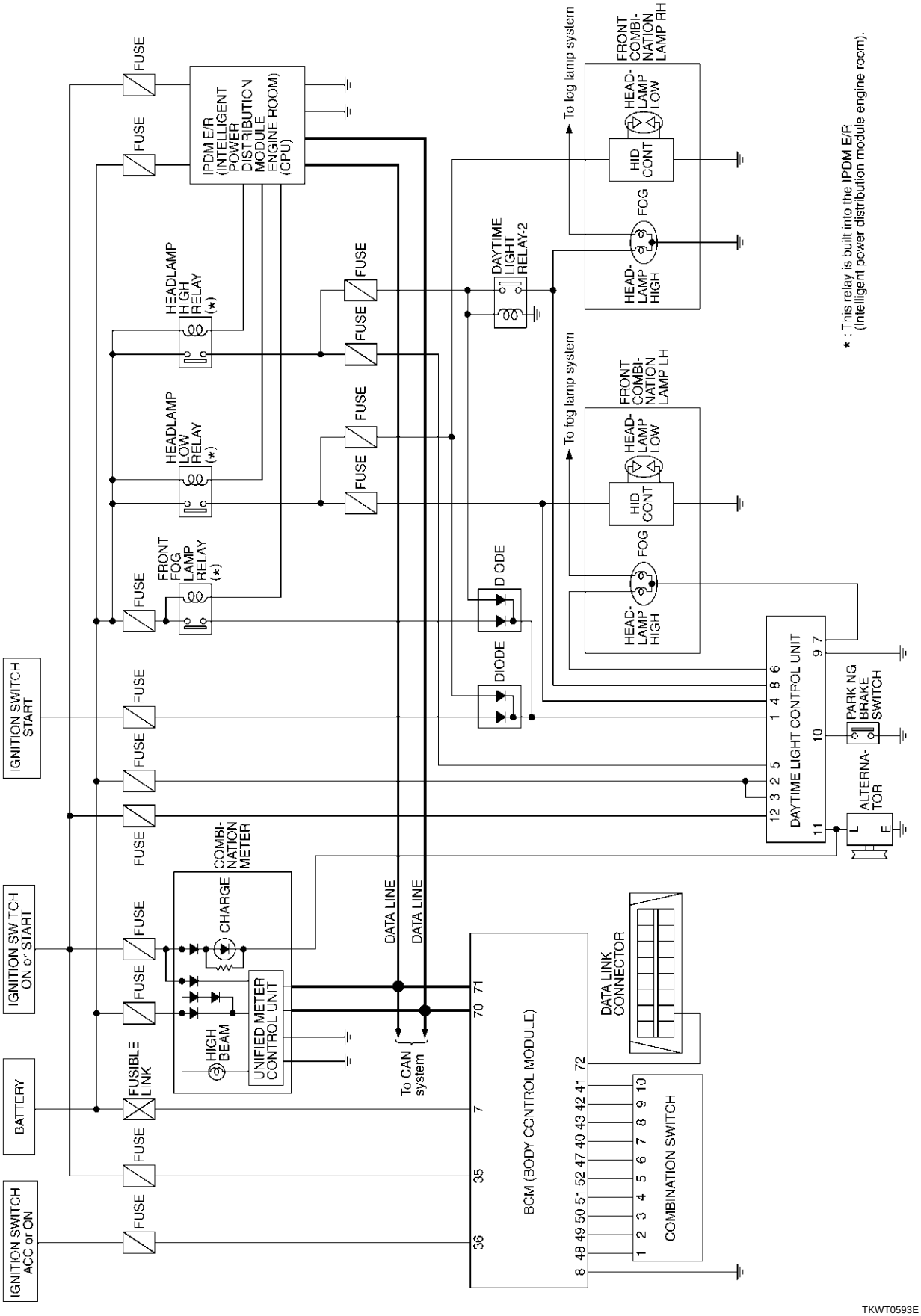
T: Transmit R: Receive

Signals	ECM	TCM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Engine speed signal	T	R	R			R	
Engine coolant temperature signal	T	R	R				
Accelerator pedal position signal	T	R				R	
Closed throttle position signal	T	R					
Wide open throttle position signal	T	R					
Battery voltage signal	T	R					
Stop lamp switch		R	T				
Fuel consumption monitor signal	T		R				
A/T self-diagnosis signal	R	T					
A/T CHECK indicator lamp signal		T	R				
A/T position indicator signal		T	R			R	
ABS operation signal		R				T	
A/T shift schedule change demand signal		R				T	
Air conditioner switch signal	R			T			
A/C compressor request signal	T						R
A/C compressor feedback signal	T		R				
Blower fan motor switch signal	R			T			
Cooling fan motor operation signal	T						R
Position lights request signal			R	T			R
Low beam request signal				T			R
Low beam status signal	R			R			T
High beam request signal			R	T			R
High beam status signal	R			R			T
Front fog lights request signal				T			R
Vehicle speed signal			R			T	
	R	R	T	R			
Sleep request 1 signal			R	T			
Sleep request 2 signal				T			R
Wake up request 1 signal			R	T			
Wake up request 2 signal			R	T			

Signals	ECM	TCM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Door switch signal (without navigation system)			R	T			R
Door switch signal (with navigation system)			T	R			
Turn indicator signal			R	T			
Seat belt buckle switch signal			T	R			
Oil pressure switch signal			R				T
Buzzer output signal			R	T			
Trunk switch signal			R	T			
Malfunction indicator lamp signal	T		R				
ASCD SET lamp signal	T		R				
ASCD CRUISE lamp signal	T		R				
Fuel level sensor signal	R		T				
Output shaft revolution signal	R	T					
Turbine revolution signal	R	T					
Front wiper request signal				T			R
Front wiper stop position signal				R			T
Rear window defogger switch signal				T			R
Rear window defogger control signal	R			R			T
Manual mode signal		R	T				
Not manual mode signal		R	T				
Manual mode shift up signal		R	T				
Manual mode shift down signal		R	T				
Manual mode indicator signal		T	R				
Hood switch signal				R			T
Theft warning horn request signal				T			R
Horn chirp signal				T			R
Steering angle sensor signal					T	R	

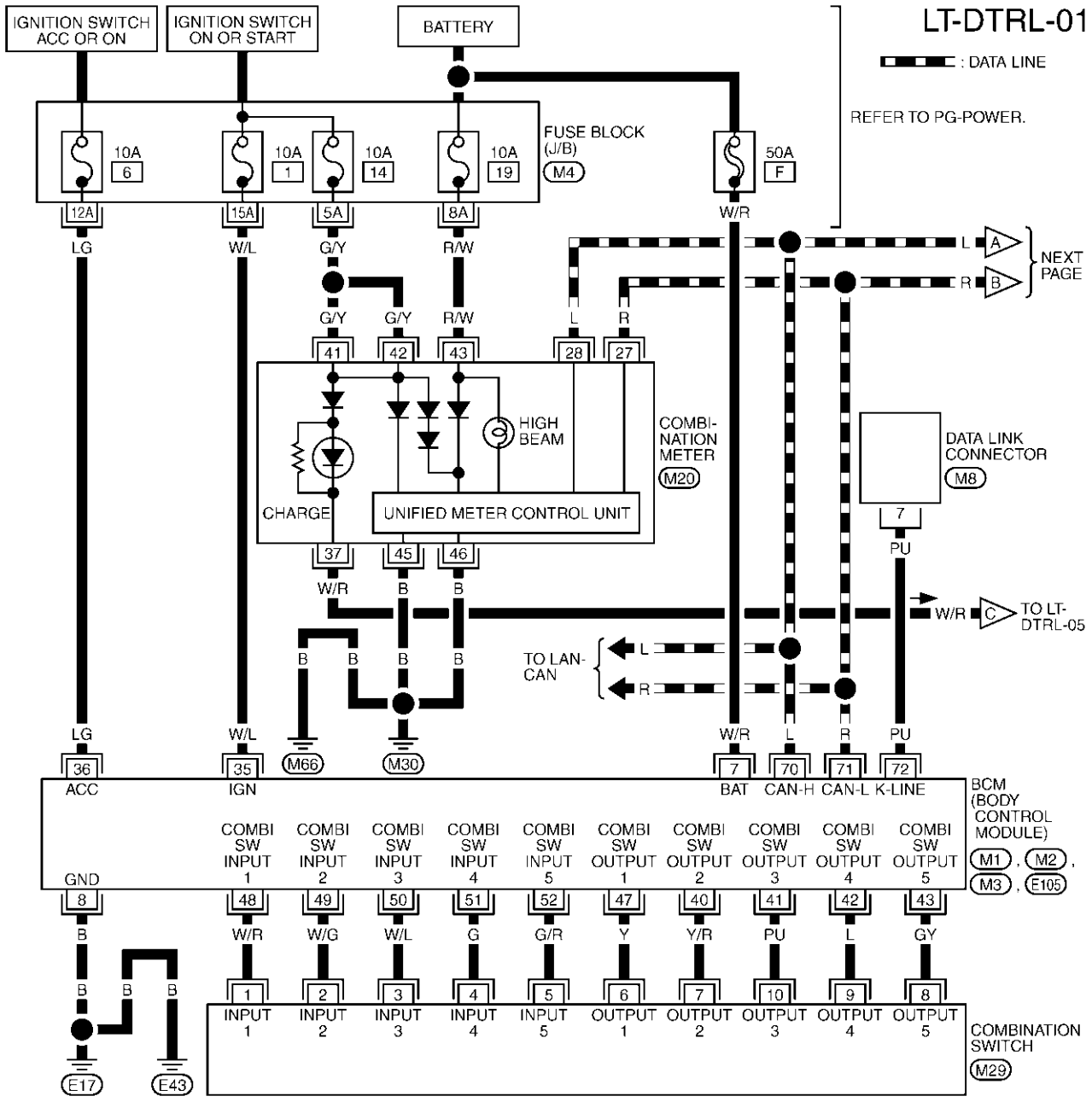
Schematic

AKS0038R

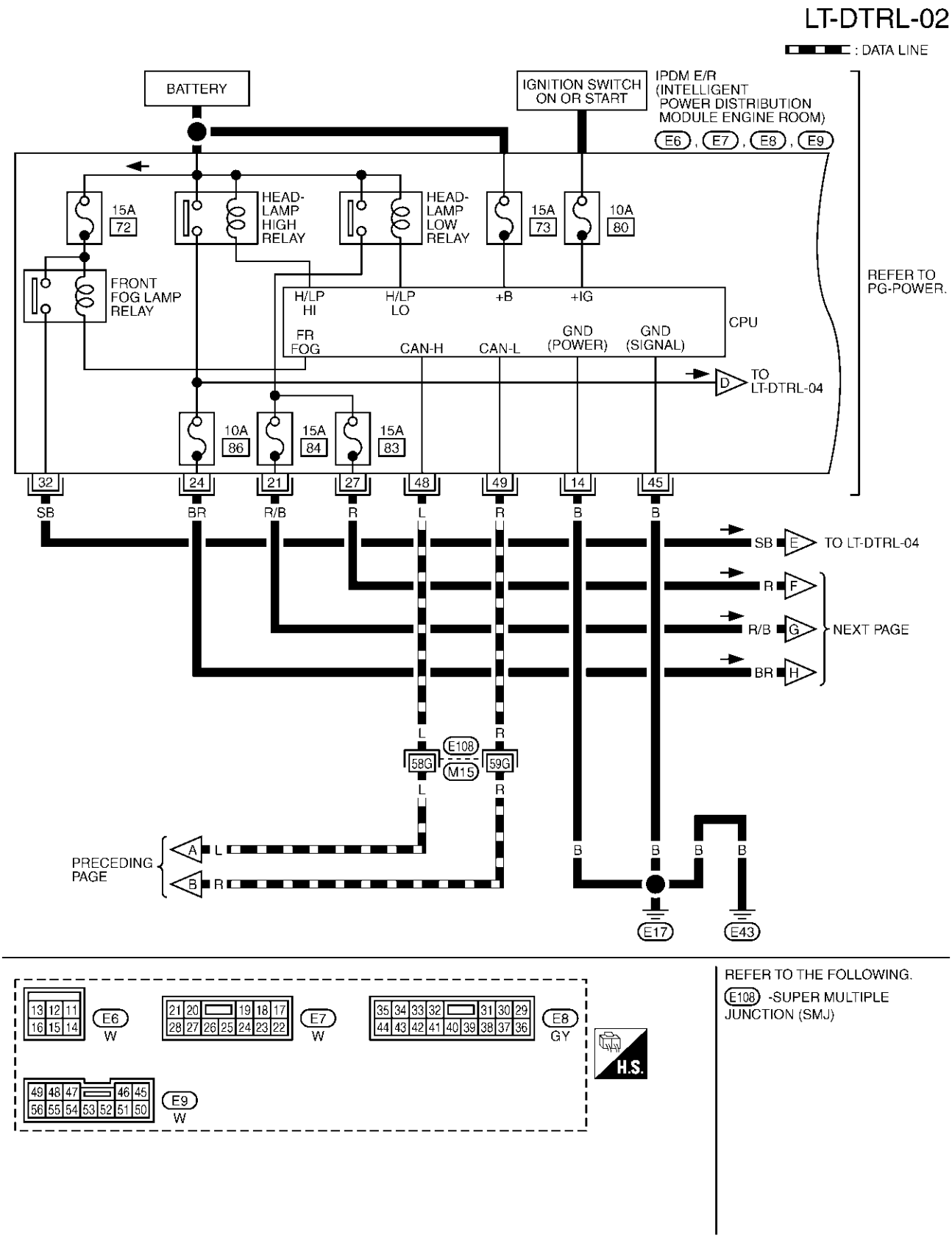


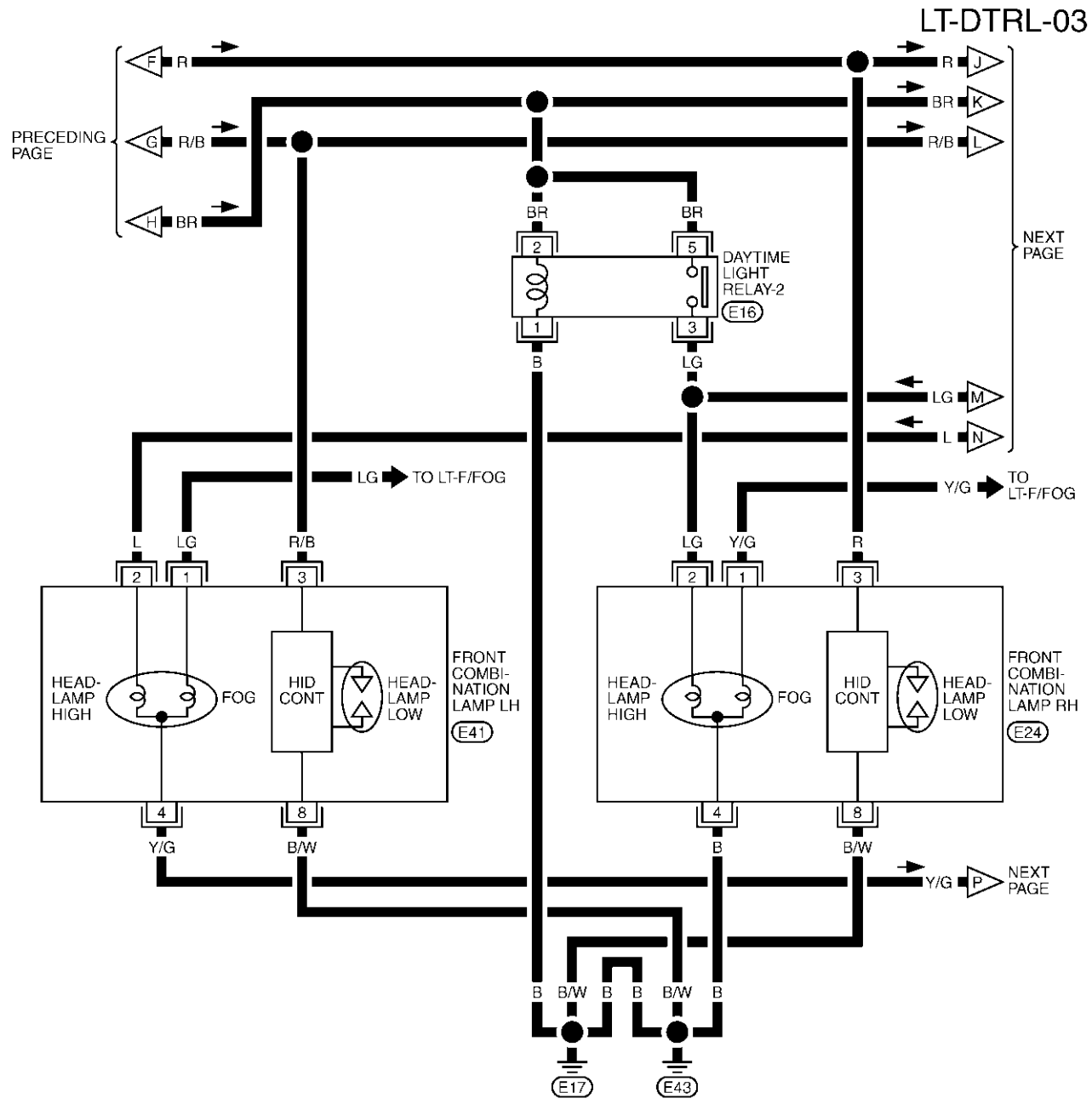
Wiring Diagram — DTRL —

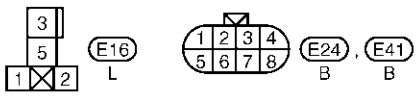
AKS0038S



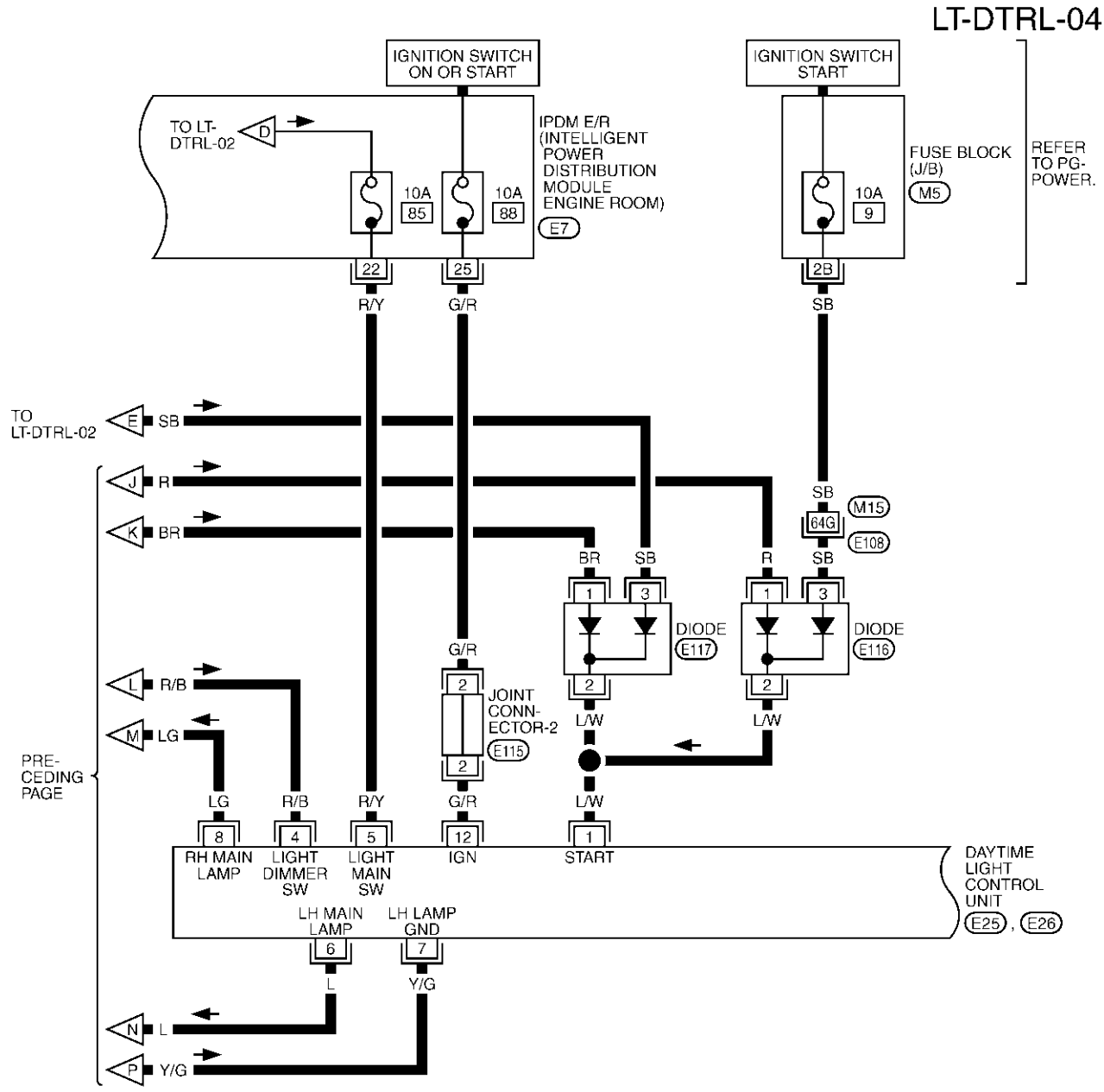
TKWT0594E

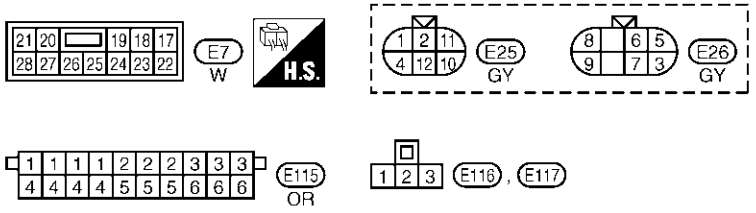

LT-DTRL-02
: DATA LINE
BATTERY
IGNITION SWITCH ON OR START
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E6, E7, E8, E9
15A 72
HEAD-LAMP HIGH RELAY
HEAD-LAMP LOW RELAY
15A 73
10A 80
FRONT FOG LAMP RELAY
H/LP HI
H/LP LO
+B
+IG
FR FOG
CAN-H
CAN-L
GND (POWER)
GND (SIGNAL)
CPU
REFER TO PG-POWER.
TO LT-DTRL-04
10A 86
15A 84
15A 83
32
24
21
27
48
49
14
45
SB
BR
R/B
R
L
R
B
B
SB E TO LT-DTRL-04
R F
R/B G
BR H
NEXT PAGE
E108
M15
58G
59G
PRECEDING PAGE
A L
B R
E17
E43
E6 W
E7 W
E8 GY
E9 W
H.S.
REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
TKWT0595E


LT-DTRL-03
PRECEDING PAGE
F R
G R/B
H BR
R J
BR K
R/B L
NEXT PAGE
BR
BR
2
5
DAYTIME LIGHT RELAY-2
E16
1
3
B
LG
LG M
L N
LG
TO LT-F/FOG
Y/G
TO LT-F/FOG
L
LG
R/B
LG
Y/G
R
2
1
3
2
1
3
HEAD-LAMP HIGH
FOG
HID CONT
HEAD-LAMP LOW
FRONT COMBI-NATION LAMP LH
E41
HEAD-LAMP HIGH
FOG
HID CONT
HEAD-LAMP LOW
FRONT COMBI-NATION LAMP RH
E24
4
8
4
8
Y/G
B/W
B
B/W
Y/G P
NEXT PAGE
B B/W B B B/W B
E17
E43


3
5
1 2
E16
L
1 2 3 4
5 6 7 8
E24
B
E41
B

TKWT0596E



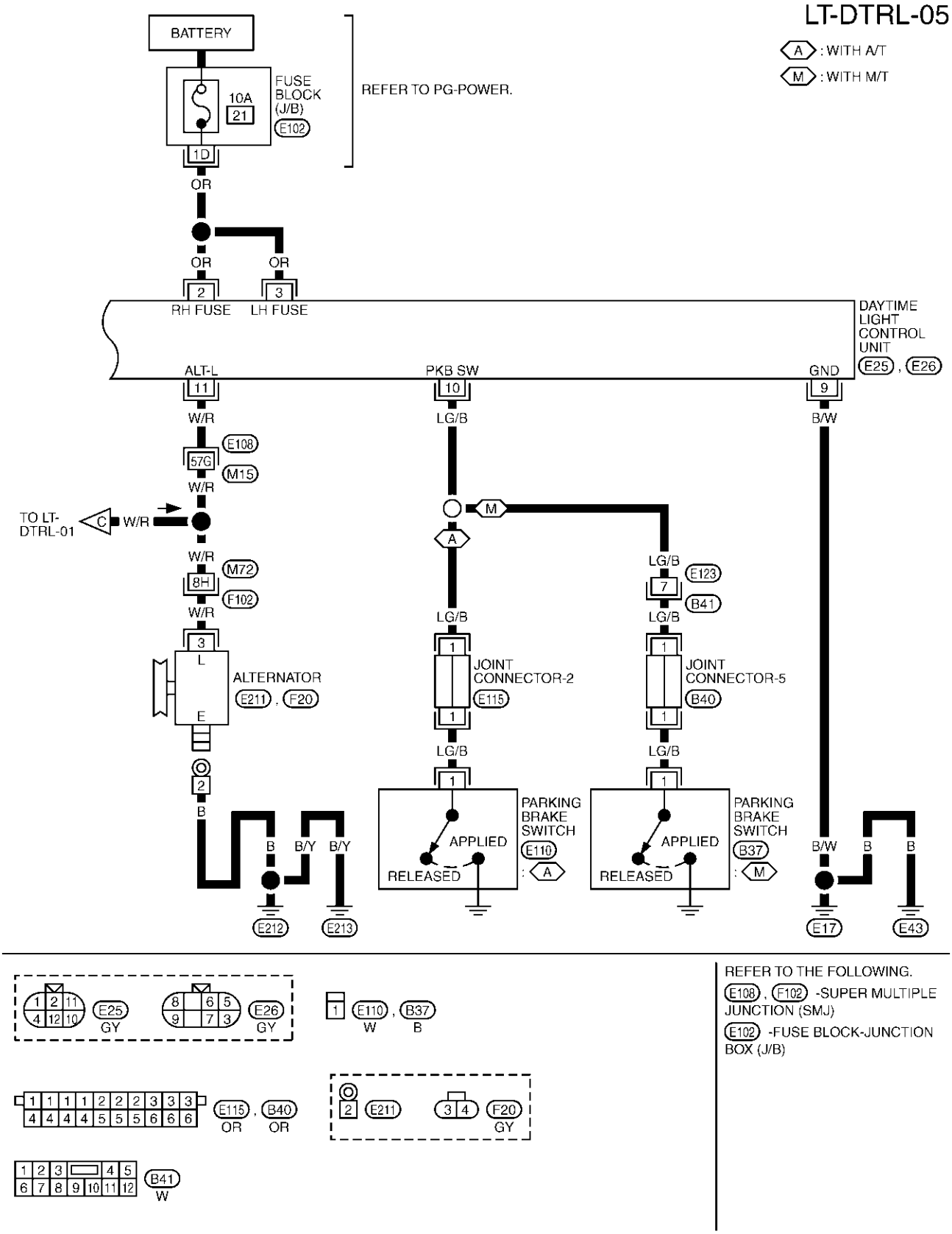


REFER TO THE FOLLOWING.

E108 -SUPER MULTIPLE JUNCTION (SMJ)

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

TKWT0597E


LT-DTRL-05
A : WITH A/T
M : WITH M/T
BATTERY
FUSE BLOCK (J/B) E102
10A 21
1D
REFER TO PG-POWER.
OR
OR
OR
2
3
RH FUSE
LH FUSE
DAYTIME LIGHT CONTROL UNIT E25, E26
ALT-L 11
PKB SW 10
GND 9
W/R
LG/B
B/W
E108
57G
M15
TO LT-DTRL-01
C
W/R
M
A
W/R
M72
8H
F102
W/R
3
L
E
ALTERNATOR E211, F20
2
B
LG/B
1
JOINT CONNECTOR-2 E115
LG/B
1
LG/B
1
PARKING BRAKE SWITCH E110 : A
APPLIED
RELEASED
LG/B
E123
7
B41
LG/B
1
JOINT CONNECTOR-5 B40
LG/B
1
PARKING BRAKE SWITCH B37 : M
APPLIED
RELEASED
B
B/Y
B/Y
B/W
B
B
E212
E213
E17
E43
E25 GY
E26 GY
E110, B37 W B
E115, B40 OR OR
E211
F20 GY
B41 W
REFER TO THE FOLLOWING.
E108, F102 -SUPER MULTIPLE JUNCTION (SMJ)
E102 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT0598E

Terminals and Reference Value for Daytime Light Control Unit

AKS0038T

Terminal No.	Wire color	Item	Condition	Reference value
1	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
2	OR	RH light fuse	—	Battery voltage
3	OR	LH light fuse	—	Battery voltage
4	R/B	Lighting switch (Low beam)	When turning lighting switch to “LOW BEAM”	Battery voltage
5	R/Y	Lighting switch (Hi beam)	When turning lighting switch to “HI BEAM”	Battery voltage
6	L	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
7	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
8	LG	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
9	B/W	Ground	—	—
10	LG/B	Parking brake switch	When parking brake is released	Battery voltage
			When parking brake is applied	Approx.0V
11	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
12	G/R	Ignition power supply	When turning ignition switch to “ON”	Battery voltage

Terminals and Reference Values for BCM

AKS004CV

Refer to LT-17, "Terminals and Reference Value for BCM" .

Terminals and Reference Values for IPDM E/R

AKS004CU

Termi-nal No.	Wire color	Signal name	Measuring condition			Reference value
			Igni-tion switch	Operation or condition		
14	B	Ground	ON	—		Approx. 0V
21	R/B	Headlamp low (LH)	ON	Lighting switch 2ND position	OFF	Approx. 0V
					ON	Battery voltage

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
22	R/Y	Headlamp high (LH)	ON	Lighting switch HIGH or PASS position	OFF	Approx. 0V
					ON	Battery voltage
24	BR	Headlamp high (RH)	ON	Lighting switch HIGH or PASS position	OFF	Approx. 0V
					ON	Battery voltage
25	G/R	Ignition power supply	ON	When turning ignition switch to “ON”		Battery voltage
27	R	Headlamp low (RH)	ON	Lighting switch 2ND position	OFF	Approx. 0V
					ON	Battery voltage
32	SB	Front fog lamp	ON	Lighting switch must be in the 2ND position or AUTO position (LOW beam is ON) and the front fog lamp switch must be ON	OFF	Approx. 0V
					ON	Battery voltage
45	B	Ground	ON	—		Approx. 0V
48	L	CAN– H	—	—		—
49	R	CAN– L	—	—		—

How to Proceed With Trouble Diagnosis

AKS0038U

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-32, "System Description" .
3. Carry out the Preliminary Inspection. Refer to LT-47, "Preliminary Inspection" .
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 Inspection

AKS0038V

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown fuses.

UNIT	POWER SOURCE	FUSE No.
BCM	Battery	F
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
IPDM E/R	Battery	83
		84
		85
		86
DAYTIME LIGHT CONTROL UNIT	Ignition switch START position	9
	Ignition switch ON or START position	88

Refer to LT-41, "Wiring Diagram — DTRL —" .

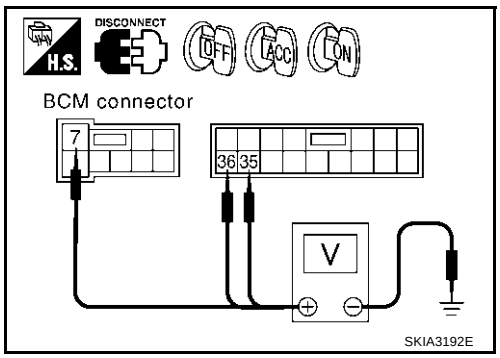
OK or NG

OK >> GO TO 2.

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

2. CHECK POWER SUPPLY CIRCUIT

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



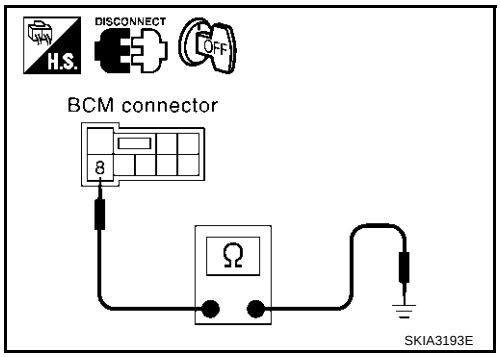
Terminals			Ignition switch position		
(+)		(–)			
Connector	Terminal (Wire color)		OFF	ACC	ON
E105	7 (W/R)	Ground	Battery voltage	Battery voltage	Battery voltage
M1	35 (W/L)		0V	0V	Battery voltage
M1	36 (LG)		0V	Battery voltage	Battery voltage

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)		
E105	8 (B)	Ground	Yes

OK or NG

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

CONSULT-II Function

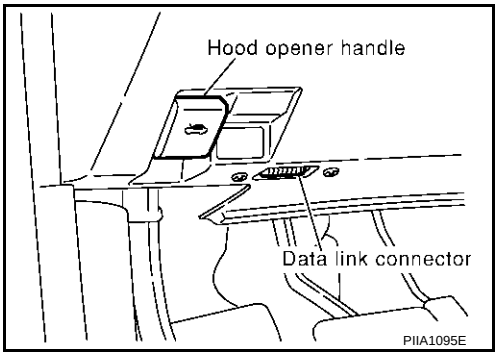
AKS0038W

CONSULT-II performs the following functions communicating with BCM.

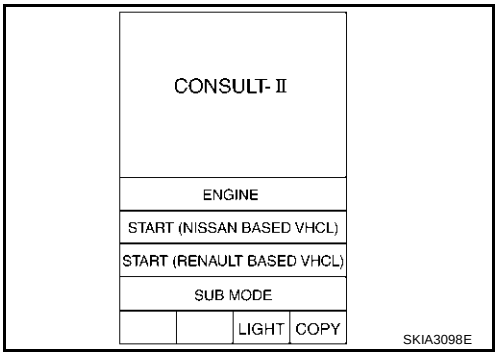
BCM diagnosis part	Check item, diagnosis mode	Description
HEAD LAMP	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
BCM C/U	CAN DIAG SUPPORT MNTR	The result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

CONSULT-II BASIC OPERATION

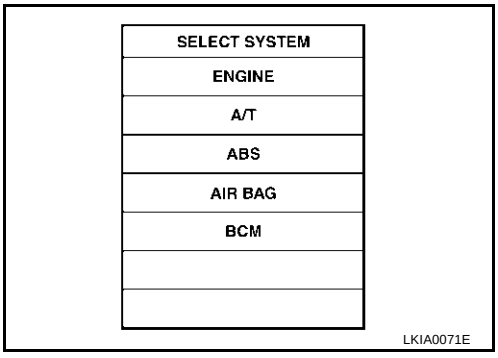
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



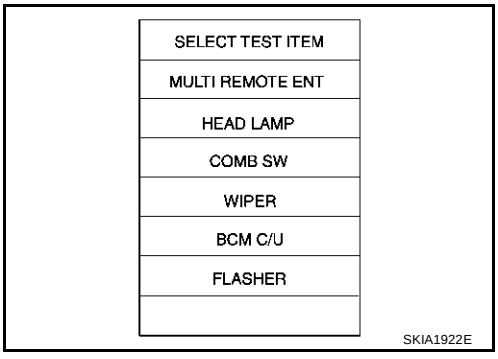
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “BCM” on “SELECT SYSTEM” screen.
If “BCM” is not indicated, go to GI-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 SETT”.
6. The setting will be changed and “CUSTOMIZING COMPLETED” will be displayed.
7. Touch “END”.

Display Item List

Item	Description	CONSULT-II	Factory setting
BATTERY SAVER SET	Exterior lamp battery saver control mode can be changed in this mode. Selects exterior lamp battery saver control mode between 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 the “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.
AUTO LIGHT SW[Note 1]	“ON/OFF”	Displays status of the lighting switch as judged from the lighting switch signal. (AUTO position: ON/Other than AUTO position: OFF)
TAIL LAMP SW	“ON/OFF”	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
HEAD LAMP SW 1	“ON/OFF”	Displays status (headlamp switch 1: ON/Others: OFF) of headlamp switch 1 judged 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.
PASSING SW	“ON/OFF”	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW	“ON/OFF”	Displays status (front fog switch: ON/Others: OFF) of front fog switch judged from lighting switch signal.
DOOR SW - DR	“ON/OFF”	Displays status of the driver door as judged from the driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - AS	“ON/OFF”	Displays status of the passenger door as judged from the passenger door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RR[Note 2]	“OFF”	—

Monitor item		Contents
HEAD LAMP SW 2	“ON/OFF”	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
OPTICAL SENSOR	[0 - 5V]	Displays “ambient light (close to 5V when light/close to 0V when dark)” judged from optical sensor signal.

NOTE:
Note 1: Even vehicles without auto light system display this item, but cannot monitor it.
Note 2: 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

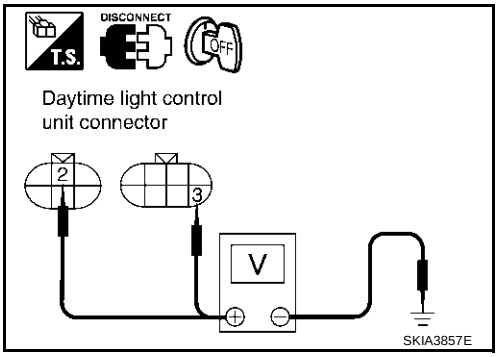
Test item	Description
TAIL LAMP	Allows tail lamp relay to operate by switching ON–OFF.
HEAD LAMP (LOW)	Allows headlamp relay to operate by switching ON–OFF.
HEAD LAMP (HI)	Allows headlamp relay to operate by switching ON–OFF.
FR FOG LAMP	Allows fog lamp relay to operate by switching ON–OFF.

Daytime Light Control Does Not Operate Properly

AKS0038X

1. CHECK DAYTIME LIGHT CONTROL UNIT

1. Disconnect daytime light control unit connector.
2. Check voltage between harness connector of daytime light control unit and ground.



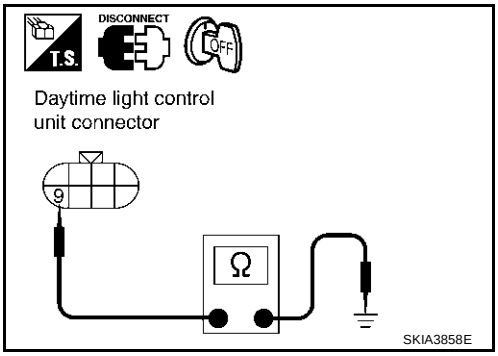
Terminals			
Daytime light control unit		Ground	Voltage
Connector	Terminal (Wire color)		
E25	2 (OR)		Battery voltage
E26	3 (OR)		

OK or NG

OK >> GO TO 2.
NG >> Repair or replace daytime light control unit power supply circuit harness.

2. INSPECTION: DAYTIME LIGHT CONTROL UNIT AND GROUND

Check continuity between harness connector of daytime light control unit and ground.



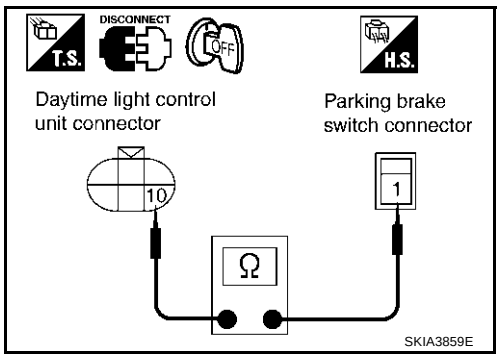
Terminals			
Daytime light control unit		Ground	Continuity
Connector	Terminal (Wire color)		
E26	9 (B)		Yes

OK or NG

OK >> GO TO3.
NG >> Repair harness or connector.

3. INSPECTION 1: PARKING BRAKE SWITCH

1. Disconnect parking brake switch connector.
2. Check continuity between harness connector of daytime light control unit and harness connector of parking brake switch.



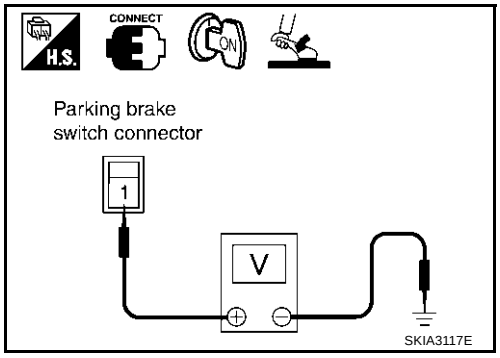
Terminals				Continuity
Daytime light control unit		Parking brake switch		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
E25	10 (LG/B)	E110 (with A/T)	1 (LG/B)	Yes
		B37 (with M/T)	1 (LG/B)	

OK or NG

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

4. INSPECTION 2: PARKING BRAKE SWITCH

1. Connect daytime light control unit connector and parking brake switch connector.
2. Turn ignition switch ON.
3. Check voltage between harness connector of parking brake switch and ground, when parking brake is released.



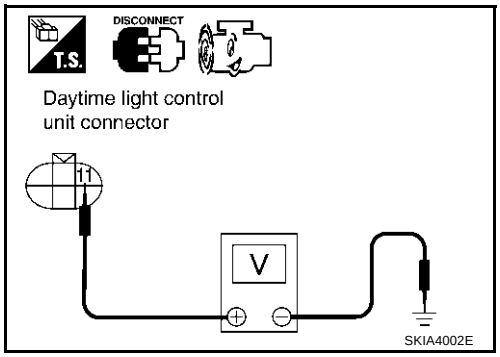
Terminals			Condition	Voltage
Parking brake switch		Ground		
Connector	Terminal (Wire color)			
E110 (with A/T)	1 (LG/B)		Not released	Approx. 0V
B37 (with M/T)			Released	Battery voltage

OK or NG

OK >> GO TO 5.
NG >> Replace parking brake switch.

5. CHECK ALTERNATOR

1. Turn ignition switch OFF.
2. Disconnect daytime light control unit connector.
3. Start engine running.
4. Check voltage between harness connector of daytime light control unit and ground.



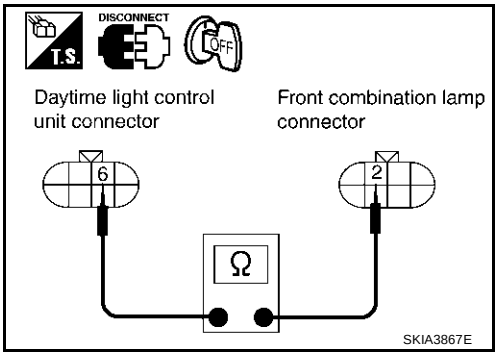
Terminals			Condition	Voltage
Daytime light control unit		Ground		
Connector	Terminal (Wire color)			
E25	11 (W/R)		Engine stopped	Approx. 0V
			Engine running	Battery voltage

OK or NG

OK >> GO TO 6.
NG >> Repair harness or connector.

6. INSPECTION: DAYTIME LIGHT CONTROL UNIT AND HEADLAMP

1. Turn ignition switch OFF.
2. Disconnect daytime light control unit connector and LH front combination lamp connector.
3. Check continuity between harness connector of daytime light control unit and harness connector of LH front combination lamp.



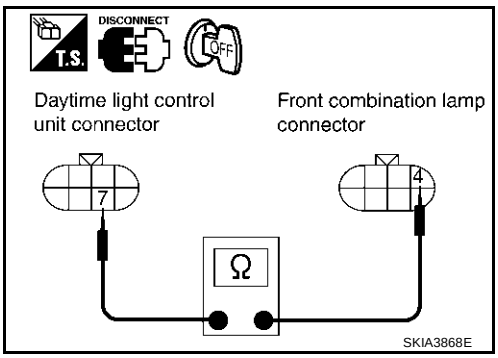
Terminals				Continuity
Daytime light control unit		Front combination lamp LH		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
E26	6 (L)	E41	2 (L)	Yes

OK or NG

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

7. INSPECTION: DAYTIME LIGHT CONTROL UNIT AND HEADLAMP

Check continuity between harness connector of daytime light control unit and harness connector of LH front combination lamp.



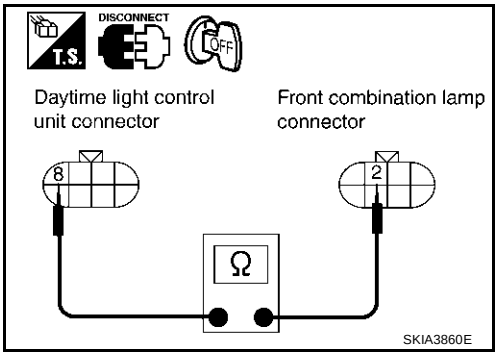
Terminals				Continuity
Daytime light control unit		Front combination lamp LH		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
E26	7 (Y/G)	E41	4 (Y/G)	Yes

OK or NG

OK >> GO TO 8.
NG >> Repair harness or connector.

8. INSPECTION: DAYTIME LIGHT CONTROL UNIT AND HEADLAMP

1. Disconnect RH front combination lamp connector.
2. Check continuity between harness connector of daytime light control unit and harness connector of RH front combination lamp.



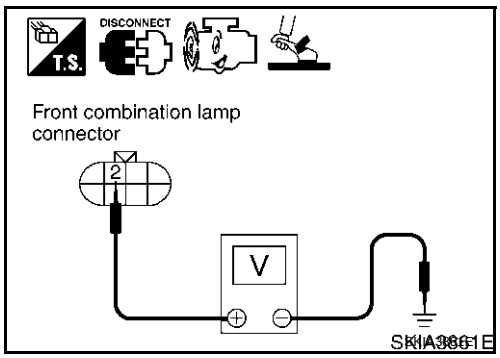
Terminals				Continuity
Daytime light control unit		Front combination lamp RH		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
E26	8 (LG)	E24	2 (LG)	Yes

OK or NG

OK >> GO TO 9.
NG >> Repair harness or connector.

9. CHECK DAYTIME LIGHT CONTROL UNIT

1. Connect daytime light control unit connector and LH front combination lamp connector.
2. Check voltage between harness connector of RH front combination lamp and ground, when releasing parking brake with engine running and turning lighting switch to “OFF”.



Terminals			Voltage
Front combination lamp RH		Ground	
Connector	Terminal (Wire color)		
E24	2 (LG)		Battery voltage

OK or NG

OK >> Check headlamp bulb.
NG >> Replace daytime light control unit.

Headlamp HI Does Not Illuminate (Both Sides)

AKS0038Y

1. INSPECTION 1: IPDM E/R AND HEADLAMPS

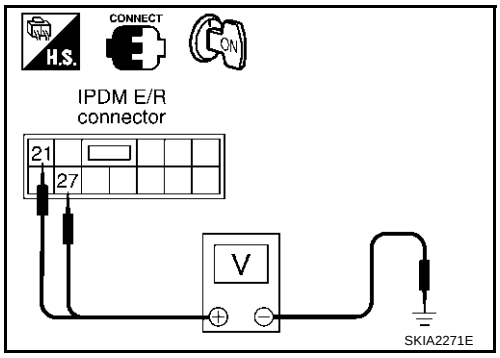
1. Start auto active test. Refer to PG-22, "Auto Active Test" .
2. Check whether headlamp HI operates.

OK or NG

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

2. CHECK IPDM E/R

Start auto active test. Refer to PG-22, "Auto Active Test" . When headlamp HI is operating, check voltage between harness connector of IPDM E/R and ground.



Terminals			Voltage
IPDM E/R		Ground	
Connector	Terminal (Wire color)		
E7	21 (R/B)		Battery voltage
	27 (R)		

OK or NG

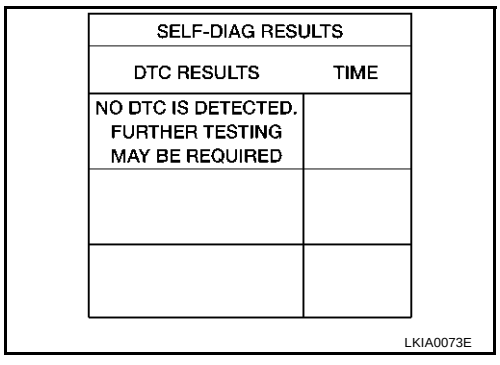
OK >> Check headlamp bulbs.
NG >> Replace IPDM E/R.

3. INSPECTION 1: COMBINATION SWITCH AND BCM

Select “BCM” on CONSULT-II. Carry out “BCM C/U” self-diagnosis.

Displayed results of self-diagnosis

No malfunction detected>> GO TO 4.
CAN communications or CAN system>> Inspect the BCM CAN communications system. Refer to BCS-17, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" .
OPEN DETECT 1 - 5>> Combination switch system malfunction. Refer to LT-128, "Combination Switch Inspection According to Self-Diagnostic Results" .



SELF-DIAG RESULTS	
DTC RESULTS	TIME
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	

LKIA0073E

4. INSPECTION 2: COMBINATION SWITCH AND BCM

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

OK or NG

OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM"

NG >> Replace lighting switch.

DATA MONITOR	
MONITOR	
IGN ON SW	ON
ACC ON SW	ON
AUTO LIGHT SW	OFF
TAIL LAMP SW	OFF
HEAD LAMP SW 1	OFF
HI BEAM SW	OFF
PASSING SW	OFF
FR FOG SW	OFF
DOOR SW-DR	OFF

SKIA4603E

RH HI Does Not Illuminate But RH LO Illuminates

AKS0038Z

1. CHECK BULB

Inspect bulb of lamp.

OK or NG

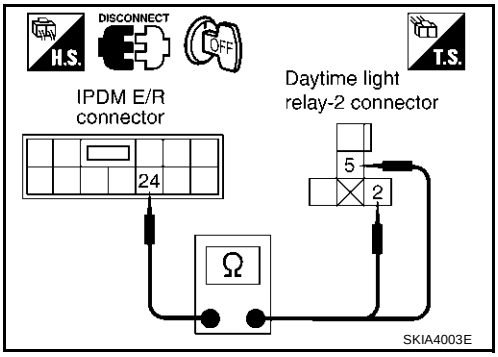
OK >> GO TO 2.

NG >> Replace bulb of lamp.

2. INSPECTION: IPDM E/R AND DAYTIME LIGHT RELAY–2

1. Disconnect IPDM E/R connector and daytime light relay–2.
2. Check continuity between harness connector of IPDM E/R and harness connector of daytime light relay–2.

Terminals				Continuity
IPDM E/R		Daytime light relay-2		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
E7	24 (BR)	E16	2 (BR)	Yes
			5 (BR)	



OK or NG

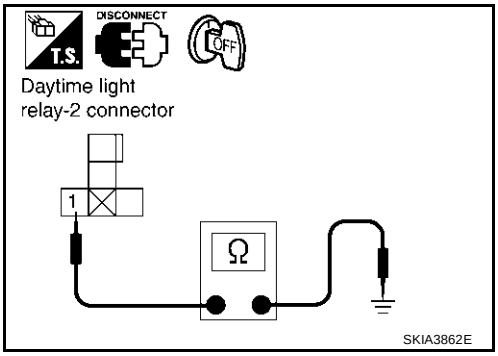
OK >> GO TO 3.

NG >> Repair harness or connector.

3. INSPECTION: DAYTIME LIGHT RELAY–2 AND GROUND

Check continuity between harness connector of daytime light relay–2 and ground.

Terminals			Continuity
Daytime light relay–2		Ground	
Connector	Terminal (Wire color)		
E16	1 (B)		Yes



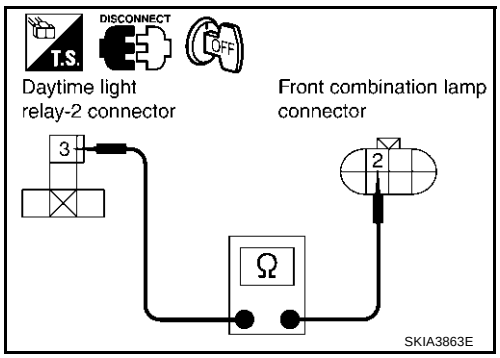
OK or NG

OK >> GO TO 4.

NG >> Repair harness or connector.

4. INSPECTION: DAYTIME LIGHT RELAY–2 AND HEADLAMP

1. Disconnect RH front combination lamp connector.
2. Check continuity between harness connector of daytime light relay–2 and harness connector of front combination lamp RH.



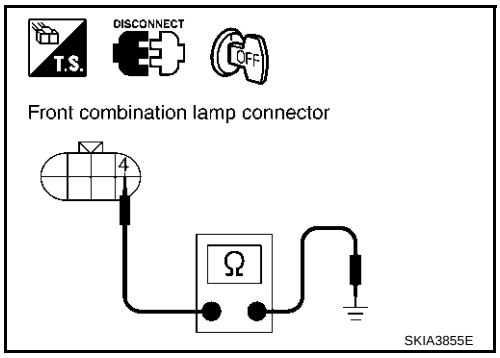
Terminals				Continuity
Daytime light relay–2		Front combination lamp RH		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
E16	3 (LG)	E24	2 (LG)	Yes

OK or NG

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

5. INSPECTION: HEADLAMP AND GROUND

Check continuity between harness connector of RH front combination lamp ground.



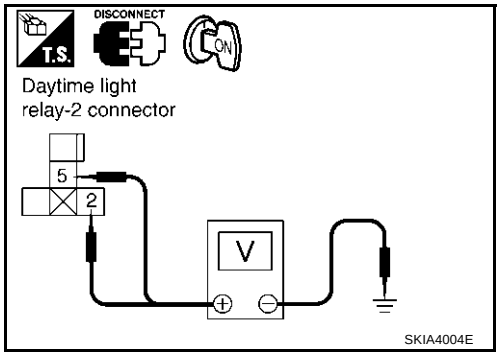
Terminals			Continuity
Front combination lamp RH		Ground	
Connector	Terminal (Wire color)		
E24	4 (B)		Yes

OK or NG

OK >> GO TO 6.
NG >> Repair harness or connector.

6. CHECK IPDM E/R

1. Connect IPDM E/R connector.
2. Start auto active test. Refer to PG-22, "Auto Active Test" . When headlamp HI is operating, check voltage between harness connector of daytime light relay–2 and ground.



Terminals			Voltage
Daytime light relay–2		Ground	
Connector	Terminal (Wire color)		
E16	5 (BR)		Battery voltage
	2 (BR)		

OK or NG

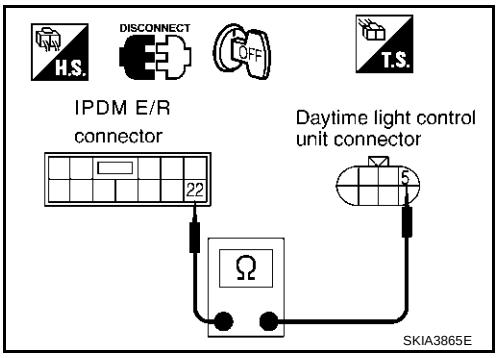
OK >> Replace daytime light relay–2.
NG >> Replace IPDM E/R.

LH HI Does Not Illuminate But LH LO Illuminates

AKS00390

1. INSPECTION: IPDM E/R AND DAYTIME LIGHT CONTROL UNIT

1. Disconnect IPDM E/R connector and daytime light control unit connector.
2. Check continuity between harness connector of IPDM E/R and harness connector of daytime light control unit.



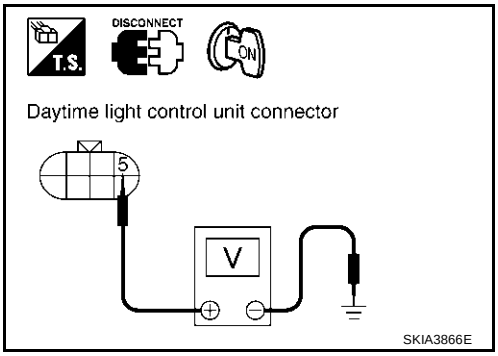
Terminals				Continuity
IPDM E/R		Daytime light control unit		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
E7	22 (R/Y)	E26	5 (R/Y)	Yes

OK or NG

OK >> GO TO 2.
NG >> Repair harness or connector.

2. CHECK IPDM E/R

1. Connect IPDM E/R connector.
2. Start auto active test. Refer to PG-22, "Auto Active Test" . When headlamp HI is operating, check voltage between harness connector of daytime light control unit and ground.



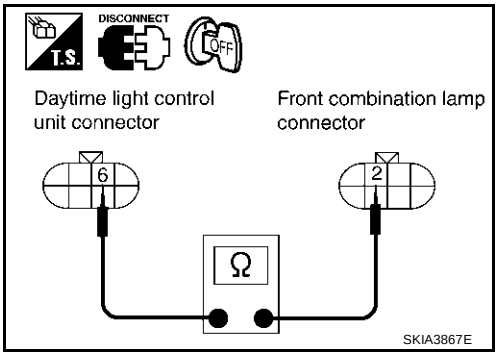
Terminals			Voltage
Daytime light control unit		Ground	
Connector	Terminal (Wire color)		
E26	5 (R/Y)		Battery voltage

OK or NG

OK >> GO TO 3.
NG >> Replace IPDM E/R.

3. INSPECTION: DAYTIME LIGHT CONTROL UNIT AND HEADLAMP

1. Turn ignition switch OFF.
2. Disconnect daytime light control unit connector and LH front combination lamp connector.
3. Check continuity between harness connector of daytime light control unit and harness connector of LH front combination lamp.



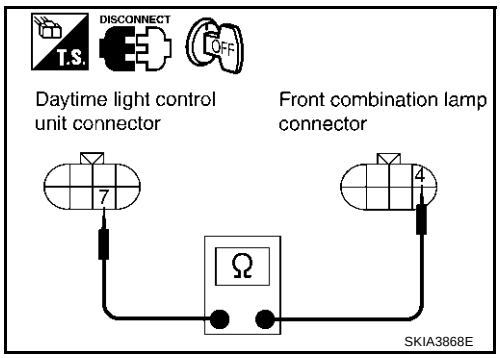
Terminals				Continuity
Daytime light control unit		Front combination lamp LH		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
E26	6 (L)	E41	2 (L)	Yes

OK or NG

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

4. INSPECTION: DAYTIME LIGHT CONTROL UNIT AND HEADLAMP

Check continuity between harness connector of daytime light control unit and harness connector of LH front combination lamp.



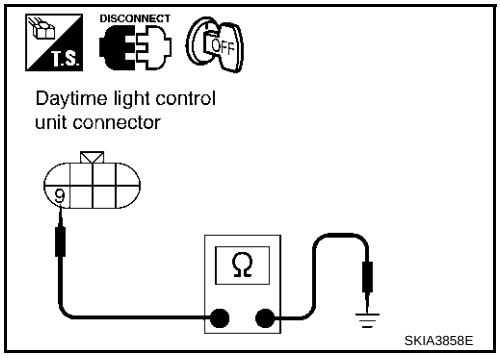
Terminals				Continuity
Daytime light control unit		Front combination lamp LH		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
E26	7 (Y/G)	E41	4 (Y/G)	Yes

OK or NG

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

5. INSPECTION: DAYTIME LIGHT CONTROL UNIT AND GROUND

Check continuity between harness connector of daytime light control unit and ground.



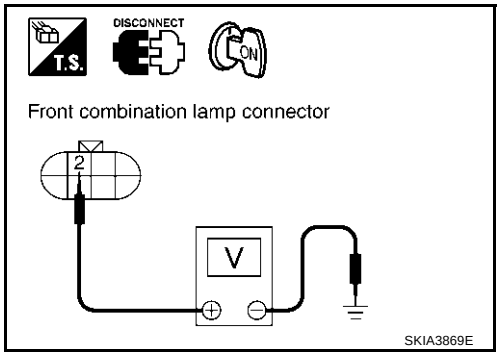
Terminals			Continuity
Daytime light control unit		Ground	
Connector	Terminal (Wire color)		
E26	9 (B)		Yes

OK or NG

OK >> GO TO 6.
NG >> Repair harness or connector.

6. CHECK DAYTIME LIGHT CONTROL UNIT

1. Connect daytime light control unit connector.
2. Start auto active test. Refer to PG-22, "Auto Active Test" . When headlamp HI is operating, check voltage between harness connector of LH front combination lamp and ground.



Terminals			Voltage
Front combination lamp LH		Ground	
Connector	Terminal (Wire color)		
E41	2 (L)		Battery voltage

OK or NG

OK >> Check headlamp bulb.
NG >> Replace daytime light control unit.

Headlamp LO Does Not Illuminate (Both Sides)

AKS00391

1. INSPECTION 1: IPDM E/R AND HEADLAMP

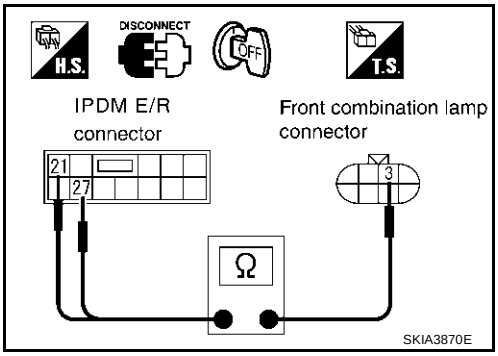
1. Start auto active test. Refer to PG-22, "Auto Active Test" .
2. Check whether headlamp LO operates.

OK or NG

OK >> GO TO 4.
NG >> GO TO 2.

2. INSPECTION: IPDM E/R AND HEADLAMPS

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



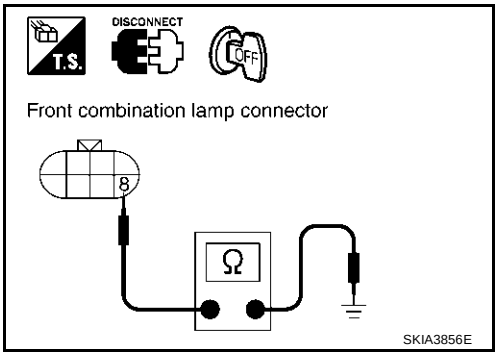
Terminals					Continuity
IPDM E/R		Front combination lamp			
Connector	Terminal (Wire color)	Connector		Terminal (Wire color)	
E7	27 (R)	RH	E24	3 (R)	Yes
	21 (R/B)	LH	E41	3 (R/B)	

OK or NG

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

3. INSPECTION: HEADLAMP AND GROUND

Check continuity between harness connector of LH/RH front combination lamp and ground.



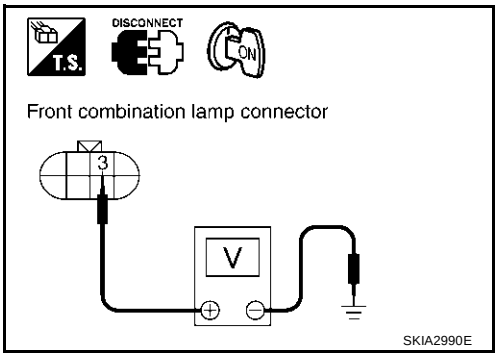
Terminals				Continuity
Front combination lamp			Ground	
Connector		Terminal (Wire color)		
RH	E24	8 (B/W)		Yes
LH	E41			

OK or NG

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

4. CHECK IPDM E/R

1. Connect IPDM E/R connector.
2. Start auto active test. Refer to PG-22, "Auto Active Test" . When headlamp LO is operating, check voltage between harness connector of LH/RH front combination lamp and ground.



Terminals				Voltage
Front combination lamp			Ground	
Connector		Terminal (Wire color)		
RH	E24	3 (R)		Battery voltage
LH	E41	3 (R/B)		

OK or NG

OK >>
- Check headlamp harness and connectors, ballasts (HID control unit), and xenon bulbs.
- (step1) Replace xenon bulb with other side bulb or new one. (If eclampsia illuminate correctly, replace the xenon bulb.)
- (step2) Replace the ballasts (HID control unit) with other side ballasts or new one. (If eclampsia illuminate correctly, replace the ballasts.)

NG >> Replace IPDM E/R.

5. INSPECTION 1: COMBINATION SWITCH AND BCM

Select “BCM” on CONSULT-II. Carry out “BCM C/U” self-diagnosis.

Displayed results of self-diagnosis

No malfunction detected>> GO TO 6.

CAN communications or CAN system>> Inspect the BCM CAN communications system. Refer to BCS-17, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" .

OPEN DETECT 1 - 5>> Combination Switch System malfunction. Refer to LT-128, "Combination Switch Inspection According to Self-Diagnostic Results" .

HEAD LAMP SW 1 or HEAD LAMP SW 2 >> Replace lighting switch.

SELF-DIAG RESULTS	
DTC RESULTS	TIME
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	

LKIA0073E

6. INSPECTION 2: COMBINATION SWITCH AND BCM

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

OK or NG

OK >> Replace BCM. Refer toBCS-20, "Removal and Installation of BCM"

NG >>
- Replace lighting switch.
- If one of “HEAD LAMP SW 1” and “HEAD LAMP SW 2” is NG, replace both BCM (Refer to BCS-20, "Removal and Installation of BCM") and lighting switch

DATA MONITOR	
MONITOR	
HEAD LAMP SW 1	OFF
HIBEAM SW	OFF
PASSING SW	OFF
FR FOG SW	OFF
DOOR SW-DR	OFF
DOOR SW-AS	OFF
DOOR SW-RR	OFF
HEAD LAMP SW2	OFF
OPTICAL SENSOR	0.75V

SKIA3890E

RH LO Does Not Illuminate But RH HI Illuminates

AKS00392

1. CHECK BULB INSPECTION

Check ballasts (HID control unit) and xenon bulb of lamp which does not illuminate.

OK or NG

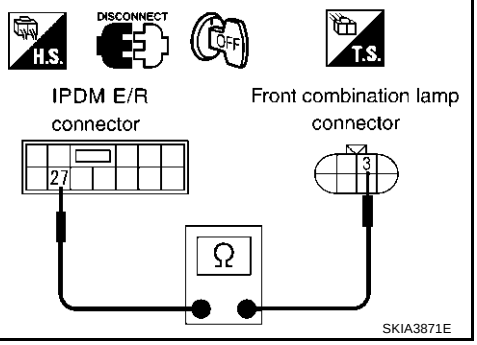
OK >> GO TO 2.

NG >>
- (step1) Replace xenon bulb with other side bulb or new one. (If eclampsia illuminate correctly, replace the xenon bulb.)
- (step2) Replace the ballasts (HID control unit) with other side ballasts or new one. (If eclampsia illuminate correctly, replace the ballasts.)

2. INSPECTION: IPDM E/R AND HEADLAMP

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

Terminals				Continuity
IPDM E/R		Front combination lamp RH		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
E7	27(R)	E24	3 (R)	Yes



SKIA3871E

OK or NG

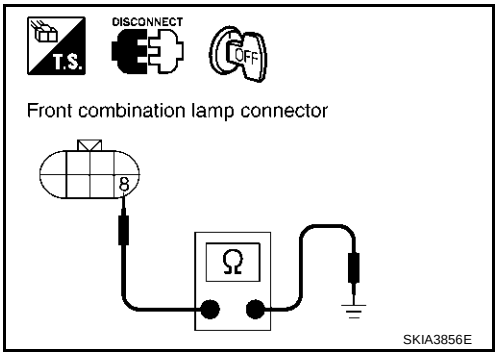
OK >> GO TO 3.

NG >> Repair harness or connector.

3. INSPECTION: HEADLAMP AND GROUND

Check continuity between harness connector of RH front combination lamp and ground.

Terminals				Continuity
Front combination lamp RH			Ground	
Connector		Terminal (Wire color)		
RH	E24	8 (B/W)		Yes



OK or NG

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

LH LO Does Not Illuminate But LH HI Illuminates

AKS00393

1. CHECK BULB

Inspect ballasts (HID control unit) and xenon bulb of lamp which does not illuminate.

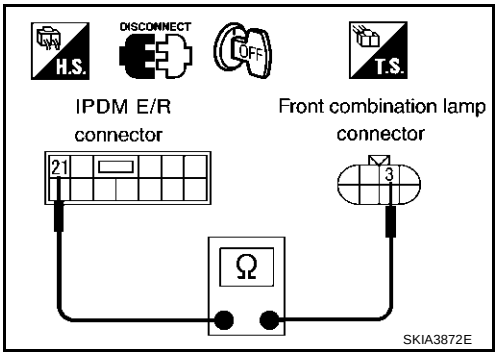
OK or NG

OK >> GO TO 2.
NG >>
- (step1) Replace xenon bulb with other side bulb or new one. (If eclampsia illuminate correctly, replace the xenon bulb.)
- (step2) Replace the ballasts (HID control unit) with other side ballasts or new one. (If eclampsia illuminate correctly, replace the ballasts.)

2. INSPECTION: IPDM E/R AND HEADLAMP

1. Disconnect IPDM E/R connector and LH front combination lamp connector.
2. Check continuity between harness connector of IPDM E/R and harness connector of LH front combination lamp.

Terminals				Continuity
IPDM E/R		Front combination lamp LH		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
E7	21 (R/B)	E41	3 (R/B)	Yes



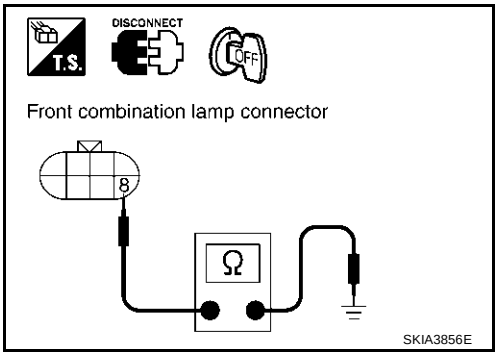
OK or NG

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

3. INSPECTION: HEADLAMP AND GROUND

Check continuity between harness connector of LH front combination lamp and ground.

Terminals				Continuity
Front combination lamp LH			Ground	
Connector		Terminal (Wire color)		
LH	E41	8 (B/W)		Yes



OK or NG

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

Aiming Adjustment

AKS00394

Refer to LT-27, "Aiming Adjustment" in “HEAD LAMP (FOR USA)”.

Bulb Replacement

AKS00395

Refer to LT-28, "Bulb Replacement" in “HEAD LAMP (FOR USA)”.

Removal and Installation

AKS00396

Refer toLT-29, "Removal and Installation" in “HEAD LAMP (FOR USA)”.

Disassembly and Assembly

AKS00397

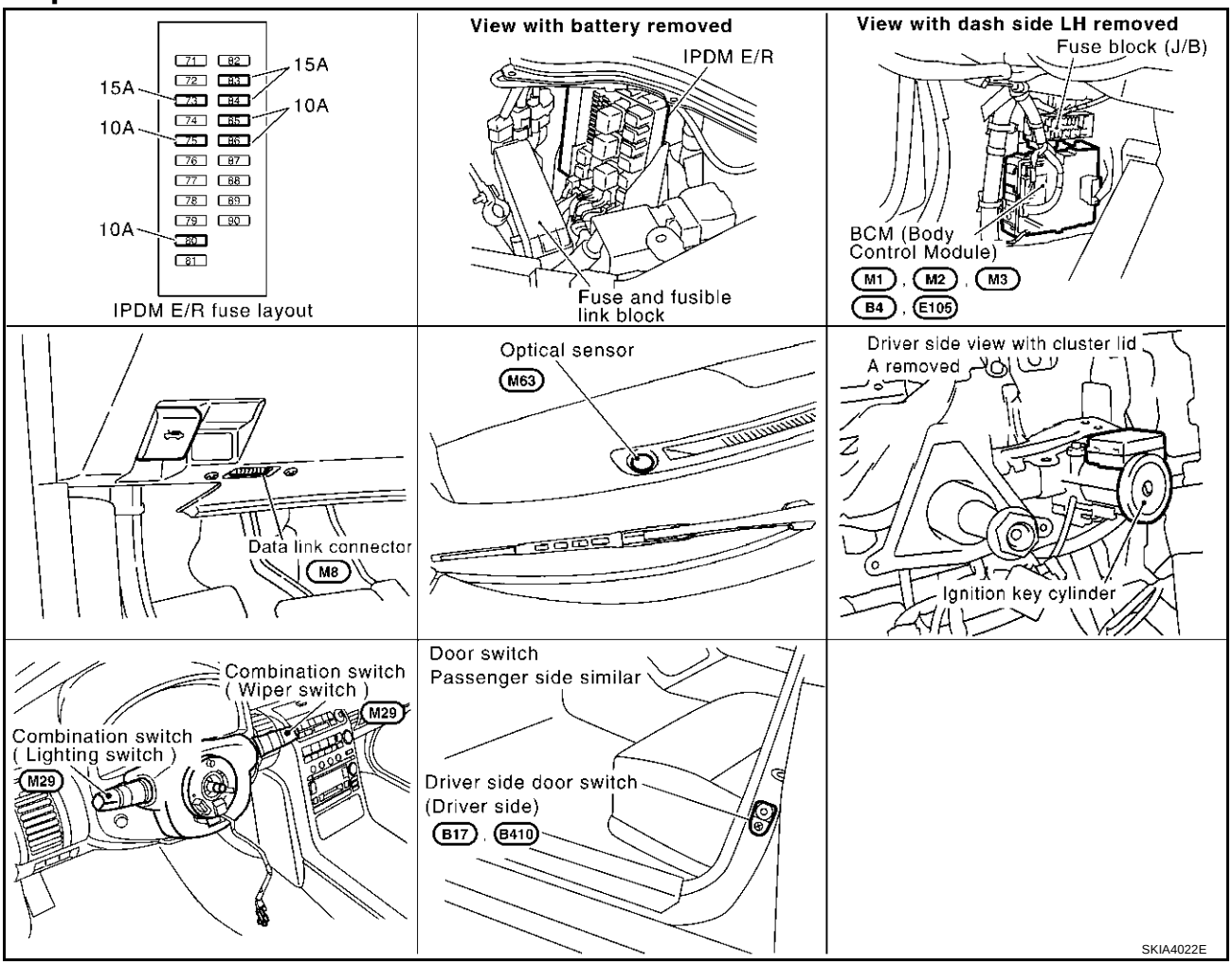
Refer to LT-30, "Disassembly" ,LT-31, "Assembly" in “HEAD LAMP (FOR USA)”.

AUTO LIGHT SYSTEM

PFP:28491

Component Parts and Harness Connector Location

AKS00398



System Description

AKS00399

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

OUTLINE

The auto light control system has an optical sensor inside it that detects outside brightness.
When the lighting switch is in “AUTO” position, it automatically turns on/off the parking lamps and the headlamps in accordance with the ambient light. Sensitivity can be adjusted in four steps. For the details of the setting, Refer to LT-74, "SETTING CHANGE FUNCTIONS" .
Optical sensor, power is supplied

- from BCM (body control module) terminal 45
- to optical sensor terminal 1.

Optical sensor, ground is supplied

- from BCM (body control module) terminal 53
- to optical sensor terminal 3.

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

- to BCM (body control module) terminal 38
- from optical sensor terminal 2.

The headlamps will then illuminate. For a description of headlamp operation, Refer to LT-7, "System Description" (with headlamps for USA), or LT-32, "System Description" (with headlamps for Canada).

COMBINATION SWITCH READING FUNCTION

Refer to LT-122, "Combination Switch Reading Function"

EXTERIOR LAMP BATTERY SAVER CONTROL

When a lighting switch changes into the state of off of an ignition switch from the state of ACC or ON by 1st position, a function in case a lighting switch is except AUTO or OFF in the state of ignition carries out the timer operation of the output of headlamp, fog lamp, and tall lamp for 5 minutes, is not based on the input conditions of a combination switch after that, but is set to OFF.
Exterior lamp battery saver control mode can be changed by the function setting of CONSULT-II.

SHUT OFF DELAY

When ignition switch is in the state of ON or ACC and a lighting switch is an AUTO position, after OFF and a door switch (a driver, passenger) serve as ON from the state of ON of headlamp in an ignition switch, a headlamp is turned on for 5 minutes, and headlamp, parking lamp, and fog lamp are set OFF after that.
When a door switch (a driver, passenger) is turned on from OFF during 45 seconds or a 5 minute timer operation, the present timer stops, newly turns on a headlamp for 5 minutes, and sets headlamp, parking lamp, and fog lamp to OFF after that.
When a door switch (a driver, passenger) is turned off from ON during 45 seconds or a 5 minute timer operation, the present timer stops, newly turns on a head lamp for 45 seconds, and sets a headlamp, parking lamp, and fog lamp to OFF after that.
When an ignition switch is turned off from ON during the above mentioned timer operation, the function, which stopped the timer and followed each lighting switch, is performed.
Shut off delay control mode can be changed by the function setting of CONSULT-II.

CAN Communication System Description

AKS0039A

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

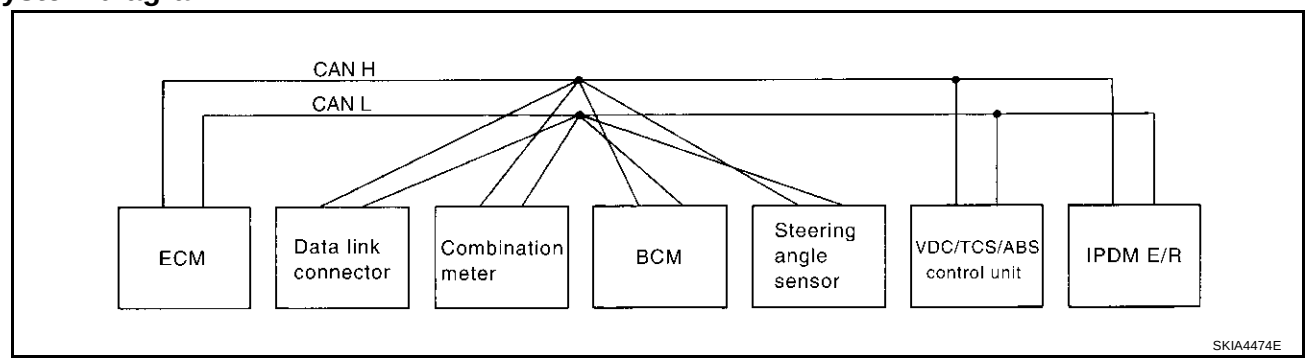
AKS005QD

Body type	Coupe	
Axle	2WD	
Engine	VQ35DE	
Transmission	M/T	A/T
Brake control	VDC	
CAN communication unit		
ECM	×	×
TCM		×
Data link connector	×	×
Combination meter	×	×
BCM	×	×
Steering angle sensor	×	×
VDC/TCS/ABS control unit	×	×
IPDM E/R	×	×
CAN communication type	LT-65	LT-66

×: Applicable

TYPE 1

System diagram



Input/output signal chart

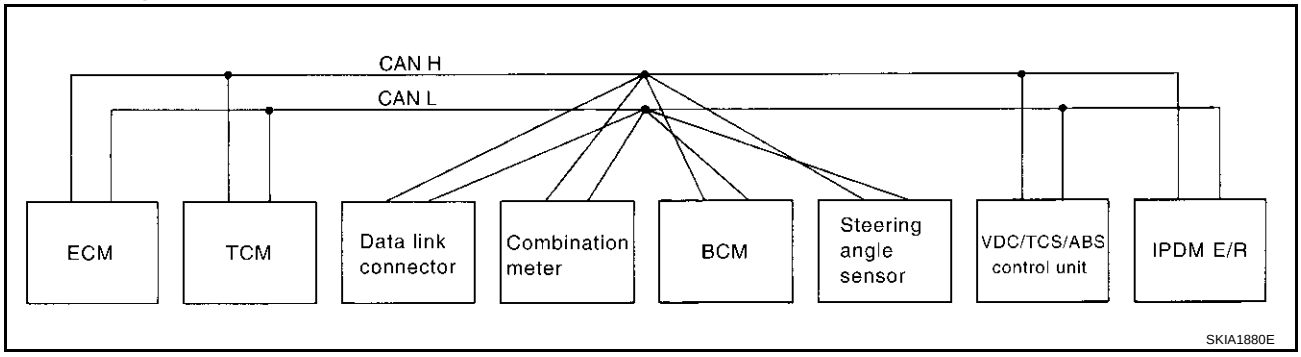
T: Transmit R: Receive

Signals	ECM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Engine speed signal	T	R			R	
Engine coolant temperature signal	T	R				
Accelerator pedal position signal	T				R	
Fuel consumption monitor signal	T	R				
Air conditioner switch signal	R		T			
A/C compressor request signal	T					R
A/C compressor feedback signal	T	R				
Blower fan motor switch signal	R		T			
Cooling fan motor operation signal	T					R
Position lights request signal		R	T			R
Low beam request signal			T			R
Low beam status signal	R		R			T
High beam request signal		R	T			R
High beam status signal	R		R			T
Front fog lights request signal			T			R
Vehicle speed signal		R			T	
	R	T	R			
Sleep request 1 signal		R	T			
Sleep request 2 signal			T			R
Wake up request 1 signal		R	T			
Wake up request 2 signal		R	T			
Door switch signal (without navigation system)		R	T			R
Door switch signal (with navigation system)		T	R			
Turn indicator signal		R	T			
Seat belt buckle switch signal		T	R			
Oil pressure switch signal		R				T
Buzzer output signal		R	T			
Trunk switch signal		R	T			
Malfunction indicator lamp signal	T	R				
ASCD SET lamp signal	T	R				
ASCD CRUISE lamp signal	T	R				

Signals	ECM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Fuel level sensor signal	R	T				
Front wiper request signal			T			R
Front wiper stop position signal			R			T
Rear window defogger switch signal			T			R
Rear window defogger control signal	R		R			T
Hood switch signal			R			T
Theft warning horn request signal			T			R
Horn chirp signal			T			R
Steering angle sensor signal				T	R	

TYPE 2

System diagram



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	TCM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Engine speed signal	T	R	R			R	
Engine coolant temperature signal	T	R	R				
Accelerator pedal position signal	T	R				R	
Closed throttle position signal	T	R					
Wide open throttle position signal	T	R					
Battery voltage signal	T	R					
Stop lamp switch		R	T				
Fuel consumption monitor signal	T		R				
A/T self-diagnosis signal	R	T					
A/T CHECK indicator lamp signal		T	R				
A/T position indicator signal		T	R			R	
ABS operation signal		R				T	
A/T shift schedule change demand signal		R				T	
Air conditioner switch signal	R			T			
A/C compressor request signal	T						R
A/C compressor feedback signal	T		R				
Blower fan motor switch signal	R			T			
Cooling fan motor operation signal	T						R

Signals	ECM	TCM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Position lights request signal			R	T			R
Low beam request signal				T			R
Low beam status signal	R			R			T
High beam request signal			R	T			R
High beam status signal	R			R			T
Front fog lights request signal				T			R
Vehicle speed signal			R			T	
	R	R	T	R			
Sleep request 1 signal			R	T			
Sleep request 2 signal				T			R
Wake up request 1 signal			R	T			
Wake up request 2 signal			R	T			
Door switch signal (without navigation system)			R	T			R
Door switch signal (with navigation system)			T	R			
Turn indicator signal			R	T			
Seat belt buckle switch signal			T	R			
Oil pressure switch signal			R				T
Buzzer output signal			R	T			
Trunk switch signal			R	T			
Malfunction indicator lamp signal	T		R				
ASCD SET lamp signal	T		R				
ASCD CRUISE lamp signal	T		R				
Fuel level sensor signal	R		T				
Output shaft revolution signal	R	T					
Turbine revolution signal	R	T					
Front wiper request signal				T			R
Front wiper stop position signal				R			T
Rear window defogger switch signal				T			R
Rear window defogger control signal	R			R			T
Manual mode signal		R	T				
Not manual mode signal		R	T				
Manual mode shift up signal		R	T				
Manual mode shift down signal		R	T				
Manual mode indicator signal		T	R				
Hood switch signal				R			T
Theft warning horn request signal				T			R
Horn chirp signal				T			R
Steering angle sensor signal					T	R	

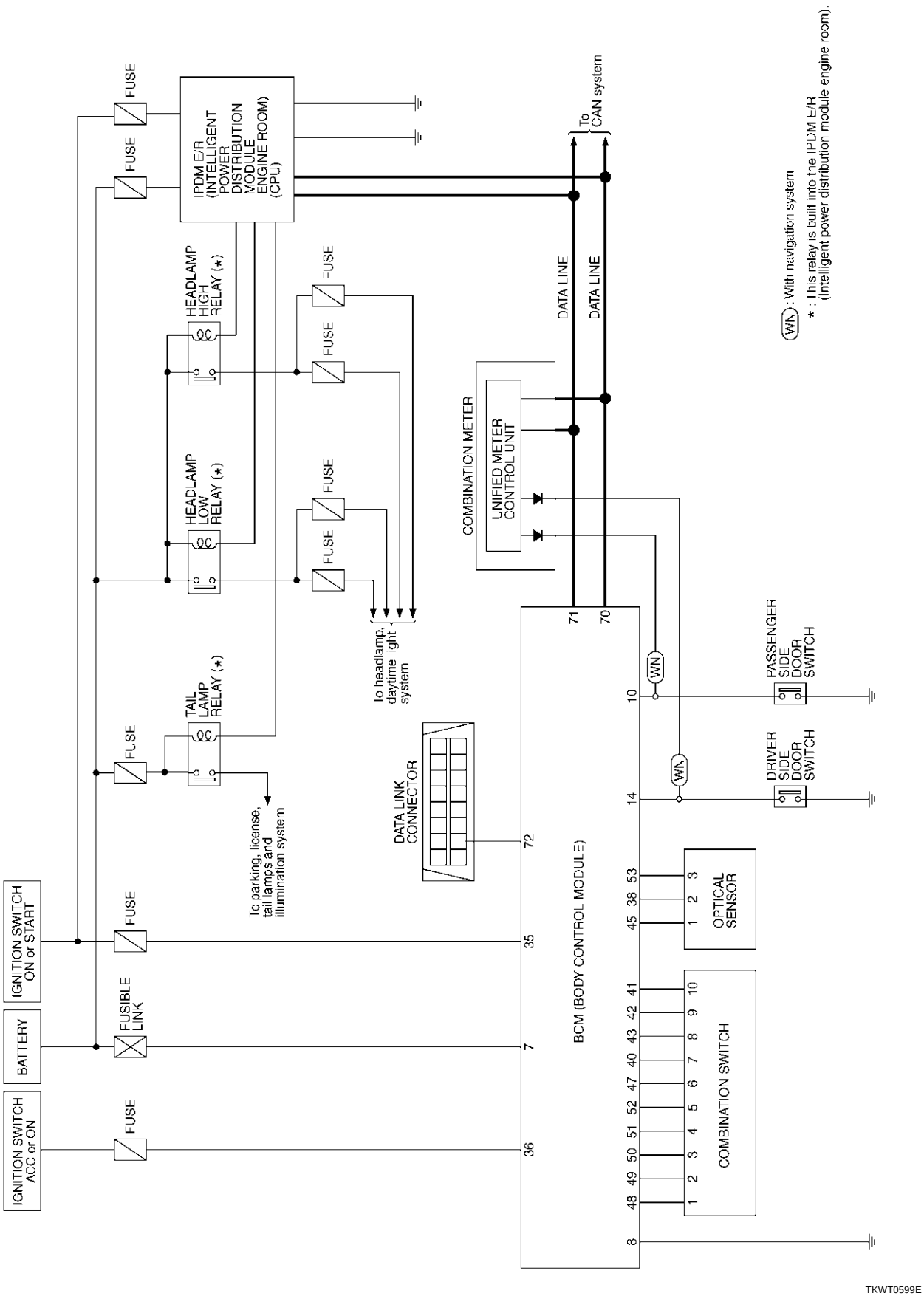
Major Components and Functions

AKS0039C

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

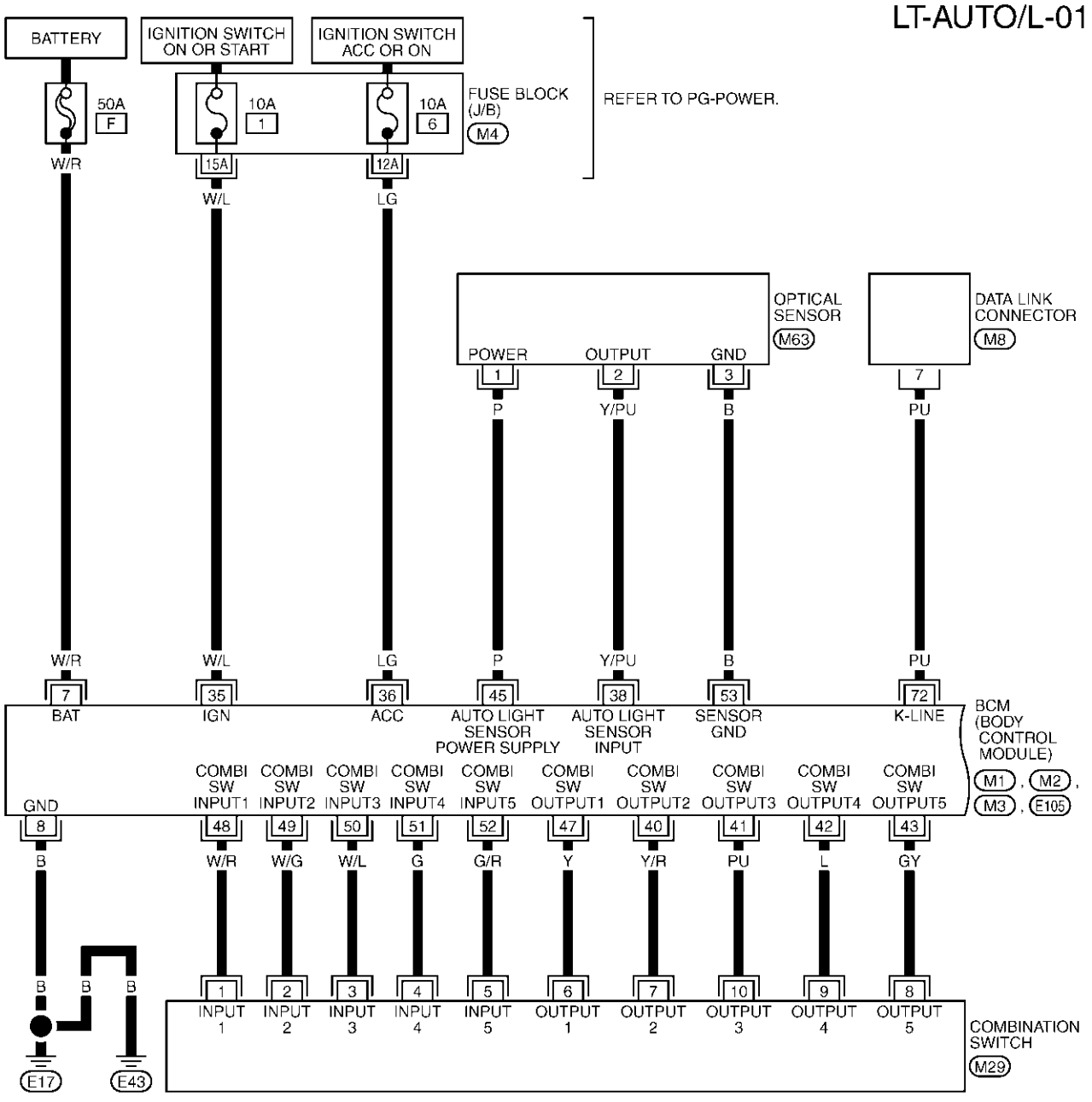
Schematic

AKS0039D



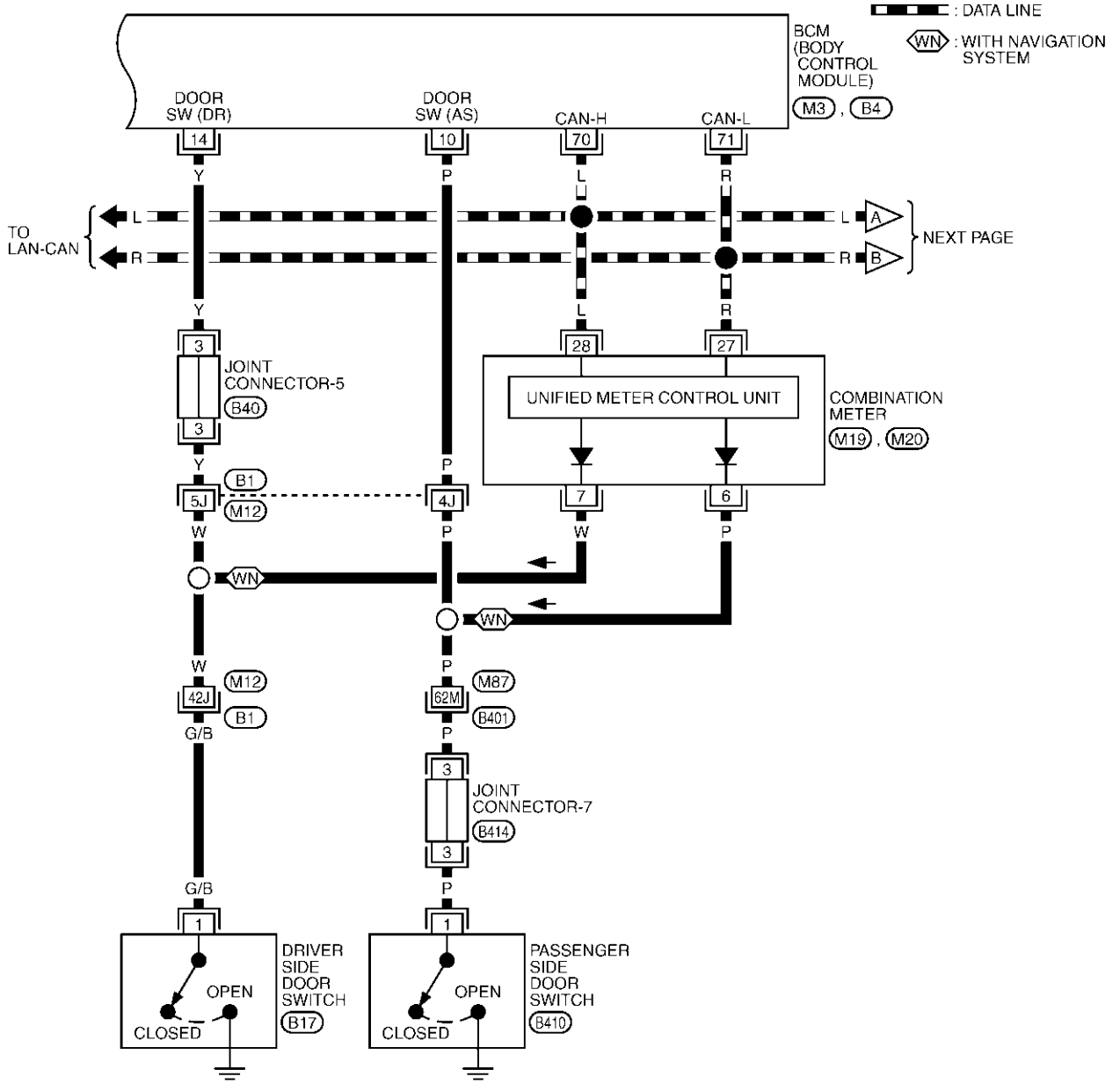
Wiring Diagram — AUTO/L —

AKS0039E



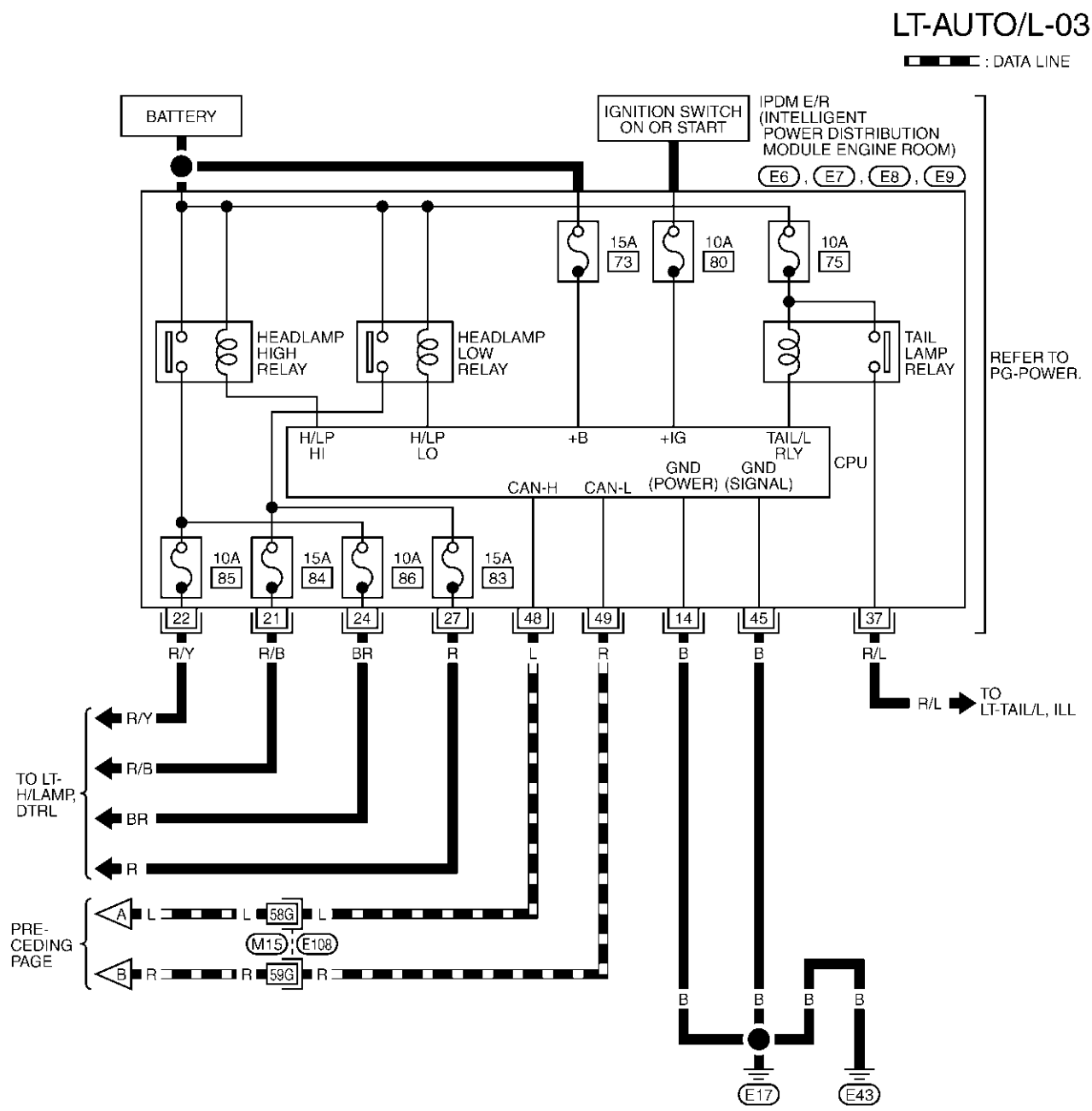
TKWT0600E

LT-AUTO/L-02



REFER TO THE FOLLOWING.
B1 , B401 -SUPER MULTIPLE JUNCTION (SMJ)
M3 , B4 -ELECTRICAL UNITS

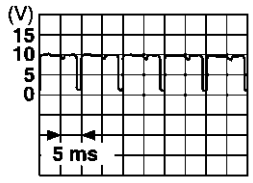
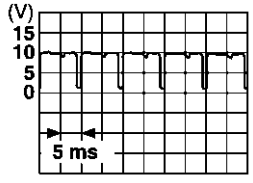
TKWT0601E


LT-AUTO/L-03
: DATA LINE
BATTERY
IGNITION SWITCH ON OR START
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E6, E7, E8, E9
15A 73
10A 80
10A 75
HEADLAMP HIGH RELAY
HEADLAMP LOW RELAY
TAIL LAMP RELAY
REFER TO PG-POWER.
H/LP HI
H/LP LO
+B
+IG
TAIL/L RLY
GND (POWER)
GND (SIGNAL)
CPU
CAN-H
CAN-L
10A 85
15A 84
10A 86
15A 83
22
21
24
27
48
49
14
45
37
R/Y
R/B
BR
R
L
R
B
B
R/L
R/L
TO LT-TAIL/L, ILL
TO LT-H/LAMP, DTRL
R/Y
R/B
BR
R
PRE-CEDING PAGE
A
B
L
R
58G
59G
M15
E108
B
B
B
B
E17
E43
E6
W
E7
W
E8
GY
E9
W
H.S.
REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)

TKWT0602E

Terminals and Reference Value for BCM

AKS003WO

Terminal No.	Wire color	Item	Measuring condition			Reference value
			Ignition switch	Operation or condition		
7	W/R	Battery power supply	OFF	—		Battery voltage
8	B	Ground	ON	—		Approx.0
10	P	Passenger side door switch signal	OFF	Passenger side door switch	ON (open)	Approx. 0V
					OFF (closed)	Battery voltage
14	Y	Driver side door switch signal	OFF	Driver side door switch	ON (open)	Approx. 0V
					OFF (closed)	Battery voltage
35	W/L	Ignition switch (ON)	ON	—		Battery voltage
36	LG	Ignition switch (ACC)	ACC	—		Battery voltage
38	Y/PU	Optical sensor signal	ON	When optical sensor is illuminated		3.1V or more[Note]
				When optical sensor is not illuminated		0.6V or less
40	Y/R	Combination switch output 2	ON	Lighting, turn, wiper OFF		 SKIA1119J
41	PU	Combination switch output 3				
42	L	Combination switch output 4				
43	GY	Combination switch output 5				
45	P	Optical sensor power supply	ON	—		Approx. 5V
47	Y	Combination switch output 1	ON	Lighting, turn, wiper OFF		 SKIA1119J
48	W/R	Combination switch input 1	ON	Lighting, turn, wiper OFF		4.5V or more
49	W/G	Combination switch input 2				
50	W/L	Combination switch input 3				
51	G	Combination switch input 4				
52	G/R	Combination switch input 5				
53	B	Sensor ground	ON	—		Approx. 0V
70	L	CAN-H	—	—		—
71	R	CAN-L	—	—		—
72	PU	K-LINE	—	—		—

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

Terminals and Reference Values for IPDM E/R

AKS004CW

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
14	B	Ground	ON	—		Approx. 0V
21	R/B	Headlamp low (LH)	ON	Lighting switch 2ND position	OFF	Approx. 0V
					ON	Battery voltage
22	R/Y	Headlamp high (LH)	ON	Lighting switch HIGH or PASS position	OFF	Approx. 0V
					ON	Battery voltage
24	BR	Headlamp high (RH)	ON	Lighting switch HIGH or PASS position	OFF	Approx. 0V
					ON	Battery voltage
27	R	Headlamp low (RH)	ON	Lighting switch 2ND position	OFF	Approx. 0V
					ON	Battery voltage
37	R/L	Parking, license plate, and tail lamp	ON	Lighting switch 1ST position	OFF	Approx. 0V
					ON	Battery voltage
45	B	Ground	ON	—		Approx. 0V
48	L	CAN– H	—	—		—
49	R	CAN– L	—	—		—

How to Proceed With Trouble Diagnosis

AKS0039G

1. Confirm the trouble symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-63, "System Description" .
3. Carry out the Preliminary Check. Refer to LT-74, "Preliminary Inspection" .
4. Check symptom and repair or replace the cause of malfunction. Refer to LT-78, "Trouble Diagnosis Chart by Symptom" .
5. Does the automatic light system operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection end.

Preliminary Inspection

AKS0039H

SETTING CHANGE FUNCTIONS

- Sensitivity of automatic light system can be adjusted using CONSULT-II. Refer to LT-76, "WORK SUPPORT" .

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown fuses.

UNIT	POWER SOURCE	FUSE No.
BCM	Battery	F
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
IPDM E/R	Battery	83
		84
		85
		86

Refer to LT-70, "Wiring Diagram — AUTO/L —" .

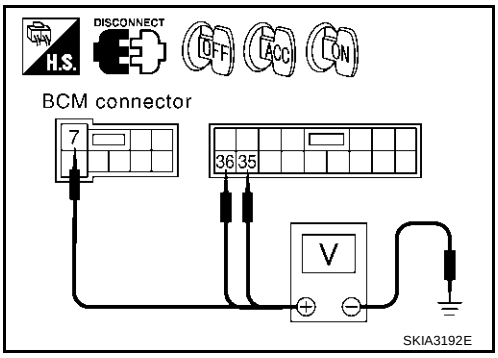
OK or NG

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



Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
E105	7 (W/R)	Ground	Battery voltage	Battery voltage	Battery voltage
M1	35 (W/L)		0V	0V	Battery voltage
M1	36 (LG)		0V	Battery voltage	Battery voltage

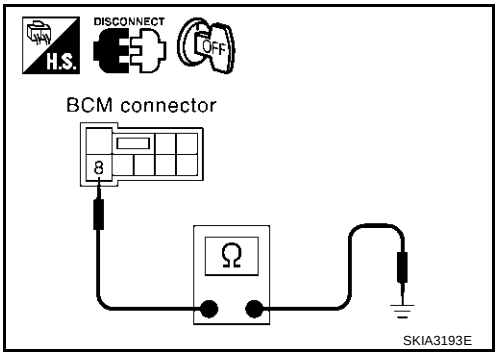
OK or NG

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)		
E105	8 (B)	Ground	Yes

OK or NG

OK >> INSPECTION END

NG >> Check harness ground circuit.

CONSULT-II Function

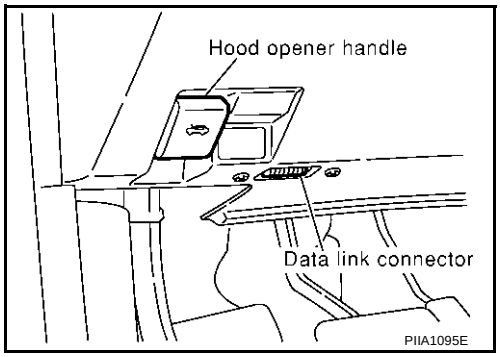
AKS0039I

CONSULT-II performs the following function communicating with BCM.

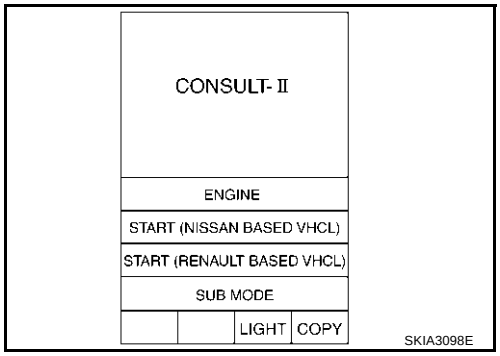
BCM diagnosis part	Check item, diagnosis mode	Description
HEAD LAMP	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending driving signal to them.
BCM	CAN DIAG SUPPORT MNTR	The result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

CONSULT-II BASIC OPERATION

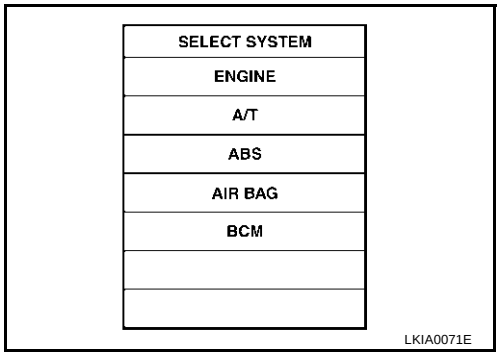
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



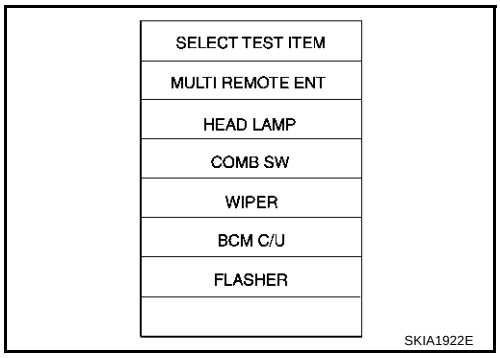
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “BCM” on “SELECT SYSTEM” screen.
If “BCM” is not indicated, go to GI-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 “CUSTOM A/LIGHT SETTING” or “ILL DELAY SET” on “SELECT WORK ITEM” screen.
4. Touch “START”.
5. Touch “NORMAL” or “MODE 2 - 4” of setting to be changed (CUSTOM A/LIGHT SETTING), Touch “MODE1–8” of setting to be changed. (ILL DELAY SET)

6. Touch “SETTING CHANGE”.
7. The setting will be changed and “CUSTOMIZING COMPLETED” will be displayed.
8. Touch “END”.

Work Support Setting Item

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

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

DATA MONITOR

Operation Procedure

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

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		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.
AUTO LIGHT SW	“ON/OFF”	Displays status of the lighting switch as judged from the lighting switch signal. (AUTO position: ON/Other than AUTO position: OFF)
TAIL LAMP SW	“ON/OFF”	Displays status (lighting switch 1st position: ON/Others: OFF) of light switch judged from lighting switch signal.
HEAD LAMP SW 1	“ON/OFF”	Displays status (headlamp switch 1: ON/Others: OFF) of headlamp switch 1 judged 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.
PASSING SW	“ON/OFF”	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW	“ON/OFF”	Displays status (front fog switch: ON/Others: OFF) of front fog switch judged from lighting switch signal.
DOOR SW - DR	“ON/OFF”	Displays status of the driver door as judged from the driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - AS	“ON/OFF”	Displays status of the passenger door as judged from the passenger door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RR[Note]	“OFF”	—

Monitor item		Contents
HEAD LAMP SW 2	“ON/OFF”	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
OPTICAL SENSOR	[0 - 5V]	Displays “ambient light (close to 5V when light/close to 0V when dark)” judged from optical sensor signal.

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

ACTIVE TEST

Operation Procedure

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

Display Item List

Test item	Description
TAIL LAMP	Allows tail light relay to operate by switching ON–OFF.
HEAD LAMP (LOW)	Allows headlamp relay to operate by switching ON–OFF.
HEAD LAMP (HI)	Allows headlamp relay to operate by switching ON–OFF.
FR FOG LAMP	Allows fog lamp relay to operate by switching ON–OFF.

Trouble Diagnosis Chart by Symptom

AKS0039J

Trouble phenomenon	Malfunction system and reference
● Parking lamps and headlamps will not illuminate when outside of the vehicle becomes dark. (Lighting switch 1st position and 2nd position operate normally.) ● Parking lamps and headlamp will not go out when outside of the vehicle becomes light. (Lighting switch 1st position and 2nd position operate normally.) ● Headlamps go out when outside of the vehicle becomes light, but parking lamps stay on.	● Refer to LT-76, "WORK SUPPORT" . ● Refer to LT-79, "Lighting Switch Inspection" . ● Refer to LT-79, "Optical sensor System Inspection" . If above systems are normal, replace BCM.
Parking lamps illuminate when outside of the vehicle becomes dark, but headlamps stay off. (Lighting switch 1st position and 2nd position operate normally.)	● Refer to LT-76, "WORK SUPPORT" . ● Refer to LT-79, "Optical sensor System Inspection" . If above systems are normal, replace BCM.
Auto light adjustment system will not operate. (Lighting switch AUTO, 1st position and 2nd position operate normally.)	● Refer to LT-79, "Optical sensor System Inspection" . If above system is normal, replace BCM.
Auto light adjustment system of combination meter will not operate.	● CAN communication line inspection between BCM and combination meter. Refer to BCS-17, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" .
Shut off delay feature will not operate.	● Refer to BL-37, "Check Door Switch (With Navigation System)" . or BL-39, "Check Door Switch (Without Navigation System)" . If above system is normal, replace BCM.

Lighting Switch Inspection

AKS0039K

1. CHECK LIGHTING SWITCH

Select “BCM” in CONSULT-II. Operate lighting switch via “AUTO LIGHT SW” on data monitor screen, and make sure light turns on and off as commanded.

Lighting switch AUTO : ON

Lighting switch OFF : OFF

DATA MONITOR	
MONITOR	
IGN ON SW	ON
ACC ON SW	ON
AUTO LIGHT SW	ON
TAIL LAMP SW	OFF
HEAD LAMP SW 1	OFF
HI BEAM SW	OFF
PASSING SW	OFF
FR FOG SW	OFF
DOOR SW-DR	OFF

SKIA4604E

OK or NG

OK >> INSPECTION END.

NG >> Replace lighting switch.

Optical sensor System Inspection

AKS0039L

1. CHECK OUTPUT SIGNAL

Select “BCM” in CONSULT-II. Using “OPTICAL SENSOR” data from “DATA MONITOR”, check difference in the voltage when the auto light sensor is illuminated and not illuminated.

Illuminated

Optical sensor : 3.1V or more

Not illuminated

Optical sensor : 0.6V or less

DATA MONITOR	
MONITOR	
HEAD LAMP SW 1	OFF
HIBEAM SW	OFF
PASSING SW	OFF
FR FOG SW	OFF
DOOR SW-DR	OFF
DOOR SW-AS	OFF
DOOR SW-RR	OFF
HEAD LAMP SW2	OFF
OPTICAL SENSOR	0.75V

SKIA3890E

CAUTION:

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

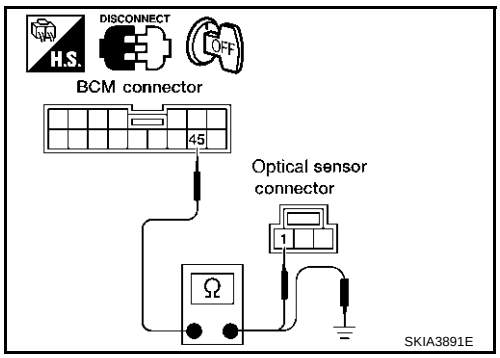
OK or NG

OK >> INSPECTION END.

NG >> GO TO 2.

2. CHECK POWER SUPPLY CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect BCM connector and optical sensor connector.
3. Check harness continuity (open circuit) between harness connector of BCM and harness connector of optical sensor.



Terminals				Continuity
BCM		Optical sensor		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M2	45 (P)	M63	1 (P)	Yes

4. Check harness continuity (short circuit) between harness connector of BCM and ground.

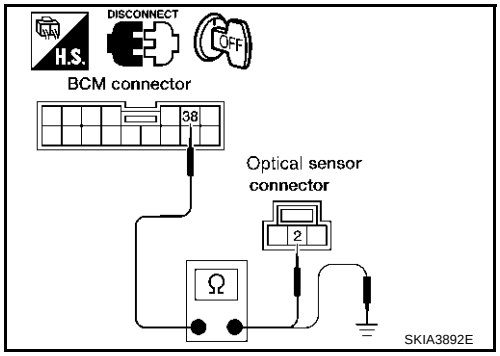
Terminals			Continuity
BCM		Ground	
Connector	Terminal (Wire color)		
M2	45 (P)		No

OK or NG

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

3. CHECK OUTPUT CIRCUIT CONTINUITY

1. Check harness continuity (open circuit) between harness connector of BCM and harness connector of optical sensor.



Terminals				Continuity
BCM		Optical sensor		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M2	38 (Y/PU)	M63	2 (Y/PU)	Yes

2. Check harness continuity (short circuit) between harness connector of BCM and ground.

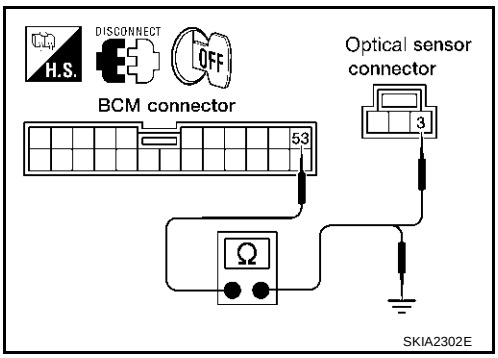
Terminals			Continuity
BCM		Ground	
Connector	Terminal (Wire color)		
M2	38 (Y/PU)		No

OK or NG

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

4. CHECK GROUND CIRCUIT CONTINUITY

1. Check harness continuity (open circuit) between harness connector of BCM and harness connector of optical sensor.



Terminals				Continuity
BCM		Optical sensor		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M3	53 (B)	M63	3 (B)	Yes

2. Check harness continuity (short circuit) between harness connector of BCM and ground.

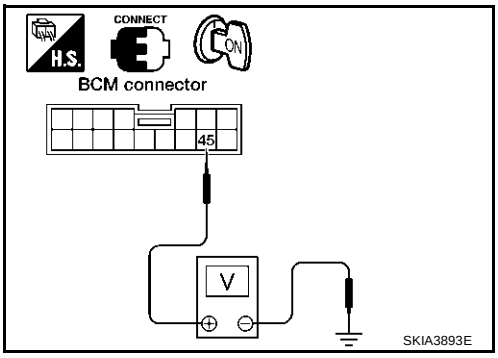
Terminals			Continuity
BCM		Ground	
Connector	Terminal (Wire color)		
M3	53 (B)		No

OK or NG

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

5. CHECK SENSOR VOLTAGE

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



Terminals			Voltage
BCM		Ground	
Connector	Terminal (Wire color)		
M2	45 (P)		Approx.5V

OK or NG

OK >> Replace the optical sensor.
NG >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .

FRONT FOG LAMP

PFP:26150

System Description

AKS0039M

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

OUTLINE

Power is supplied at all times

- to front fog lamp relay, located in the IPDM E/R (intelligent power distribution module engine room), and
- through 15A fuse [No. 72, located in the IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) in the IPDM E/R (intelligent power distribution module engine room)
- through 15A fuse [No. 73, located in the IPDM E/R (intelligent power distribution module engine room)]

Power is also supplied at all times

- to terminal 7 of the BCM (body control module)
- through 50A fusible link (letter F, located in the fuse and fusible link box)

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

- to terminal 35 of the BCM (body control module).
- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to CPU (central processing unit) in the IPDM E/R (intelligent power distribution module engine room)
- through 10A fuse [No. 80, located in the IPDM E/R (intelligent power distribution module engine room)]

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

- to terminal 36 of the BCM (body control module)
- through 10A fuse [No. 6, located in the fuse block (J/B)]

Ground is supplied

- to BCM (body control module) terminal 8
- through grounds E17 and E43.
- to IPDM E/R (intelligent power distribution module engine room) terminal 14 and 45
- through grounds E17 and E43.

FOG LAMP OPERATION (FOR USA)

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

- to terminal 1 of front combination lamp LH
- through terminal 32 of the IPDM E/R, and
- to terminal 1 of front combination lamp RH
- through terminal 29 of the IPDM E/R.

Ground is supplied

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

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

FOG LAMP OPERATION (FOR CANADA)

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

- to terminal 1of front combination lamp LH
- through terminal 3 of daytime light relay-1
- to terminal 5 and 2 of daytime light relay-1
- through terminal 32 of the IPDM E/R
- to terminal 1of front combination lamp RH
- through terminal 29 of the IPDM E/R.

Ground is supplied

- to terminal 4 of front combination lamp LH
- through terminal 7 of the daytime light control unit
- to terminal 9 of the daytime light control unit
- through grounds E17 and E43
- to terminal 4 of front combination lamp RH
- through grounds E17 and E43.

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

COMBINATION SWITCH READING FUNCTION

Refer to LT-122, "Combination Switch Reading Function" .

EXTERIOR LAMP BATTERY SAVER CONTROL

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

CAN Communication System Description

AKS0039N

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

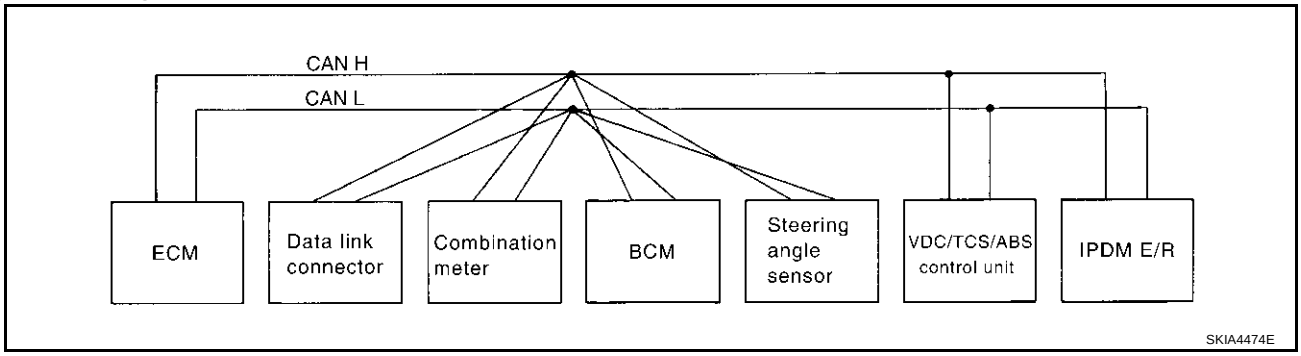
AKS005QE

Body type	Coupe	
Axle	2WD	
Engine	VQ35DE	
Transmission	M/T	A/T
Brake control	VDC	
CAN communication unit		
ECM	×	×
TCM		×
Data link connector	×	×
Combination meter	×	×
BCM	×	×
Steering angle sensor	×	×
VDC/TCS/ABS control unit	×	×
IPDM E/R	×	×
CAN communication type	LT-84	LT-86

×: Applicable

TYPE 1

System diagram



Input/output signal chart

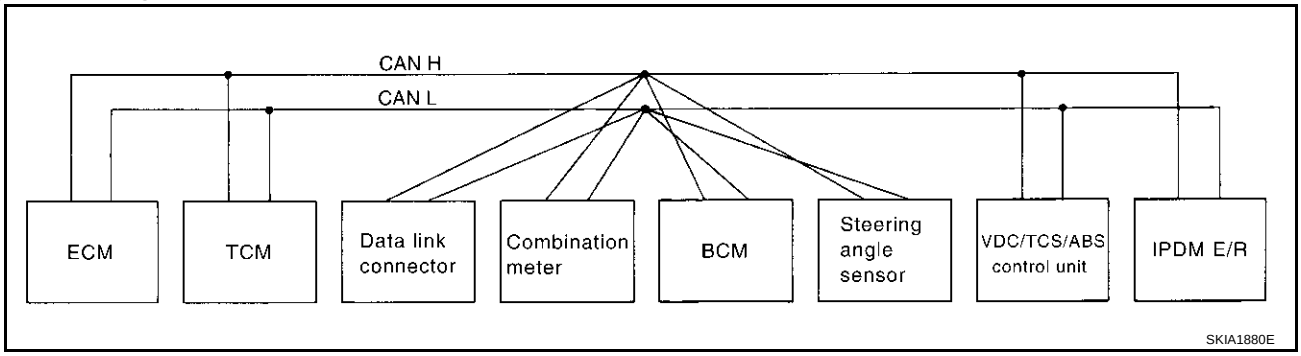
T: Transmit R: Receive

Signals	ECM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Engine speed signal	T	R			R	
Engine coolant temperature signal	T	R				
Accelerator pedal position signal	T				R	
Fuel consumption monitor signal	T	R				
Air conditioner switch signal	R		T			
A/C compressor request signal	T					R
A/C compressor feedback signal	T	R				

Signals	ECM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Blower fan motor switch signal	R		T			
Cooling fan motor operation signal	T					R
Position lights request signal		R	T			R
Low beam request signal			T			R
Low beam status signal	R		R			T
High beam request signal		R	T			R
High beam status signal	R		R			T
Front fog lights request signal			T			R
Vehicle speed signal		R			T	
	R	T	R			
Sleep request 1 signal		R	T			
Sleep request 2 signal			T			R
Wake up request 1 signal		R	T			
Wake up request 2 signal		R	T			
Door switch signal (without navigation system)		R	T			R
Door switch signal (with navigation system)		T	R			
Turn indicator signal		R	T			
Seat belt buckle switch signal		T	R			
Oil pressure switch signal		R				T
Buzzer output signal		R	T			
Trunk switch signal		R	T			
Malfunction indicator lamp signal	T	R				
ASCD SET lamp signal	T	R				
ASCD CRUISE lamp signal	T	R				
Fuel level sensor signal	R	T				
Front wiper request signal			T			R
Front wiper stop position signal			R			T
Rear window defogger switch signal			T			R
Rear window defogger control signal	R		R			T
Hood switch signal			R			T
Theft warning horn request signal			T			R
Horn chirp signal			T			R
Steering angle sensor signal				T	R	

TYPE 2

System diagram



Input/output signal chart

T: Transmit R: Receive

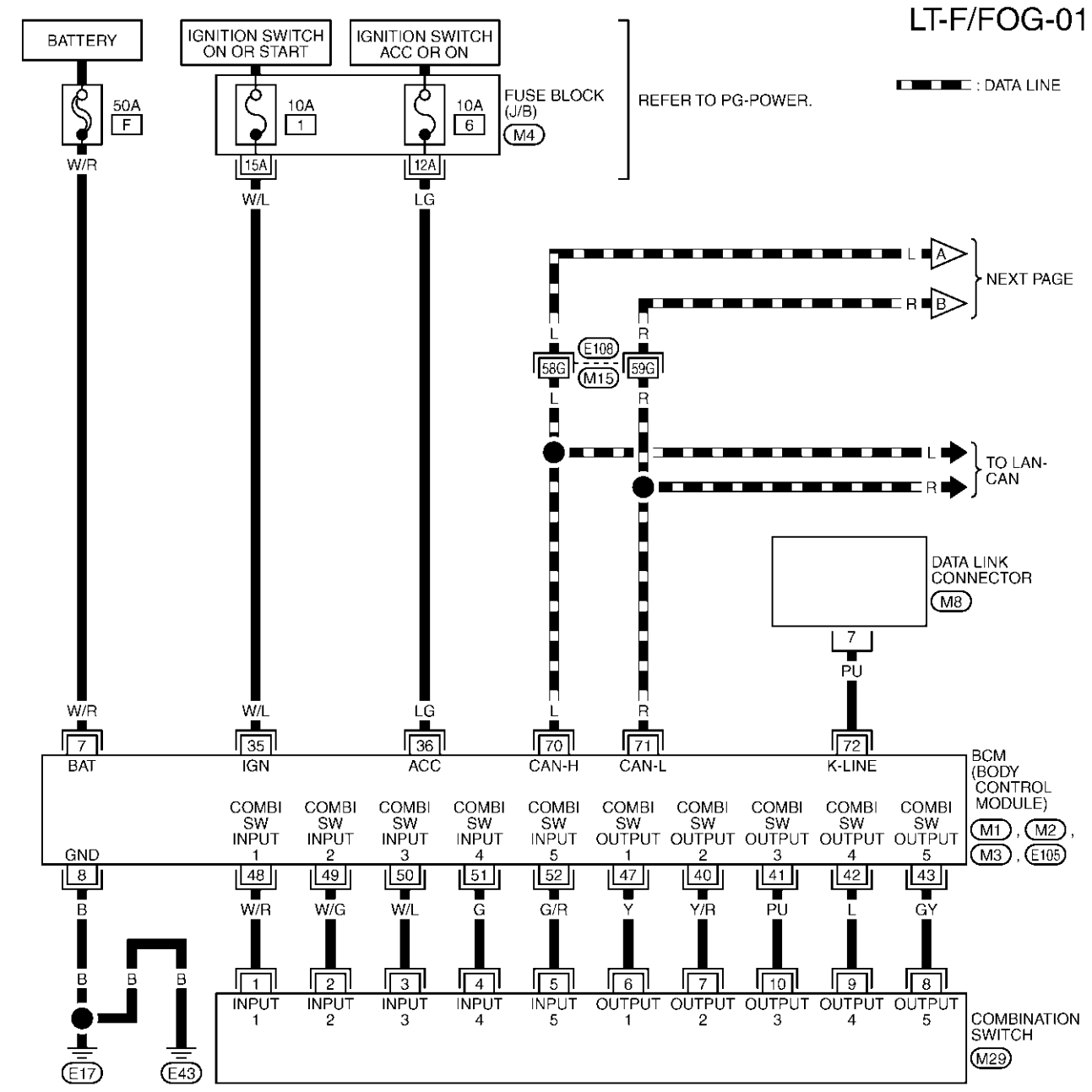
Signals	ECM	TCM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Engine speed signal	T	R	R			R	
Engine coolant temperature signal	T	R	R				
Accelerator pedal position signal	T	R				R	
Closed throttle position signal	T	R					
Wide open throttle position signal	T	R					
Battery voltage signal	T	R					
Stop lamp switch		R	T				
Fuel consumption monitor signal	T		R				
A/T self-diagnosis signal	R	T					
A/T CHECK indicator lamp signal		T	R				
A/T position indicator signal		T	R			R	
ABS operation signal		R				T	
A/T shift schedule change demand signal		R				T	
Air conditioner switch signal	R			T			
A/C compressor request signal	T						R
A/C compressor feedback signal	T		R				
Blower fan motor switch signal	R			T			
Cooling fan motor operation signal	T						R
Position lights request signal			R	T			R
Low beam request signal				T			R
Low beam status signal	R			R			T
High beam request signal			R	T			R
High beam status signal	R			R			T
Front fog lights request signal				T			R
Vehicle speed signal			R			T	
	R	R	T	R			
Sleep request 1 signal			R	T			
Sleep request 2 signal				T			R
Wake up request 1 signal			R	T			
Wake up request 2 signal			R	T			

Signals	ECM	TCM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Door switch signal (without navigation system)			R	T			R
Door switch signal (with navigation system)			T	R			
Turn indicator signal			R	T			
Seat belt buckle switch signal			T	R			
Oil pressure switch signal			R				T
Buzzer output signal			R	T			
Trunk switch signal			R	T			
Malfunction indicator lamp signal	T		R				
ASCD SET lamp signal	T		R				
ASCD CRUISE lamp signal	T		R				
Fuel level sensor signal	R		T				
Output shaft revolution signal	R	T					
Turbine revolution signal	R	T					
Front wiper request signal				T			R
Front wiper stop position signal				R			T
Rear window defogger switch signal				T			R
Rear window defogger control signal	R			R			T
Manual mode signal		R	T				
Not manual mode signal		R	T				
Manual mode shift up signal		R	T				
Manual mode shift down signal		R	T				
Manual mode indicator signal		T	R				
Hood switch signal				R			T
Theft warning horn request signal				T			R
Horn chirp signal				T			R
Steering angle sensor signal					T	R	

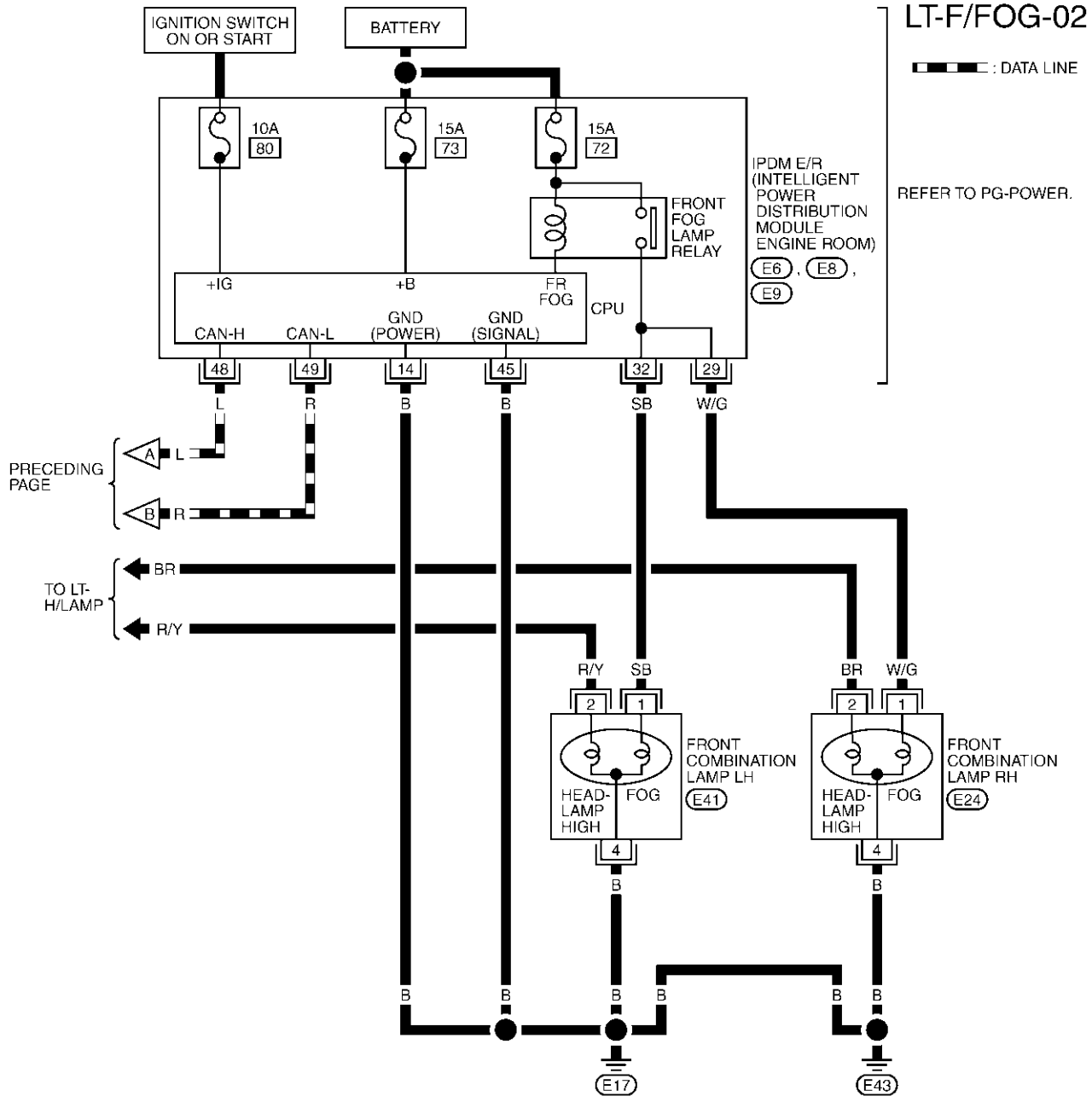
Wiring Diagram — F/FOG —

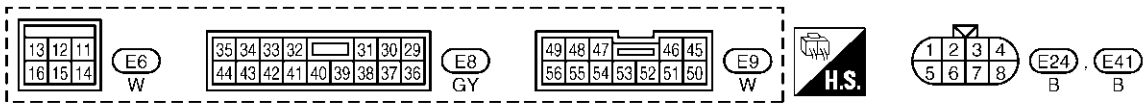
AKS0039P

FOR USA



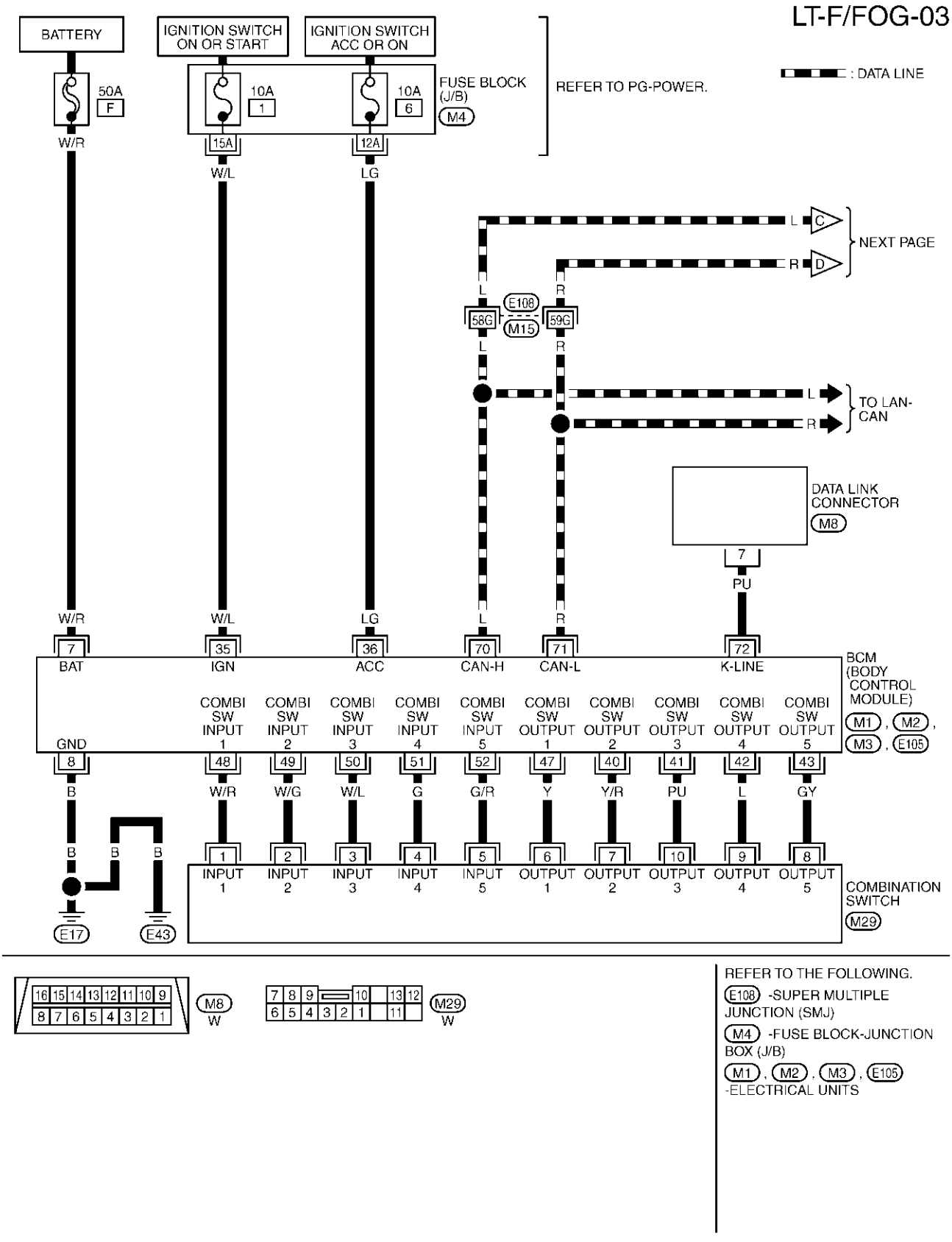
TKWT0603E


LT-F/FOG-02
: DATA LINE
REFER TO PG-POWER.
IGNITION SWITCH ON OR START
BATTERY
10A 80
15A 73
15A 72
FRONT FOG LAMP RELAY
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E6, E8, E9
+IG
+B
FR FOG
CPU
CAN-H
CAN-L
GND (POWER)
GND (SIGNAL)
48
49
14
45
32
29
L
R
B
B
SB
W/G
PRECEDING PAGE
A L
B R
TO LT-H/LAMP
BR
R/Y
R/Y
SB
BR
W/G
2
1
HEAD-LAMP HIGH
FOG
FRONT COMBINATION LAMP LH
E41
FRONT COMBINATION LAMP RH
E24
4
B
E17
E43

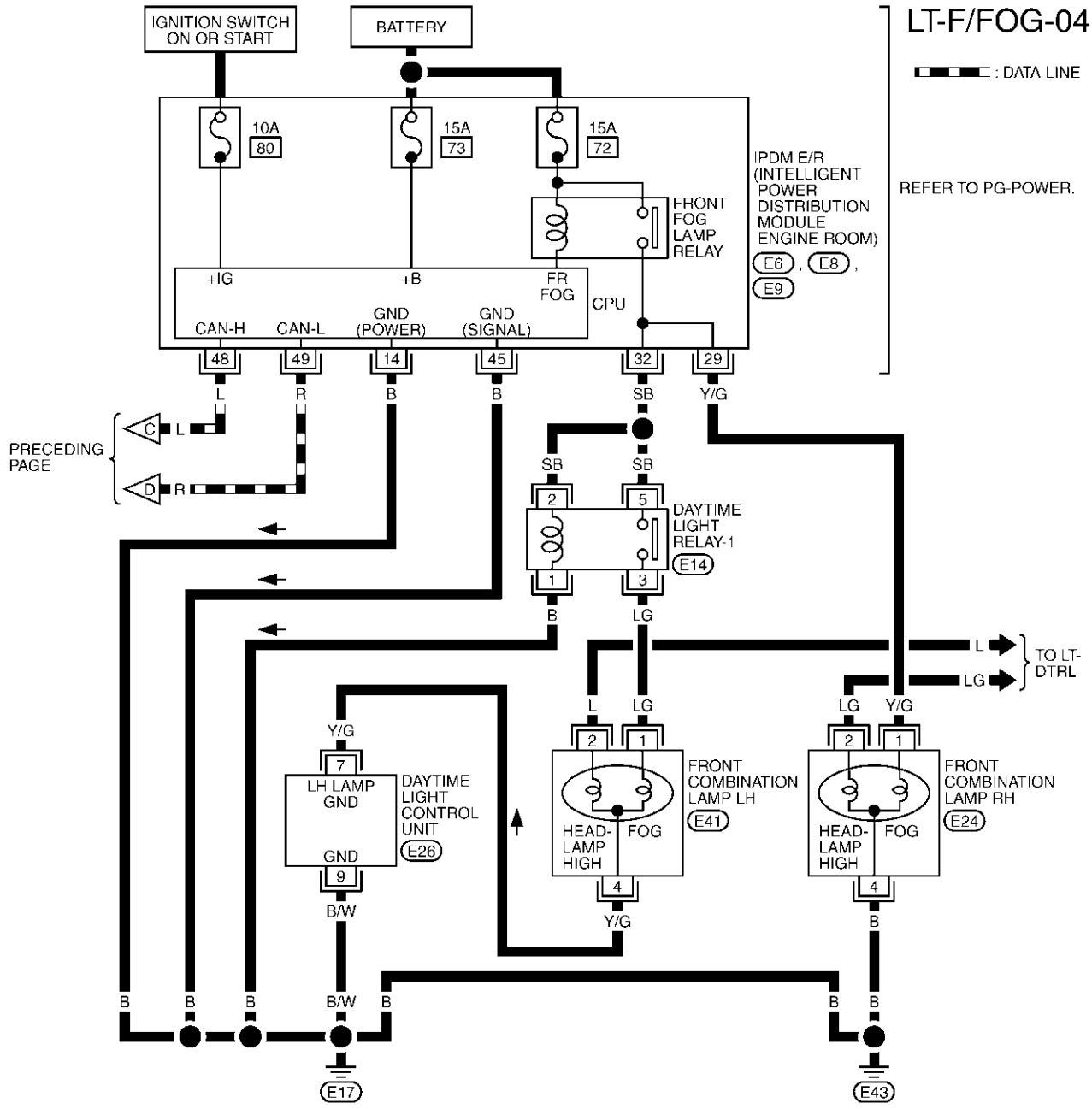

E6
W
E8
GY
E9
W
H.S.
E24, E41
B
B

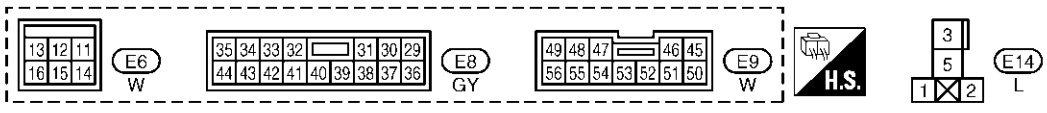
TKWT0604E

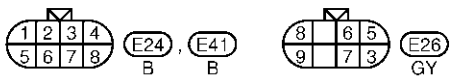
FOR CANADA



TKWT0605E


IGNITION SWITCH ON OR START
BATTERY
LT-F/FOG-04
: DATA LINE
10A 80
15A 73
15A 72
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) E6, E8, E9
REFER TO PG-POWER.
FRONT FOG LAMP RELAY
+IG
+B
FR FOG
CPU
CAN-H
CAN-L
GND (POWER)
GND (SIGNAL)
48
49
14
45
32
29
L
L
R
B
B
SB
Y/G
PRECEDING PAGE
C
L
D
R
SB
SB
2
5
DAYTIME LIGHT RELAY-1 E14
1
3
B
LG
L
LG
TO LT-DTRL
Y/G
7
LH LAMP GND
DAYTIME LIGHT CONTROL UNIT E26
GND
9
B/W
L
LG
2
1
FRONT COMBINATION LAMP LH E41
HEAD-LAMP HIGH
FOG
4
Y/G
LG
Y/G
2
1
FRONT COMBINATION LAMP RH E24
HEAD-LAMP HIGH
FOG
4
B
B
B
B/W
B
B
B
E17
E43

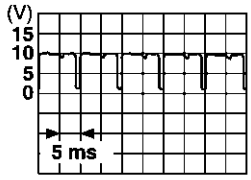

13 12 11
16 15 14
E6
W
35 34 33 32 31 30 29
44 43 42 41 40 39 38 37 36
E8
GY
49 48 47 46 45
56 55 54 53 52 51 50
E9
W
H.S.
3
5
1 2
E14
L


1 2 3 4
5 6 7 8
E24, E41
B
8 6 5
9 7 3
E26
GY

TKWT0606E

Terminals and Reference Value for BCM

AKS003YP

Terminal No.	Wire color	Item	Measuring condition		Reference value
			Ignition switch	Operation or condition	
7	W/R	Battery power supply	OFF	—	Battery voltage
8	B	Ground	ON	—	Approx.0
35	W/L	Ignition switch (ON)	ON	—	Battery voltage
36	LG	Ignition switch (ACC)	ACC	—	Battery voltage
40	Y/R	Combination switch output 2	ON	Lighting, turn, wiper OFF	 SKIA1119J
41	PU	Combination switch output 3			
42	L	Combination switch output 4			
43	GY	Combination switch output 5			
47	Y	Combination switch output 1			
48	W/R	Combination switch input 1	ON	Lighting, turn, wiper OFF	4.5V or more
49	W/G	Combination switch input 2			
50	W/L	Combination switch input 3			
51	G	Combination switch input 4			
52	G/R	Combination switch input 5			
70	L	CAN-H	—	—	—
71	R	CAN-L	—	—	—
72	PU	K-LINE	—	—	—

Terminals and Reference Values for IPDM E/R

AKS004CX

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
14	B	Ground	ON	—		Approx. 0V
29	W/G (For:USA) Y/G (For: CANADA)	Front fog lamp (RH)	ON	Lighting switch must be in the 2ND position or AUTO position (LOW beam is ON) and the front fog lamp switch must be ON	OFF	Approx. 0V
					ON	Battery voltage
32	SB	Front fog lamp (LH)	ON	Lighting switch must be in the 2ND position or AUTO position (LOW beam is ON) and the front fog lamp switch must be ON	OFF	Approx. 0V
					ON	Battery voltage
45	B	Ground	ON	—		Approx. 0V
48	L	CAN– H	—	—		—
49	R	CAN– L	—	—		—

How to Proceed With Trouble Diagnosis

AKS0039R

1. Confirm the trouble symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-82, "System Description" .
3. Carry out the Preliminary Inspection. Refer to LT-93, "Preliminary Inspection" .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the front fog lamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection end.

Preliminary Inspection

AKS0039S

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown fuses.

UNIT	POWER SOURCE	FUSE No.
BCM	Battery	F
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
IPDM E/R	Battery	72

Refer to LT-88, "Wiring Diagram — F/FOG —" .

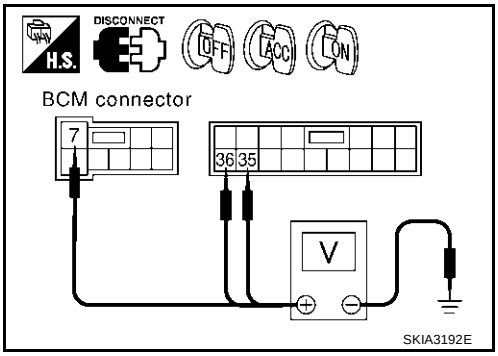
OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of problem 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)				
E105	7 (W/R)	Ground	Battery voltage	Battery voltage	Battery voltage
M1	35 (W/L)		0V	0V	Battery voltage
M1	36 (LG)		0V	Battery voltage	Battery voltage



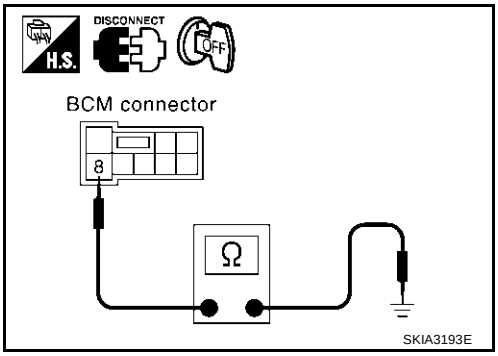
OK or NG

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)		
E105	8 (B)	Ground	Yes



OK or NG

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

CONSULT-II Function

AKS0039T

Refer to LT-19, "CONSULT-II Function" in HEAD LAMP (FOR USA).
Refer to LT-49, "CONSULT-II Function" in HEAD LAMP (FOR CANADA).

Front Fog Lamps Does Not Illuminate (Both Sides) (FOR USA)

AKS0039U

1. INSPECTION 1: IPDM E/R AND FRONT FOG LAMPS

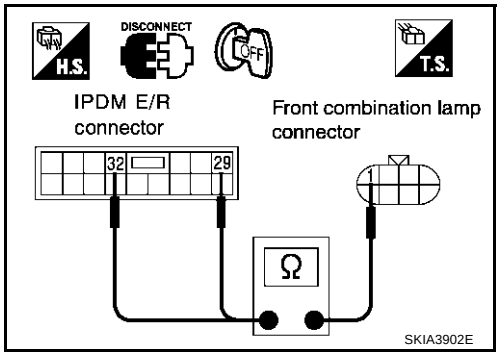
1. Start auto active test. Refer to PG-22, "Auto Active Test" .
2. Check whether front fog lamps operate.

OK or NG

OK >> GO TO 5.
NG >> GO TO 2.

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

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



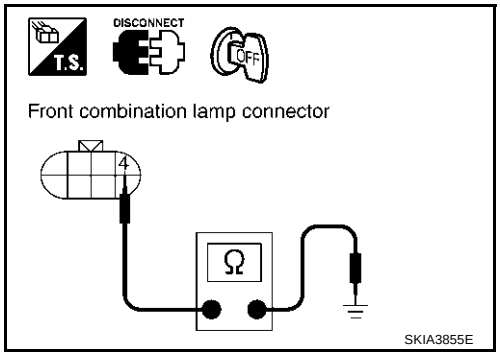
Terminals					Continuity
IPDM E/R		Front combination lamp (Front fog lamp)			
Connector	Terminal (Wire color)	Connector		Terminal (Wire color)	
E8	29 (W/G)	RH	E24	1 (W/G)	Yes
	32 (SB)	LH	E41	1 (SB)	

OK or NG

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

3. INSPECTION: FRONT FOG LAMPS AND GROUND

Check continuity between harness connector of LH/RH front combination lamps and ground.



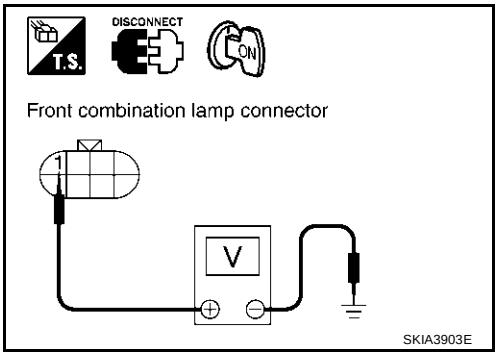
Terminals				Continuity
Front combination lamp (Front fog lamp)			Ground	
Connector		Terminal (Wire color)		
RH	E24	4 (B)		Yes
LH	E41			

OK or NG

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

4. CHECK IPDM E/R

1. Connect IPDM E/R connector.
2. Start auto active test. Refer to PG-22, "Auto Active Test" . When front fog lamp relay is operating, check voltage between harness or connector of LH/RH front combination lamp and ground.



Terminals				
Front combination lamp (Front fog lamp)			Ground	Voltage
Connector		Terminal (Wire color)		
RH	E24	1 (W/G)		Battery voltage
LH	E41	1 (SB)		

OK or NG

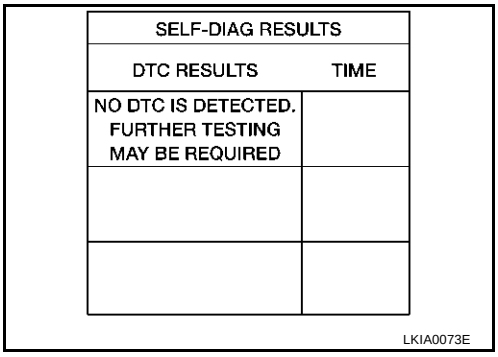
OK >> Check front fog lamp bulbs.
NG >> Replace IPDM E/R.

5. INSPECTION 1: COMBINATION SWITCH AND BCM

Select “BCM” on CONSULT-II. Carry out “BCM C/U” self-diagnosis.

Displayed results of self-diagnosis

No malfunction detected>> GO TO 6.
CAN communications or CAN system>> Inspect the BCM CAN communications system. Refer to BCS-17, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" .
OPEN DETECT 1 - 5>> Combination switch system malfunction. Refer to LT-128, "Combination Switch Inspection According to Self-Diagnostic Results" .

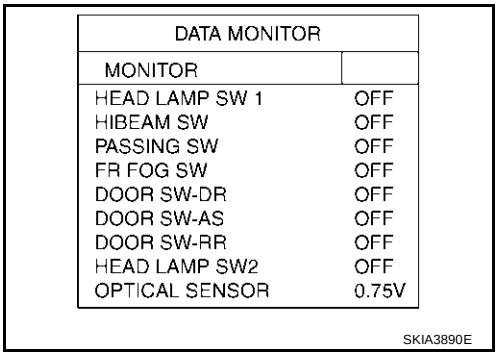


6. INSPECTION 2: COMBINATION SWITCH AND BCM

Select “BCM” on CONSULT-II. Use “HEADLAMP” data monitor to make sure “FR FOG SW” turns ON-OFF linked with operation of fog lamp switch.

OK or NG

OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .
NG >> Replace lighting switch.



Front Fog Lamp Does Not Illuminate (One Side) (FOR USA)

AKS0039V

1. CHECK INSPECTION

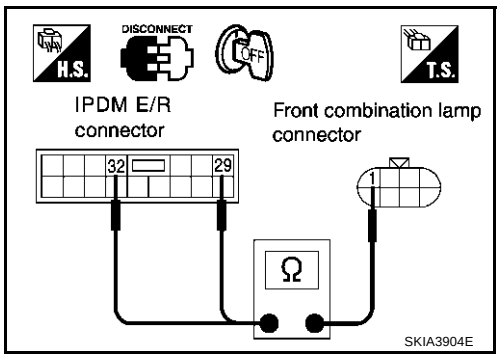
Inspect bulbs of lamps which do not illuminate.

OK or NG

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

2. INSPECTION: IPDM E/R AND FRONT FOG LAMP

1. Disconnect IPDM E/R connector and front combination lamp connector.
2. Check continuity between harness connector of IPDM E/R and harness connector of front combination lamp.



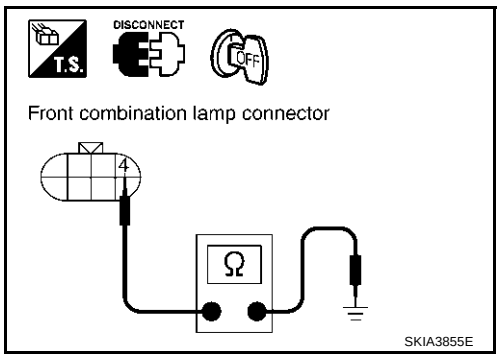
Terminals					Continuity
IPDM E/R		Front combination lamp (Front fog lamp)			
Connector	Terminal (Wire color)	Connector		Terminal (Wire color)	
E8	29 (W/G)	RH	E24	1 (W/G)	Yes
	32 (SB)	LH	E41	1 (SB)	

OK or NG

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

3. INSPECTION: FRONT FOG LAMP AND GROUND

Check continuity between harness connector of LH/RH front combination lamps and ground.



Terminals				Continuity
Front combination lamp (Front fog lamp)			Ground	
Connector		Terminal (Wire color)		
RH	E24	4 (B)		Yes
LH	E41			

OK or NG

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

Front Fog Lamp Does Not Illuminate (Both Sides) (FOR CANADA)

AKS003YQ

1. INSPECTION: IPDM E/R AND HEADLAMPS

1. Start auto active test. Refer to PG-22, "Auto Active Test" .
2. Check whether headlamp HI operates.

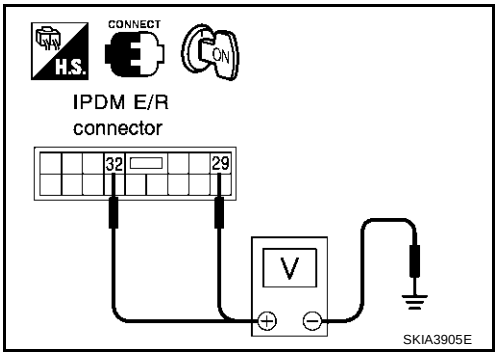
OK or NG

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

2. CHECK IPDM E/R

Start auto active test. Refer to PG-22, "Auto Active Test" . When front fog lamp relay is operating, check voltage between harness connector of IPDM E/R and ground.

Terminals			
IPDM E/R		Ground	Voltage
Connector	Terminal (Wire color)		
E8	29 (Y/G)		Battery voltage
	32 (SB)		



OK or NG

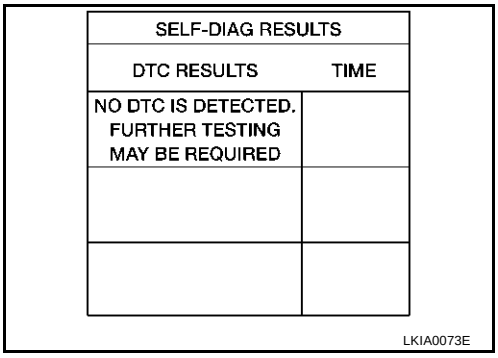
OK >> Check front fog bulbs.
NG >> Replace IPDM E/R.

3. INSPECTION 1: COMBINATION SWITCH AND BCM

Select “BCM” on CONSULT-II. Carry out “BCM C/U” self-diagnosis.

Displayed results of self-diagnosis

No malfunction detected>> GO TO 4.
CAN communications or CAN system>> Inspect the BCM CAN communications system. Refer to BCS-17, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" .
OPEN DETECT 1 - 5>> Combination switch system malfunction. Refer to LT-128, "Combination Switch Inspection According to Self-Diagnostic Results" .

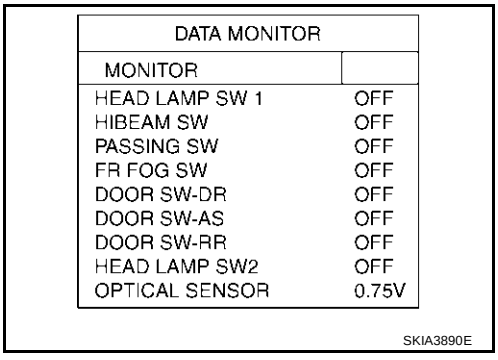


4. INSPECTION 2: COMBINATION SWITCH AND BCM

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

OK or NG

OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .
NG >> Replace lighting switch.



LH Front Fog Lamp Does Not Illuminate (FOR CANADA)

AKS003YR

1. CHECK BULB

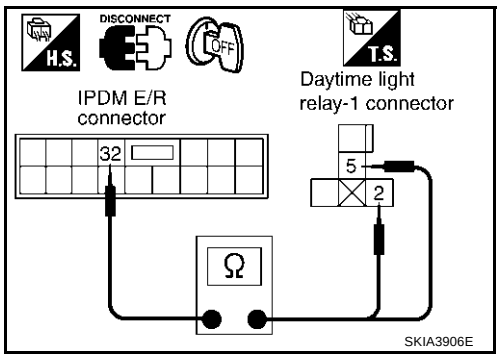
Inspect bulb of lamps which do not illuminate.

OK or NG

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

2. INSPECTION: IPDM E/R AND DAYTIME LIGHT RELAY–1

1. Disconnect IPDM E/R connector and daytime light relay–1.
2. Check continuity between harness connector of IPDM E/R and harness connector of daytime light relay–1.



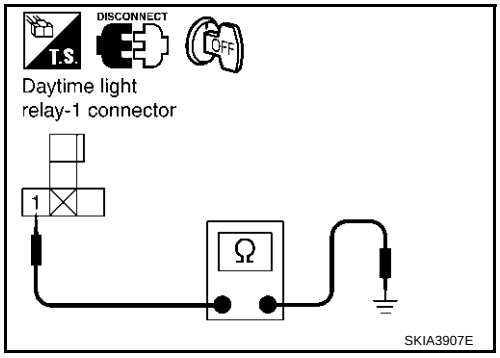
Terminals				Continuity
IPDM E/R		Daytime light relay-1		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
E8	32 (SB)	E14	2 (SB)	Yes
			5 (SB)	

OK or NG

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

3. INSPECTION: DAYTIME LIGHT RELAY–1 AND GROUND

Check continuity between harness connector of daytime light relay–1 and ground.



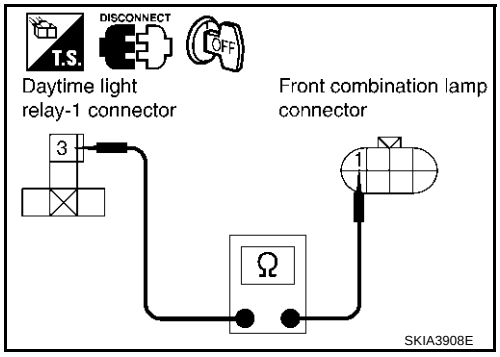
Terminals			Continuity
Daytime light relay–1		Ground	
Connector	Terminal (Wire color)		
E14	1 (B)		Yes

OK or NG

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

4. INSPECTION: DAYTIME LIGHT RELAY–1 AND HEADLAMP

1. Disconnect LH front combination lamp connector.
2. Check continuity between harness connector of daytime light relay–1 and harness connector of LH front combination lamp.



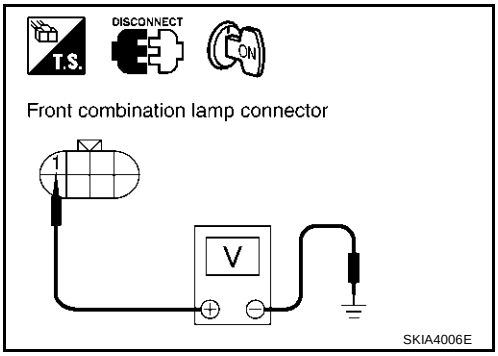
Terminals				Continuity
Daytime light relay–1		Front combination lamp LH (Front fog lamp)		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
E14	3 (LG)	E41	1 (LG)	Yes

OK or NG

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

5. CHECK DAYTIME LIGHT RELAY–1

1. Connect IPDM E/R connector and daytime light relay–1.
2. Start auto active test. Refer to PG-22, "Auto Active Test" . When front fog lamp relay is operating, check voltage between harness connector of LH front combination lamp and ground.



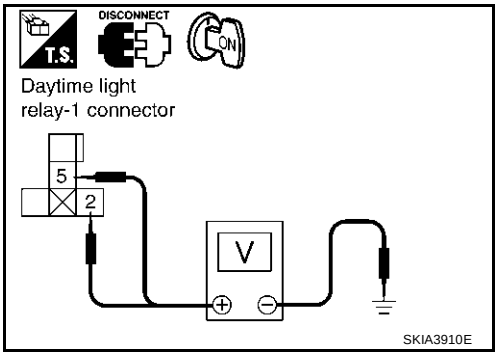
Terminals			Voltage
Front combination lamp LH		Ground	
Connector	Terminal (Wire color)		
E41	1 (LG)		Battery voltage

OK or NG

OK >> GO TO 7.
NG >> GO TO 6.

6. CHECK IPDM E/R

1. Turn ignition switch OFF.
2. Disconnect daytime light relay–1
3. Start auto active test. Refer to PG-22, "Auto Active Test" . When front fog lamp relay is operating, check voltage between harness connector of daytime light relay–1 and ground.



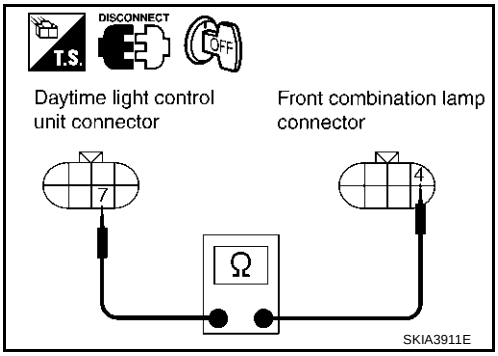
Terminals			Voltage
Daytime light relay–1		Ground	
Connector	Terminal (Wire color)		
E14	5 (SB)		Battery voltage
	2 (SB)		

OK or NG

OK >> Replace daytime light relay–1.
NG >> Replace IPDM E/R.

7. INSPECTION: HEADLAMP AND DAYTIME LIGHT CONTROL UNIT

1. Turn ignition switch OFF.
2. Disconnect daytime light control unit connector.
3. Check continuity between harness connector of LH front combination lamp and harness connector of daytime light control unit.



Terminals				Continuity
Daytime light control unit		Front combination lamp LH (Front fog lamp)		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
E26	7 (Y/G)	E41	4 (Y/G)	Yes

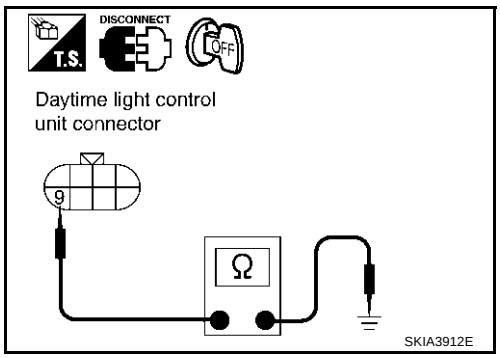
OK or NG

OK >> GO TO 8.
NG >> Repair harness or connector.

8. INSPECTION: HEADLAMP AND DAYTIME LIGHT CONTROL UNIT

Check continuity between harness connector of daytime light control unit and ground.

Terminals			Continuity
Daytime light control unit		Ground	
Connector	Terminal (Wire color)		
E26	9 (B/W)		Yes



OK or NG

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

RH Front Fog Lamp Does Not Illuminate (FOR CANADA)

AKS003YS

1. CHECK BULB

Inspect bulbs of lamps which do not illuminate.

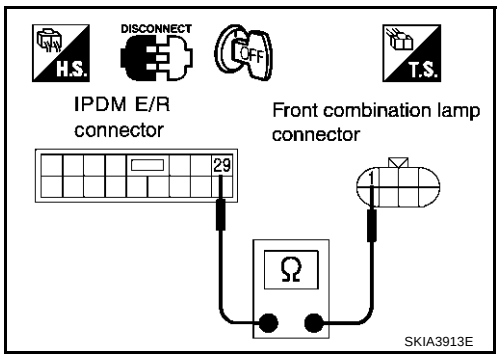
OK or NG

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

2. INSPECTION: IPDM E/R AND FRONT FOG LAMP

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

Terminals				Continuity
IPDM E/R		Front combination lamp (Front fog lamp)		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
E8	29 (Y/G)	E24	1 (Y/G)	Yes



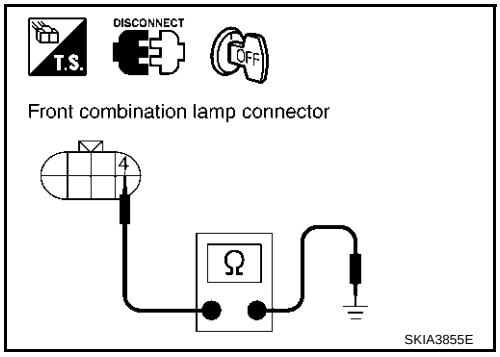
OK or NG

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

3. INSPECTION: FRONT FOG LAMP AND GROUND

Check continuity between harness connector of RH front combination lamps and ground.

Terminals			Continuity
Front combination lamp (Front fog lamp)		Ground	
Connector	Terminal (Wire color)		
E24	4 (B)		Yes



OK or NG

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

Bulb Replacement

AKS004EQ

Refer to LT-28, "Bulb Replacement" in "HEAD LAMP".

TURN SIGNAL AND HAZARD WARNING LAMPS

PFP:26120

System Description

AKS0039X

TURN SIGNAL OPERATION

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

- to BCM (body control module) terminal 35
- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to combination meter terminals 41 and 42
- through 10A fuse [No. 14, located in the fuse block (J/B)]

Ground is supplied

- to BCM (body control module) terminal 8
- through grounds E17 and E43, and
- to combination meter terminals 45 and 46
- through grounds M30 and M66.

LH Turn

When the turn signal switch (combination switch) is moved to the left position, the BCM (body control module) receives input signal requesting the left turn signals to flash. The BCM then supplies power

- through BCM (body control module) terminal 22
- to front combination lamp LH terminal 6, and
- to rear combination lamp LH terminal 5.

Ground is supplied to the front combination lamp LH terminal 8 through grounds E17 and E43.
Ground is supplied to the rear combination lamp LH terminal 4 through grounds B103.
The BCM also supplies input to combination meter terminals 27 and 28 across the CAN communication lines. This input is processed by the unified meter control unit in the combination meter, which in turn supplies ground to the left turn signal indicator lamp.
With power and input supplied, the BCM controls the flashing of the LH turn signal lamps.

RH Turn

When the turn signal switch (combination switch) is moved to the right position, the BCM (body control module) receives input signal requesting the right turn signals to flash. The BCM then supplies power

- through BCM (body control module) terminal 21
- to front combination lamp RH terminal 6, and
- to rear combination lamp RH terminal 5.

Ground is supplied to the front combination lamp RH terminal 8 through grounds E17 and E43.
Ground is supplied to the rear combination lamp RH terminal 4 through ground B103.
The BCM also supplies input to combination meter terminals 27 and 28 across the CAN communication lines. This input is processed by the unified meter control unit in the combination meter, which in turn supplies ground to the right turn signal indicator lamp.
With power and input supplied, the BCM controls the flashing of the RH turn signal lamps.

HAZARD LAMP OPERATION

Power is supplied at all times

- to BCM (body control module) terminal 7
- through 50A fusible link [letter F, located in the fuse and fusible link box], and
- to combination meter terminal 43
- through 10A fuse [No. 19, located in the fuse block (J/B)].

Ground is supplied

- to hazard switch terminal 3
- through grounds M30 and M66,
- to BCM terminal 8,
- through grounds E17 and E43, and
- to combination meter terminals 45 and 46
- through grounds M30 and M66.

When the hazard switch is depressed, ground is supplied

- to BCM terminal 61
- through hazard switch terminal 1.

The BCM then supplies power

- through BCM terminal 22
- to front combination lamp LH terminal 6
- to rear combination lamp LH terminal 5
- through BCM terminal 21
- to front combination lamp RH terminal 6
- to rear combination lamp RH terminal 5.

Ground is supplied

- to the front combination lamp LH terminal 8 through grounds E17 and E43
- to the front combination lamp RH terminal 8 through grounds E17 and E43
- to the rear combination lamp LH terminal 4 through ground B103
- to the rear combination lamp RH terminal 4 through ground B103.

The BCM also supplies input to combination meter terminals 27 and 28 across the CAN communication lines. This input is processed by the unified meter control unit in the combination meter, which in turn supplies ground to the left and right turn signal indicator lamps.
With power and input supplied, the BCM controls the flashing of the hazard warning lamps.

REMOTE KEYLESS ENTRY SYSTEM OPERATION

Power is supplied at all times

- to BCM (body control module) terminal 7
- through 50A fusible link [letter F, located in the fuse and fusible link box], and
- to combination meter terminal 43
- through 10A fuse [No. 19, located in the fuse block (J/B)].

Ground is supplied

- to BCM terminal 8,
- through grounds E17 and E43, and
- to combination meter terminals 45 and 46
- through grounds M30 and M66.

When the remote keyless entry system is triggered by input from the keyfob, the BCM supplies power

- through BCM terminal 22
- to front combination lamp LH terminal 6
- to rear combination lamp LH terminal 5
- through BCM terminal 21
- to front combination lamp RH terminal 6
- to rear combination lamp RH terminal 5.

Ground is supplied

- to the front combination lamp LH terminal 8 through grounds E17 and E43.
- to the front combination lamp RH terminal 8 through grounds E17 and E43.
- to the rear combination lamp LH terminal 4 through ground B103.
- to the rear combination lamp RH terminal 4 through ground B103.

The BCM also supplies input to combination meter terminals 27 and 28 across the CAN communication lines. This input is processed by the unified meter control unit in the combination meter, which in turn supplies ground to the left and right turn signal indicator lamps.
With power and ground supplied, the BCM controls the flashing of the hazard warning lamps when key fob is used to activate the remote keyless entry system.

COMBINATION SWITCH READING FUNCTION

Refer to LT-122, "Combination Switch Reading Function" .

CAN Communication System Description

AKS0039Y

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

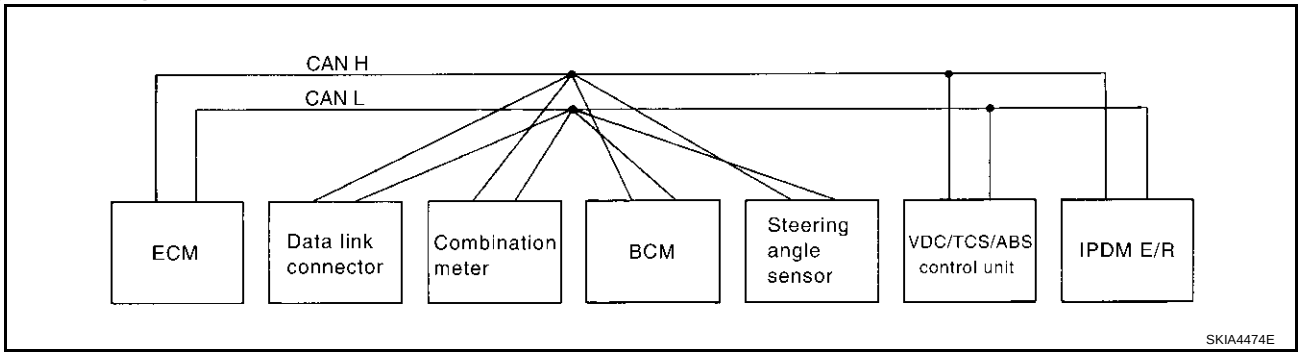
AKS005QF

Body type	Coupe	
Axle	2WD	
Engine	VQ35DE	
Transmission	M/T	A/T
Brake control	VDC	
CAN communication unit		
ECM	×	×
TCM		×
Data link connector	×	×
Combination meter	×	×
BCM	×	×
Steering angle sensor	×	×
VDC/TCS/ABS control unit	×	×
IPDM E/R	×	×
CAN communication type	LT-104	LT-106

×: Applicable

TYPE 1

System diagram



Input/output signal chart

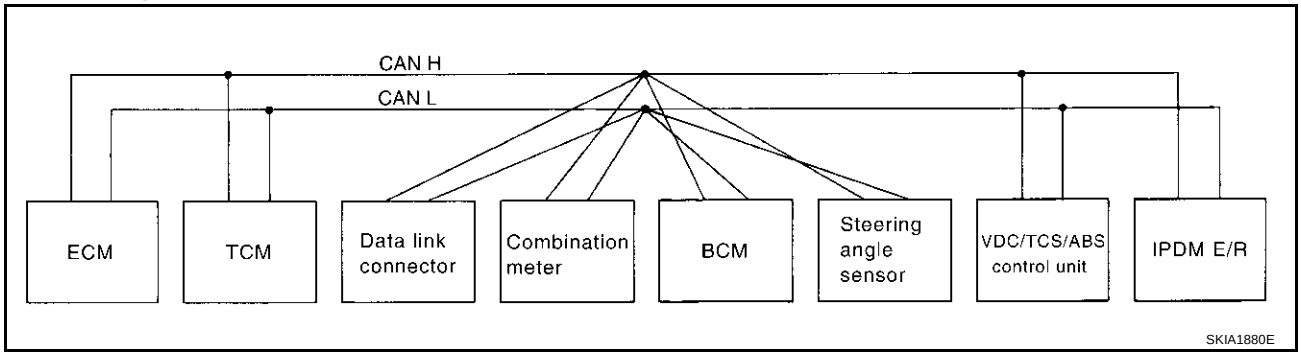
T: Transmit R: Receive

Signals	ECM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Engine speed signal	T	R			R	
Engine coolant temperature signal	T	R				
Accelerator pedal position signal	T				R	
Fuel consumption monitor signal	T	R				
Air conditioner switch signal	R		T			
A/C compressor request signal	T					R
A/C compressor feedback signal	T	R				

Signals	ECM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Blower fan motor switch signal	R		T			
Cooling fan motor operation signal	T					R
Position lights request signal		R	T			R
Low beam request signal			T			R
Low beam status signal	R		R			T
High beam request signal		R	T			R
High beam status signal	R		R			T
Front fog lights request signal			T			R
Vehicle speed signal		R			T	
	R	T	R			
Sleep request 1 signal		R	T			
Sleep request 2 signal			T			R
Wake up request 1 signal		R	T			
Wake up request 2 signal		R	T			
Door switch signal (without navigation system)		R	T			R
Door switch signal (with navigation system)		T	R			
Turn indicator signal		R	T			
Seat belt buckle switch signal		T	R			
Oil pressure switch signal		R				T
Buzzer output signal		R	T			
Trunk switch signal		R	T			
Malfunction indicator lamp signal	T	R				
ASCD SET lamp signal	T	R				
ASCD CRUISE lamp signal	T	R				
Fuel level sensor signal	R	T				
Front wiper request signal			T			R
Front wiper stop position signal			R			T
Rear window defogger switch signal			T			R
Rear window defogger control signal	R		R			T
Hood switch signal			R			T
Theft warning horn request signal			T			R
Horn chirp signal			T			R
Steering angle sensor signal				T	R	

TYPE 2

System diagram



Input/output signal chart

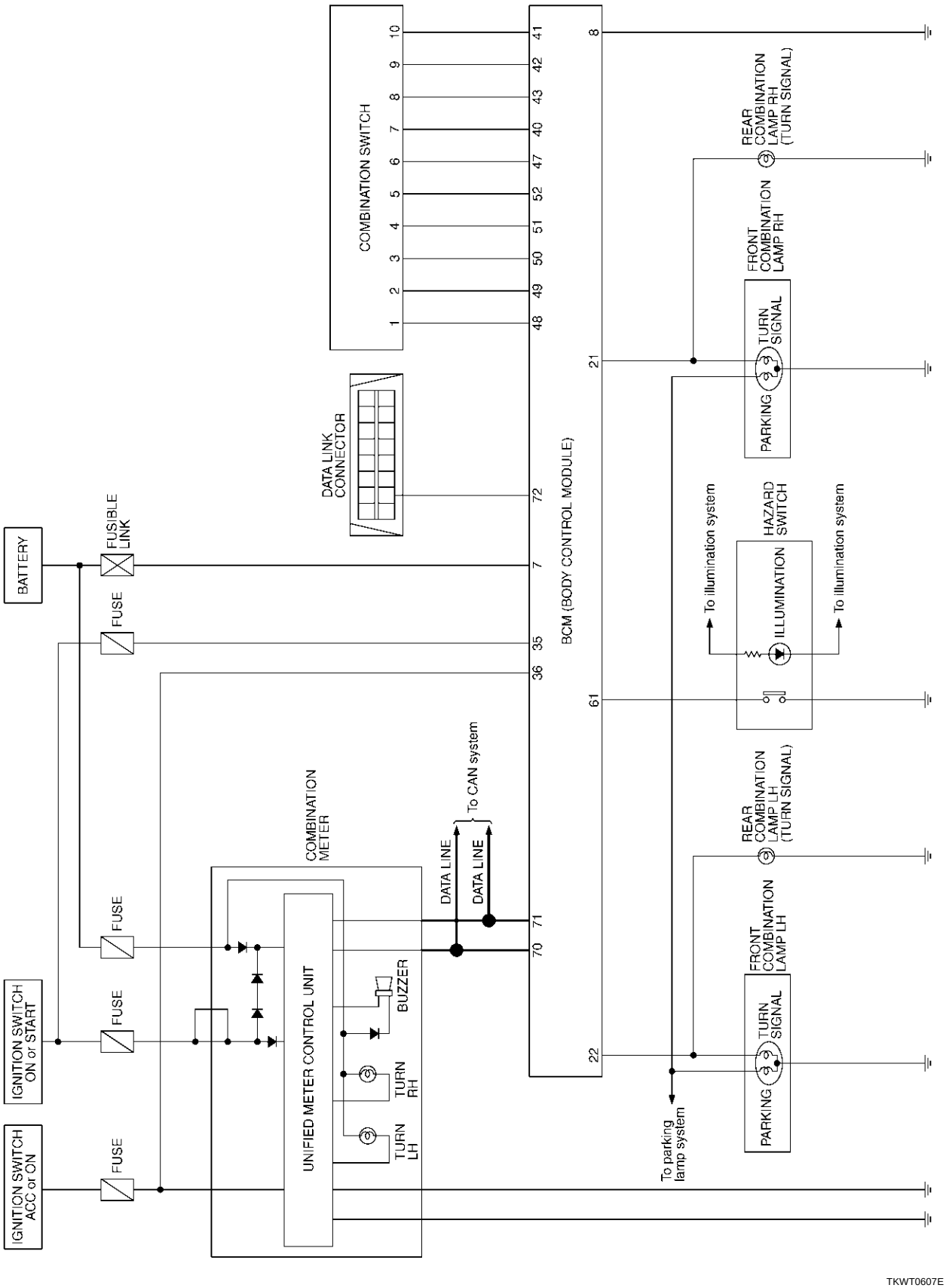
T: Transmit R: Receive

Signals	ECM	TCM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Engine speed signal	T	R	R			R	
Engine coolant temperature signal	T	R	R				
Accelerator pedal position signal	T	R				R	
Closed throttle position signal	T	R					
Wide open throttle position signal	T	R					
Battery voltage signal	T	R					
Stop lamp switch		R	T				
Fuel consumption monitor signal	T		R				
A/T self-diagnosis signal	R	T					
A/T CHECK indicator lamp signal		T	R				
A/T position indicator signal		T	R			R	
ABS operation signal		R				T	
A/T shift schedule change demand signal		R				T	
Air conditioner switch signal	R			T			
A/C compressor request signal	T						R
A/C compressor feedback signal	T		R				
Blower fan motor switch signal	R			T			
Cooling fan motor operation signal	T						R
Position lights request signal			R	T			R
Low beam request signal				T			R
Low beam status signal	R			R			T
High beam request signal			R	T			R
High beam status signal	R			R			T
Front fog lights request signal				T			R
Vehicle speed signal			R			T	
	R	R	T	R			
Sleep request 1 signal			R	T			
Sleep request 2 signal				T			R
Wake up request 1 signal			R	T			
Wake up request 2 signal			R	T			

Signals	ECM	TCM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Door switch signal (without navigation system)			R	T			R
Door switch signal (with navigation system)			T	R			
Turn indicator signal			R	T			
Seat belt buckle switch signal			T	R			
Oil pressure switch signal			R				T
Buzzer output signal			R	T			
Trunk switch signal			R	T			
Malfunction indicator lamp signal	T		R				
ASCD SET lamp signal	T		R				
ASCD CRUISE lamp signal	T		R				
Fuel level sensor signal	R		T				
Output shaft revolution signal	R	T					
Turbine revolution signal	R	T					
Front wiper request signal				T			R
Front wiper stop position signal				R			T
Rear window defogger switch signal				T			R
Rear window defogger control signal	R			R			T
Manual mode signal		R	T				
Not manual mode signal		R	T				
Manual mode shift up signal		R	T				
Manual mode shift down signal		R	T				
Manual mode indicator signal		T	R				
Hood switch signal				R			T
Theft warning horn request signal				T			R
Horn chirp signal				T			R
Steering angle sensor signal					T	R	

Schematic

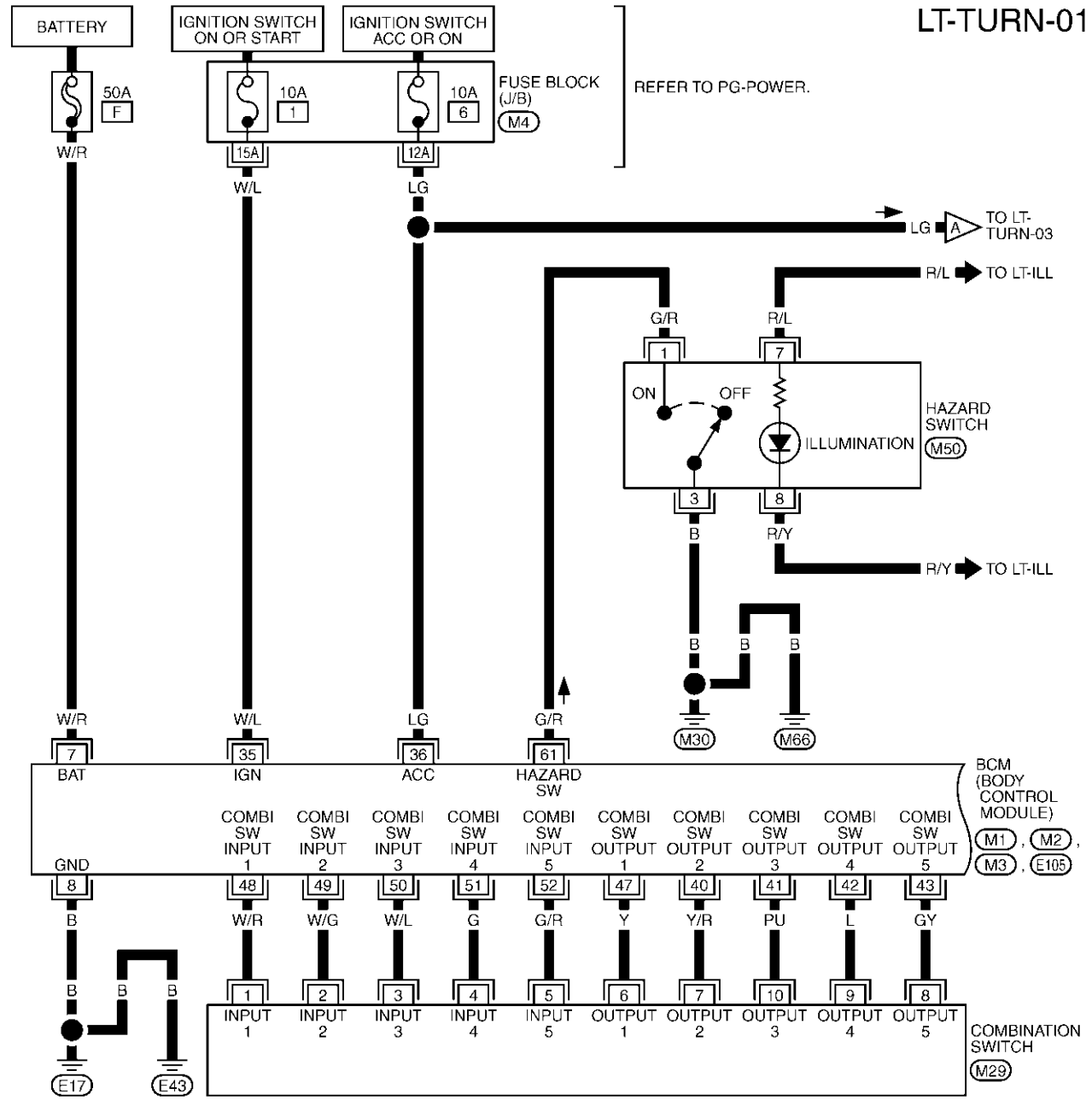
AKS003A0



TKWT0607E

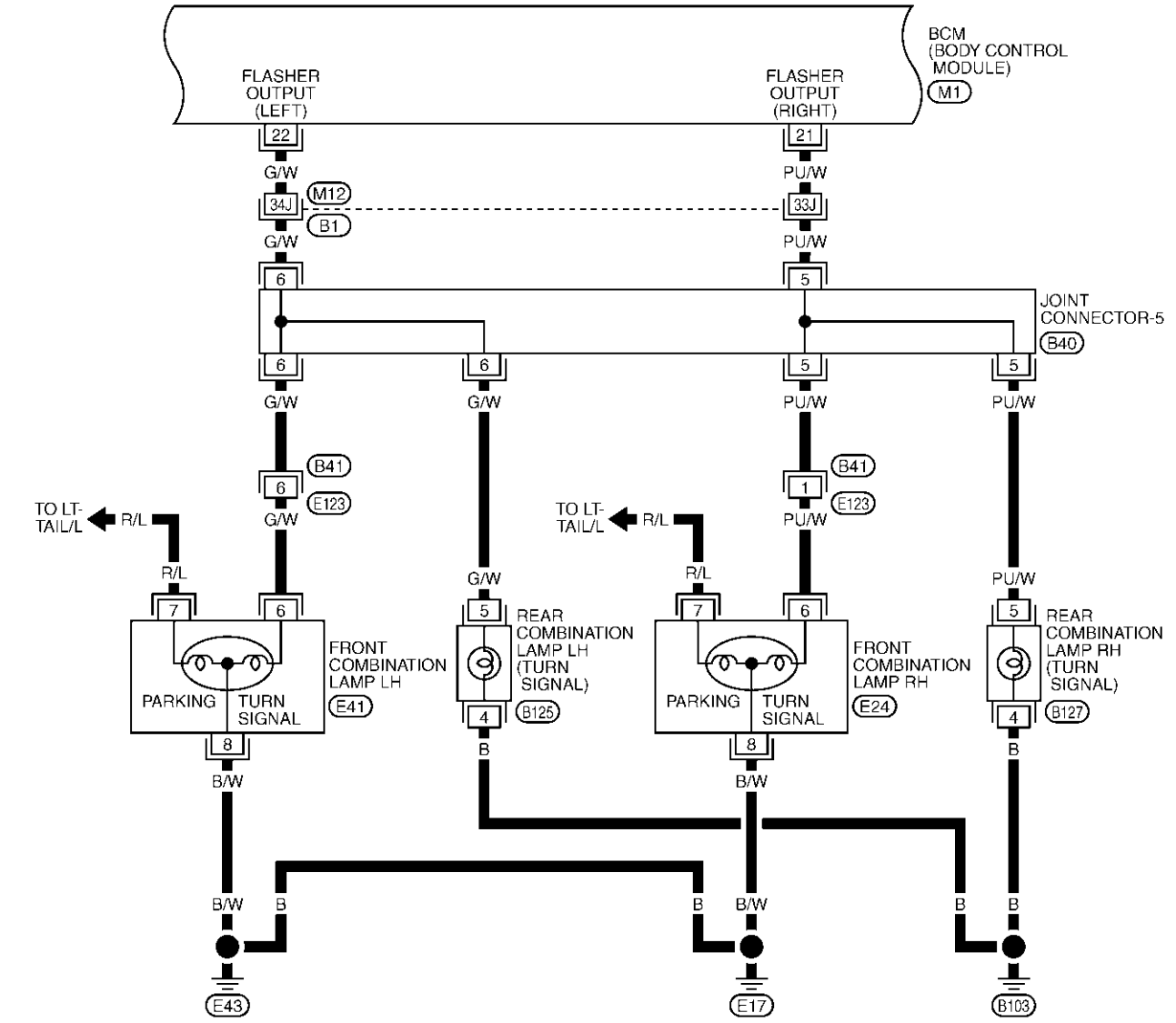
Wiring Diagram — TURN —

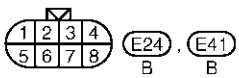
AKS003A1

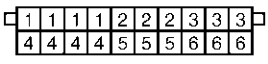


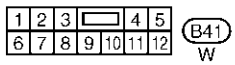
TKWT0608E

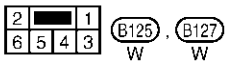
LT-TURN-02





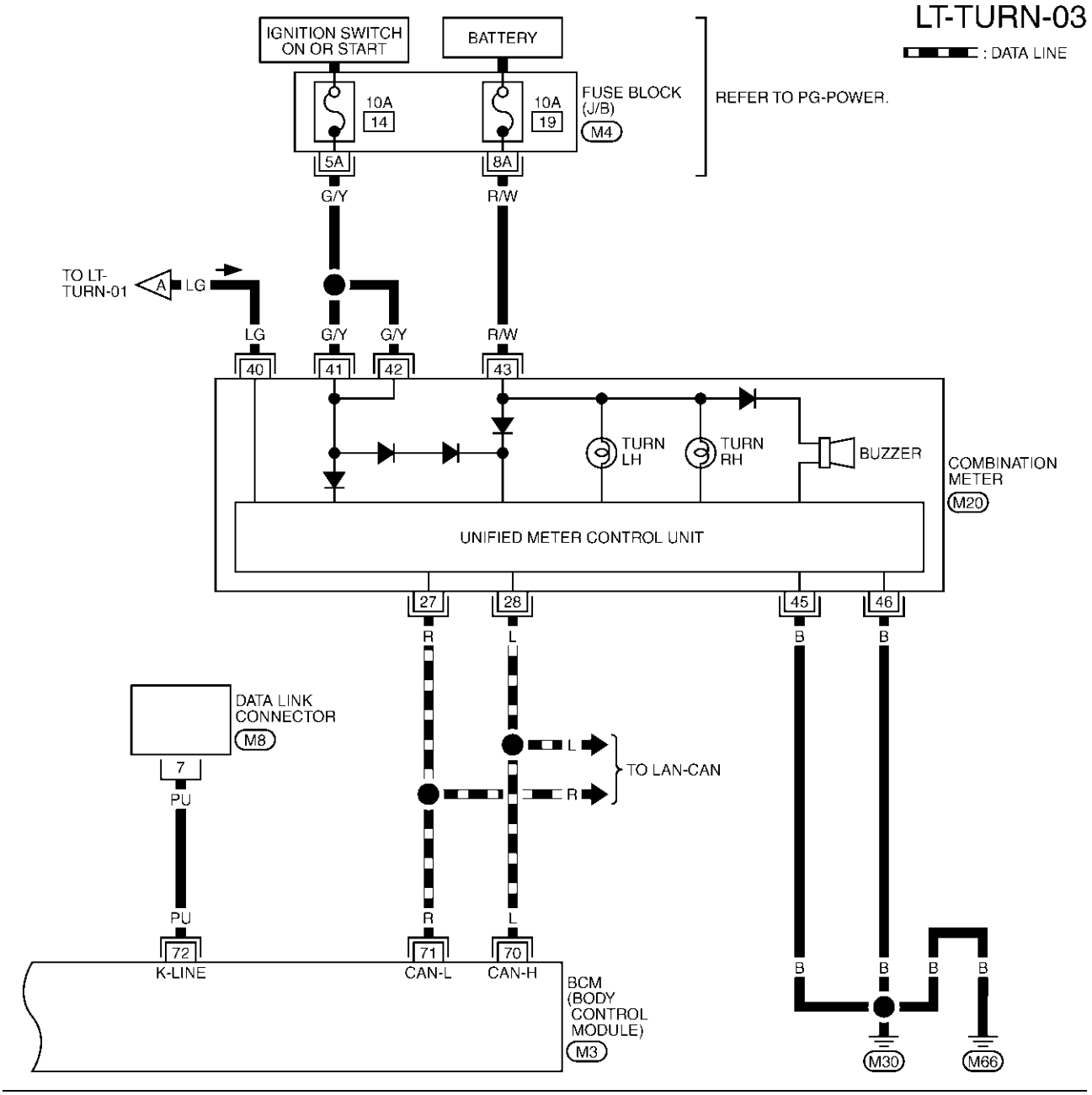






REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)
M1 -ELECTRICAL UNITS

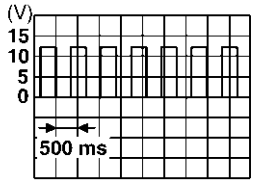
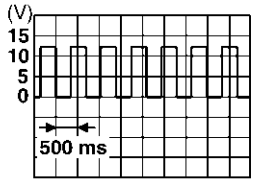
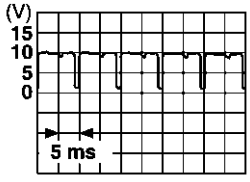
TKWT0609E


LT-TURN-03
: DATA LINE
IGNITION SWITCH ON OR START
BATTERY
10A 14
10A 19
FUSE BLOCK (J/B) M4
REFER TO PG-POWER.
5A
8A
G/Y
R/W
TO LT-TURN-01
A
LG
LG
G/Y
G/Y
R/W
40
41
42
43
TURN LH
TURN RH
BUZZER
COMBINATION METER M20
UNIFIED METER CONTROL UNIT
27
28
45
46
R
L
B
B
DATA LINK CONNECTOR M8
7
PU
PU
L
R
TO LAN-CAN
72
71
70
K-LINE
CAN-L
CAN-H
BCM (BODY CONTROL MODULE) M3
B
B
B
B
M30
M66
16 15 14 13 12 11 10 9
8 7 6 5 4 3 2 1
M8
W
25 26 27 28 29 30 31 32 33 34 35
36 37 38 39 40 41 42 43 44 45 46 47 48
M20
W
REFER TO THE FOLLOWING.
M4 -FUSE BLOCK-JUNCTION BOX (J/B)
M3 -ELECTRICAL UNITS

TKWT0610E

Terminals and Reference Value for BCM

AKS003A2

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
7	W/R	Battery power supply	OFF	—		Battery voltage
8	B	Ground	ON	—		Approx. 0V
21	PU/W	Turn signal (right)	ON	Combination switch	Turn right ON	 SKIA3009J
22	G/W	Turn signal (left)	ON	Combination switch	Turn left ON	 SKIA3009J
35	W/L	Ignition switch (ON)	ON	—		Battery voltage
36	LG	Ignition switch (ACC)	ACC	—		Battery voltage
40	Y/R	Combination switch Output 2	ON	Lighting, turn, wiper OFF		 SKIA1119J
41	PU	Combination switch Output 3				
42	L	Combination switch Output 4				
43	GY	Combination switch Output 5				
47	Y	Combination switch Output 1				
48	W/R	Combination switch Input 1	ON	Lighting, turn, wiper OFF		4.5 V or more
49	W/G	Combination switch Input 2				
50	W/L	Combination switch Input 3				
51	G	Combination switch Input 4				
52	G/R	Combination switch Input 5				
61	G/R	Hazard switch	OFF	Hazard switch	ON	Approx. 0V
					OFF	Approx. 5V
70	L	CAN–H	—	—		—
71	R	CAN–L	—	—		—
72	PU	K–LINE	—	—		—

How to Proceed With Trouble Diagnosis

AKS003A3

1. Confirm the trouble symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-102, "System Description" .
3. Carry out the Preliminary Inspection. Refer to LT-113, "Preliminary Inspection" .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the turn signal and hazard warning lamps operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection end.

Preliminary Inspection

AKS003A4

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown fuses.

UNIT	POWER SOURCE	FUSE No.
BCM	Battery	F
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6

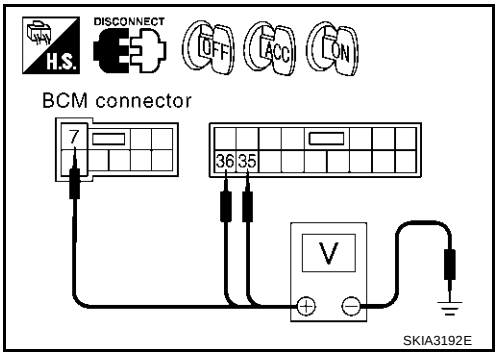
Refer to LT-109, "Wiring Diagram — TURN —" .

OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of problem 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 connector and ground.



Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
E105	7 (W/R)	Ground	Battery voltage	Battery voltage	Battery voltage
M1	35 (W/L)		0V	0V	Battery voltage
M1	36 (LG)		0V	Battery voltage	Battery voltage

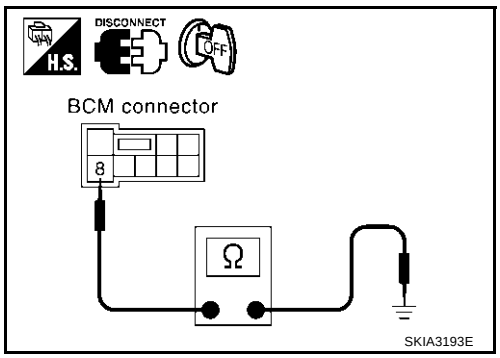
OK or NG

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM and ground.

Terminals			Continuity
(+)		(–)	
Connector	Terminal (Wire color)		
E105	8 (B)	Ground	Yes



OK or NG

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

CONSULT-II Function

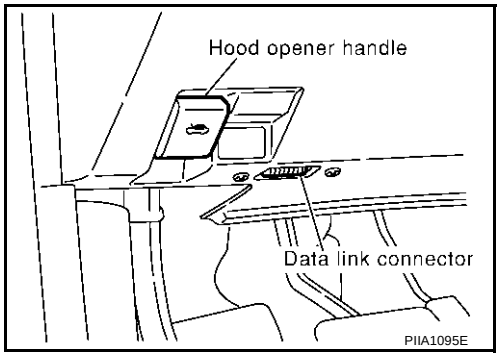
AKS003A5

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 the communication line from BCM.

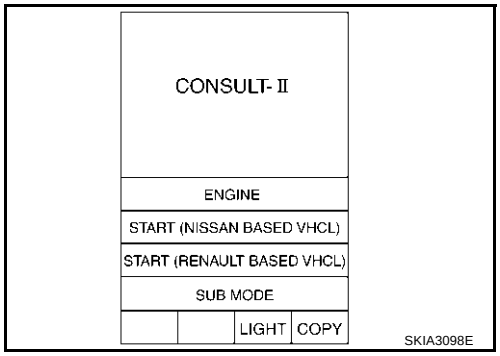
BCM diagnosis part	Check item, diagnosis mode	Description
FLASHER	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending driving signal to them.

CONSULT-II BASIC OPERATION

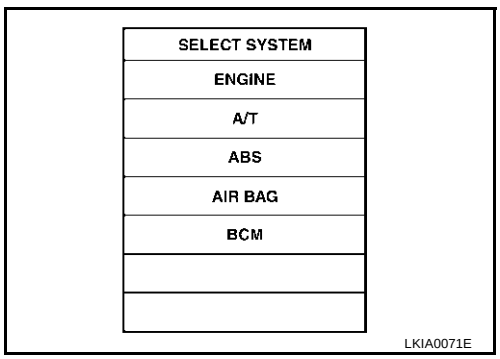
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



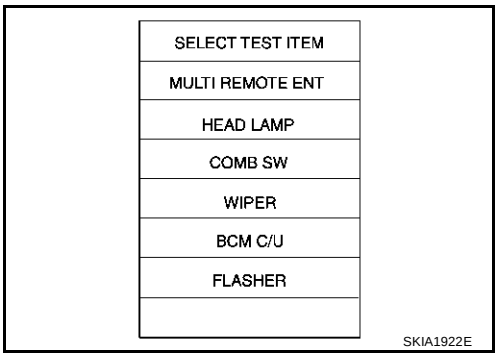
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “BCM” on “SELECT SYSTEM” screen.
If “BCM” is not indicated, go to GI-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 the “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 the ignition switch signal.
HAZARD SW	“ON/OFF”	Displays “Hazard ON (ON)/Hazard OFF (OFF)” status, determined from hazard switch signal.
TURN SIGNAL R	“ON/OFF”	Displays “Turn right (ON)/Other (OFF)” status, determined from lighting switch signal.
TURN SIGNAL L	“ON/OFF”	Displays “Turn left (ON)/Other (OFF)” status, determined from lighting switch signal.

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 (RIGHT)	Turn signal lamp (right) can be operated by any ON-OFF operations.
FLASHER (LEFT)	Turn signal lamp (left) can be operated by any ON-OFF operations.
FLASHER (RIGHT) (CAN)	Turn signal lamp (right) indicator signal can be output by CAN communication line to gauges by any ON-OFF operations.
FLASHER (LEFT) (CAN)	Turn signal lamp (left) indicator signal can be output by CAN communication line to gauges by any ON-OFF operations.

Turn Signal Lamp Does Not Operate

AKS003A6

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. INSPECTION 1: COMBINATION SWITCH AND BCM

Select “BCM” on CONSULT-II. Carry out “BCM C/U” self-diagnosis.

Displayed results of self-diagnosis

Diagnosis system 1 - 5>> Combination switch system malfunction. Refer to LT-128, "Combination Switch Inspection According to Self-Diagnostic Results" .
No malfunction detected>> GO TO 3.

SELF-DIAG RESULTS	
DTC RESULTS	TIME
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	

LKIA0073E

3. INSPECTION 2: COMBINATION SWITCH AND BCM

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

OK or NG

OK >> GO TO 4.
NG >> Replace lighting switch.

DATA MONITOR	
MONITOR	
IGN ON SW	ON
HAZARD SW	ON
TURN SIGNAL R	OFF
TURN SIGNAL L	OFF

LKIA0083E

4. INSPECTION 1: BCM AND TURN SIGNAL LAMPS

1. Select “BCM” on CONSULT-II. Select “FLASHER” active test.
2. Make sure “FLASHER RIGHT” and “FLASHER LEFT” operate.

OK or NG

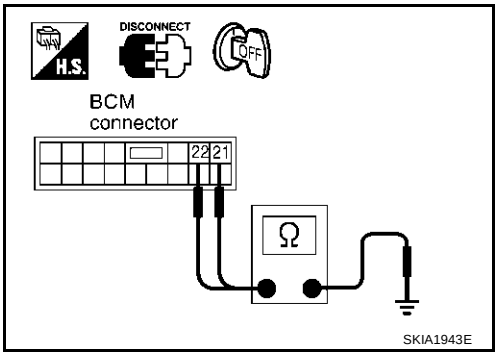
OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .
NG >> GO TO 5.

ACTIVE TEST	
FLASHER RIGHT	ON
	OFF

LKIA0084E

5. INSPECTION 2: BCM AND TURN SIGNAL LAMPS

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				Continuity
BCM			Ground	
Connector		Terminal (Wire color)		
RH	M1	21 (PU/W)		No
LH		22 (G/W)		

OK or NG

OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .
NG >> Repair harness or connector.

Hazard Warning Lamp Does Not Operate But Turn Signal Lamp Operate

AKS003A7

1. CHECK BULB

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

OK or NG

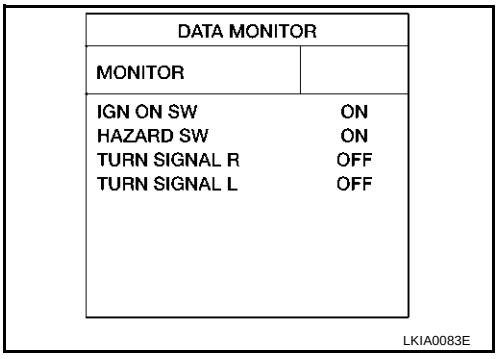
OK >> GO TO 2.
NG >> Replace turn signal lamp bulb.

2. INSPECTION 1: HAZARD SWITCH AND BCM

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

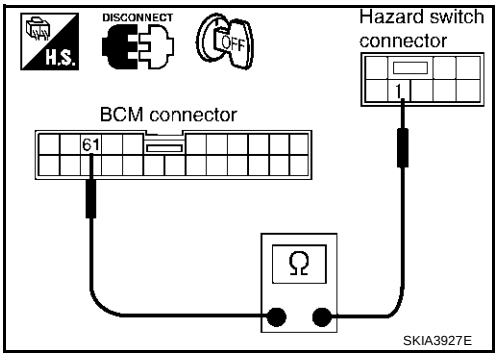
OK or NG

OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .
NG >> GO TO 3.



3. INSPECTION 2: HAZARD SWITCH AND BCM

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



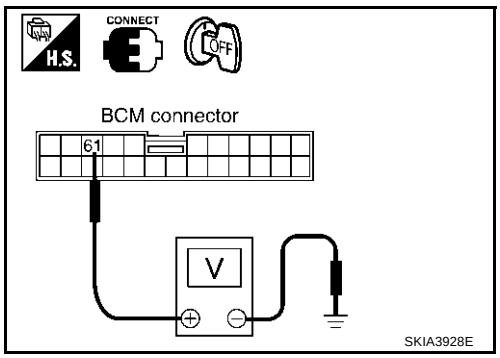
Terminals				Continuity
BCM		Hazard switch		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M3	61 (G/R)	M50	1 (G/R)	Yes

OK or NG

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

4. CHECK BCM

1. Connect BCM connector.
2. Check voltage between harness connector of BCM and ground.



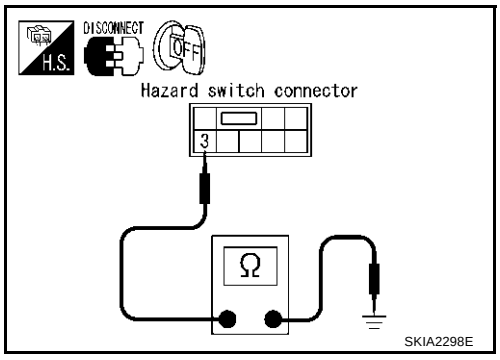
Terminals			Voltage
BCM		Ground	
Connector	Terminal (Wire color)		
M3	61 (G/R)		Approx. 5V

OK or NG

OK >> GO TO 5.
NG >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .

5. CHECK HAZARD SWITCH GROUND CIRCUIT

Check continuity between harness connector of hazard switch and ground.



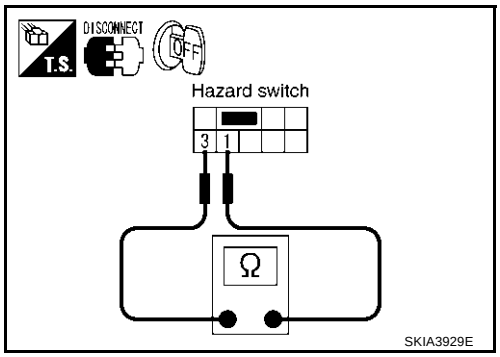
Terminals			Continuity
Hazard switch		Ground	
Connector	Terminal (Wire color)		
M50	3 (B)		Yes

OK or NG

OK >> GO TO 6
NG >> Repair or replace harness.

6. CHECK HAZARD SWITCH

Check continuity hazard switch.



Terminal		Condition	Continuity
Hazard switch			
1	3	Hazard switch is ON	Yes
		Hazard switch is OFF	No

OK or NG

OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .
NG >> Replace hazard switch.

Turn Signal Indicator Lamp Does Not Operate

AKS003A8

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)

AKS003A9

Refer to LT-28, "Bulb Replacement" in "HEAD LAMP (FOR USA)".

Bulb Replacement (Rear Turn Signal Lamp)

AKS003AB

Refer to LT-161, "Bulb Replacement" in "REAR COMBINATION LAMP".

Removal and Installation of Front Turn Signal Lamp

AKS003AC

Refer to LT-29, "Removal and Installation" in"HEAD LAMP (FOR USA)".

Removal and Installation of Rear Turn Signal Lamp

AKS003AE

Refer to LT-161, "Removal and Installation" in "REAR COMBINATION LAMP".

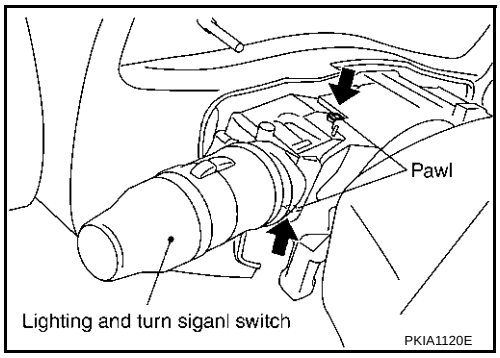
LIGHTING AND TURN SIGNAL SWITCH

PFP:25540

Removal and Installation

AKS003AF

1. Remove steering column cover. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" in “IP”section.
2. Remove mounting bolts of cluster lid A and combination meter. 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.
4. Disconnect lighting and turn signal switch connector.



HAZARD SWITCH

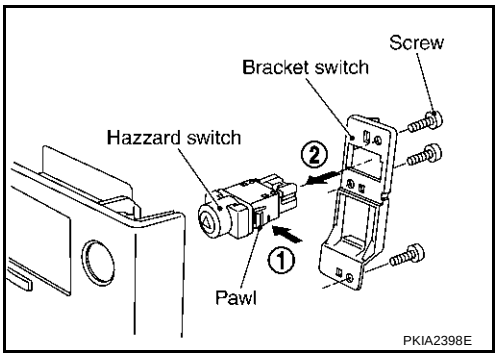
PFP:25290

Removal and Installation (M/T)

AKS003AG

REMOVAL

1. Remove console boot (M/T). Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" in “IP” section.
2. Remove connector.
3. Remove screws and remove bracket from console finisher (M/T).
4. Press pawl on reverse side and remove the hazard switch.



INSTALLATION

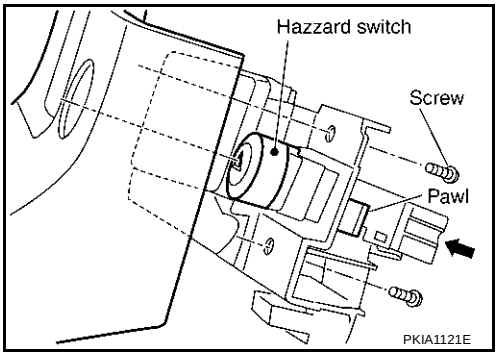
Install in the reverse order of removal.

Removal and Installation (A/T)

AKS005QU

REMOVAL

1. Remove console finisher (A/T). Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" in “IP” section.
2. Remove connector.
3. Remove screws and remove ashtray assembly from console finisher (A/T).
4. Press pawl on reverse side and remove the hazard switch.



INSTALLATION

Install in the reverse order of removal.

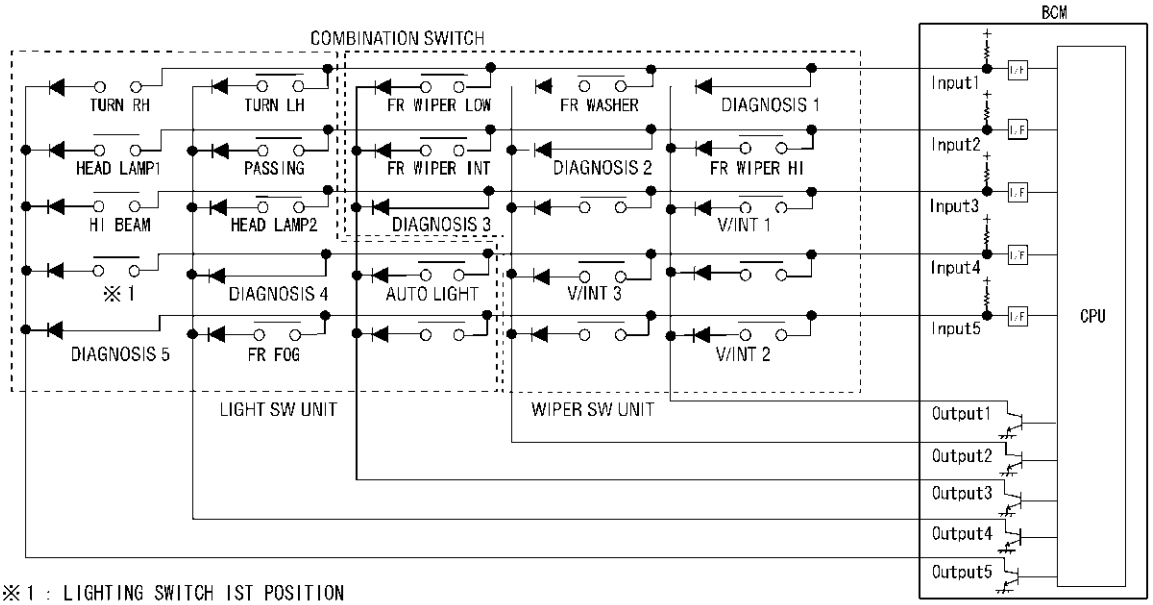
COMBINATION SWITCH

PFP:25567

Combination Switch Reading Function

AKS003S8

1. Description
   - BCM reads combination switch (light, wiper washer, turn signal) status, and controls various electrical components according to the results.
   - BCM reads information of 20 switches and 5 diagnostic results by combining five output terminals (OUTPUT 1 - 5) and five input terminals (INPUT 1 - 5).
2. Operation description
   - BCM outputs battery voltage from input terminals (INPUT 1 - 5) all the time. At the same time output terminals (OUTPUT 1 - 5) activate transistors in turn, and allow current to flow. At this time, if any (1 or more) of the switches are ON, the input terminals corresponding to these switches detect current flow, and the interface of BCM detects the condition. Then BCM judges switches are ON.



SKIA3873E

3. BCM - Operation table of combination switches
   - BCM reads operation status of combination switches by the combination shown in the table.

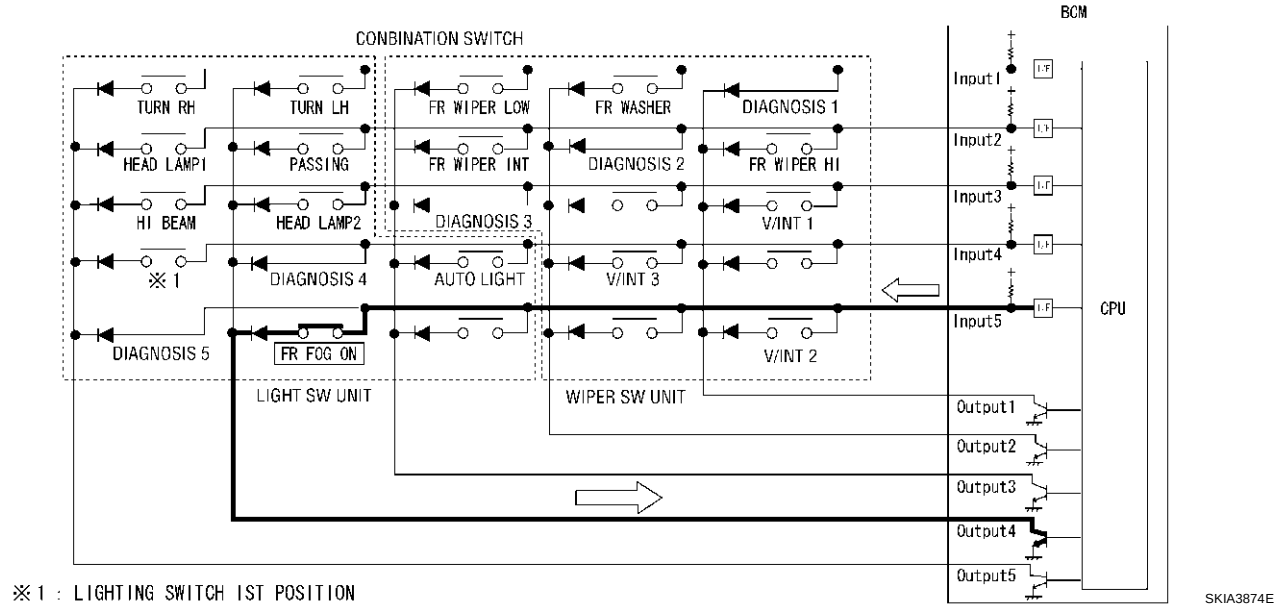
	COMB SW INPUT 1		COMB SW INPUT 2		COMB SW INPUT 3		COMB SW INPUT 4		COMB SW INPUT 5	
	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
COMB SW OUTPUT 1	DIAGNOSIS 1 OK	DIAGNOSIS 1 NG	FR WIPER HI ON	FR WIPER HI OFF	V/INT 1 ON	V/INT 1 OFF	—	—	V/INT 2 ON	V/INT 2 OFF
COMB SW OUTPUT 2	FR WASHER ON	FR WASHER OFF	DIAGNOSIS 2 OK	DIAGNOSIS 2 NG	—	—	V/INT 3 ON	V/INT 3 OFF	—	—
COMB SW OUTPUT 3	FR WIPER LOW ON	FR WIPER LOW OFF	FR WIPER INT ON	FR WIPER INT OFF	DIAGNOSIS 3 OK	DIAGNOSIS 3 NG	AUTO LIGHT ON	AUTO LIGHT OFF	—	—
COMB SW OUTPUT 4	TURN LH ON	TURN LH OFF	PASSING ON	PASSING OFF	HEAD LAMP 2 ON	HEAD LAMP 2 OFF	DIAGNOSIS 4 OK	DIAGNOSIS 4 NG	FR FOG ON	FR FOG OFF
COMB SW OUTPUT 5	TURN RH ON	TURN RH OFF	HEAD LAMP ON	HEAD LAMP OFF	HI BEAM ON	HI BEAM OFF	LIGHTING SWITCH 1ST POSITION ON	LIGHTING SWITCH 1ST POSITION OFF	DIAGNOSIS 5 OK	DIAGNOSIS 5 NG

SKIA2101E

NOTE:
Dual switches are set for head lamps.

4. Example (When fog lamp switch is turned ON)

- When fog lamp switch is turned ON, contact in combination switch turns ON. At this time if OUTPUT 4 transistor is activated, BCM detects current flow in INPUT 5.
- When OUTPUT 4 transistor is ON, BCM detects current flow in INPUT 5, and judges fog lamp switch is ON. Then BCM sends fog lamp ON signal to IPDM E/R using CAN communication.
- When OUTPUT 4 transistor is activated again, BCM detects current flow in INPUT 5, and confirms fog lamp switch is continuously ON.

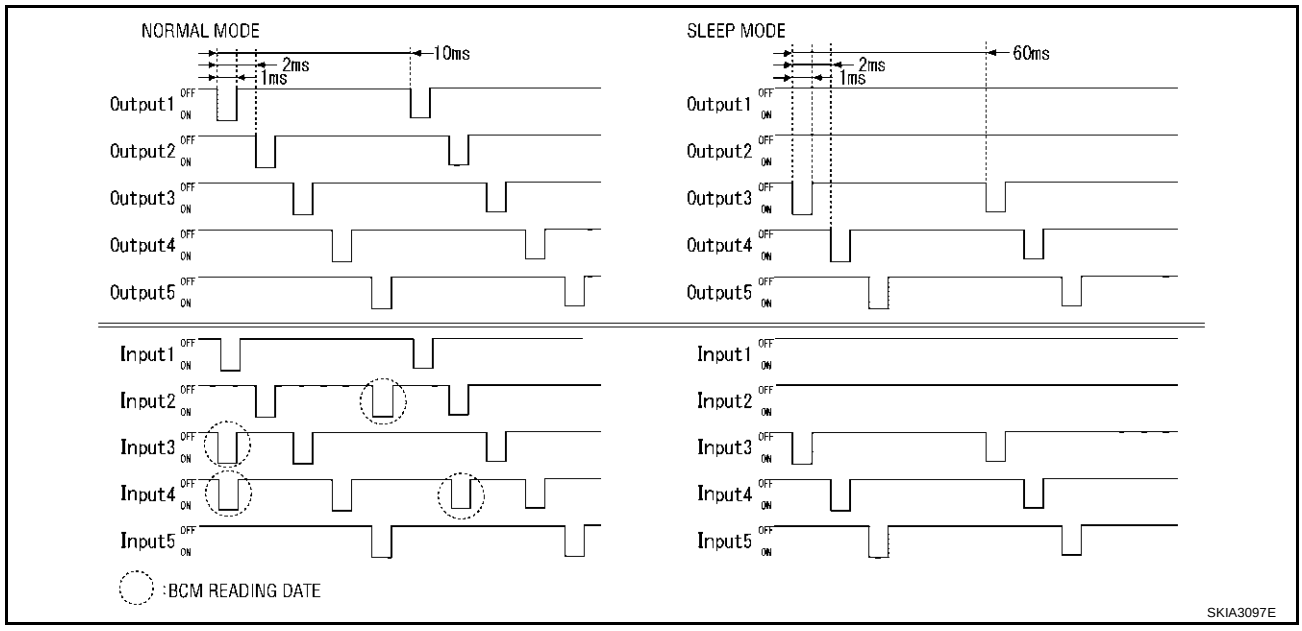


NOTE:
Each OUTPUT terminal transistor is activated at 10 ms intervals. Therefore, after a switch is turned ON, the electrical loads are activated with a time delay, but this time delay is so short that it cannot be noticed.

5. Operation mode
   - Combination switch reading function has operation modes shown below.

a. Normal mode
   - When BCM is not in sleep mode, each OUTPUT (1 - 5) terminal turns ON-OFF at 10 ms intervals.

b. Sleep mode
   - When BCM is in sleep mode, transistors of OUTPUT 1 and 2 stop the output, and BCM enters low-current-consumption mode. OUTPUTS (3 - 5) turn ON-OFF at 60 ms intervals, and receive lighting switch input only.



CONSULT-II Function

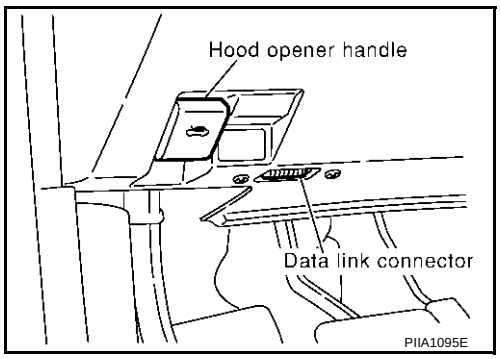
AKS003S9

CONSULT-II performs the following functions communicating with BCM.

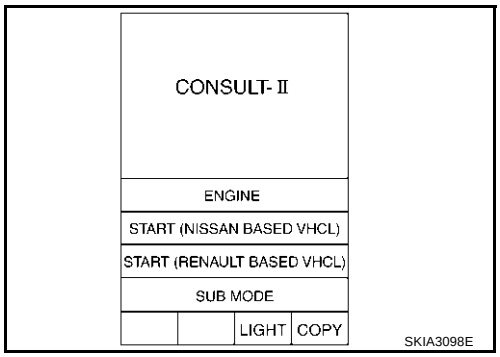
BCM diagnosis part	Check item, diagnosis mode	Description
Combination switch	DATA MONITOR	Displays BCM input data in real time.

CONSULT-II BASIC OPERATION

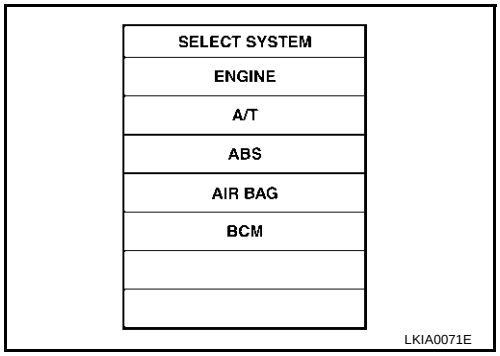
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



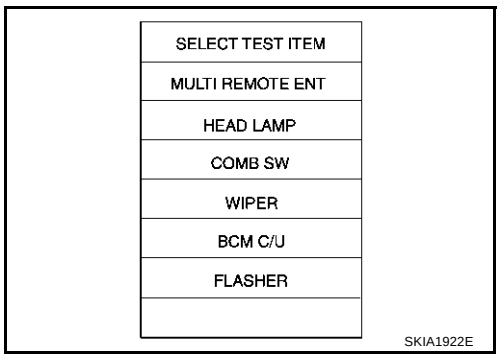
2. Touch “START(NISSAN BASED VHCL)”.



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



4. Select the desired part to be diagnosed on the “SELECT TEST ITEM” screen.



DATA MONITOR

Operation Procedure

1. Touch “COMB SW” on “SELECT TEST ITEM” screen.

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

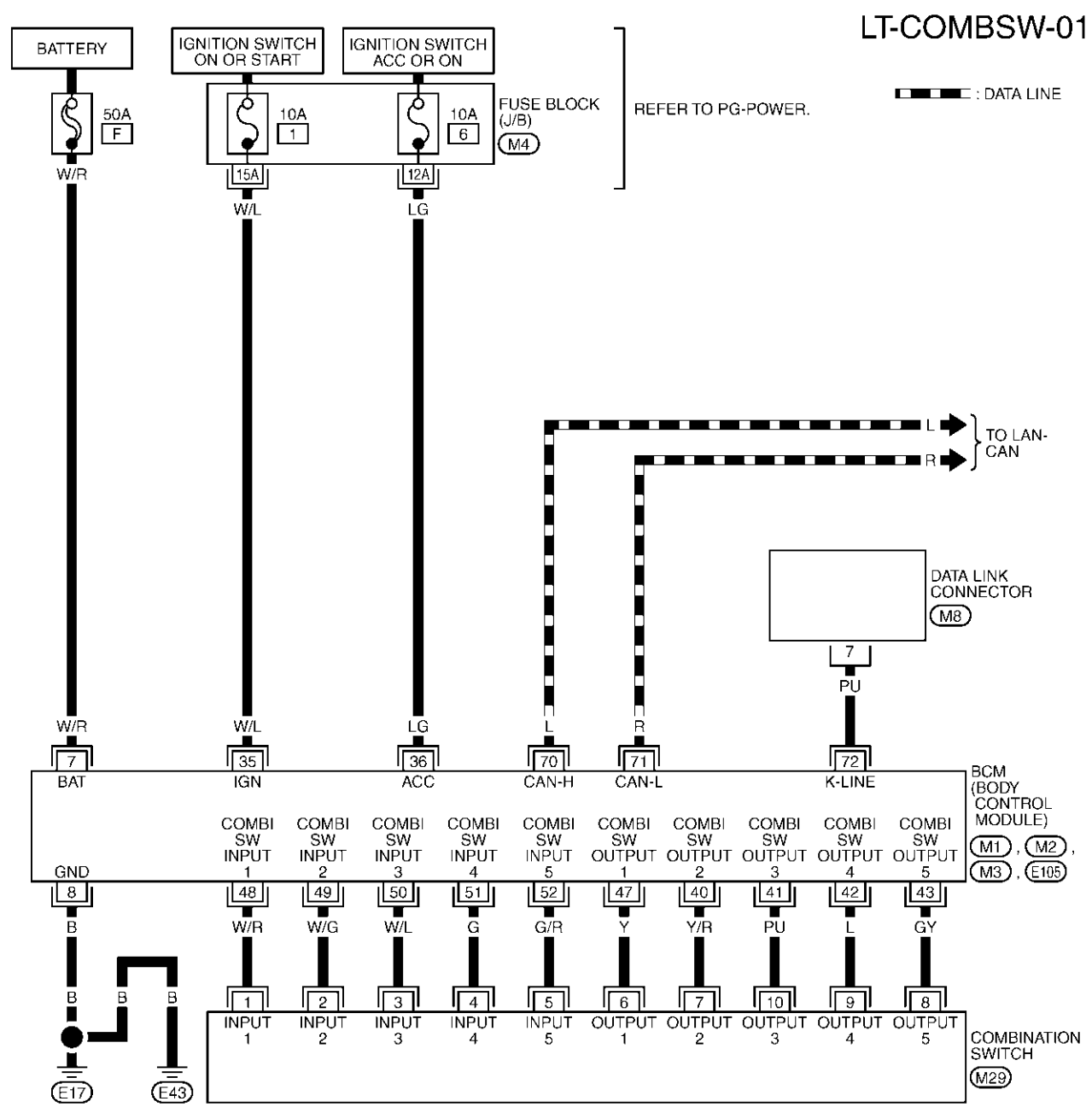
Display Item List

Monitor item name "OPERATION OR UNIT"		Contents
TAIL LAMP SW	"ON/OFF"	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting 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.
HI BEAM SW	"ON/OFF"	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
PASSING SW	"ON/OFF"	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
AUTO LIGHT SW	"ON/OFF"	Displays status of the lighting switch as judged from the lighting switch signal. (AUTO position: ON/Other than AUTO position: OFF)
FR FOG SW	"ON/OFF"	Displays status (front fog switch: ON/Others: OFF) of front fog switch judged from lighting switch signal.
FR WIPER HI	"ON/OFF"	Displays "Front Wiper HI (ON)/Other (OFF)" status, determined from wiper switch signal.
FR WIPER LOW	"ON/OFF"	Displays "Front Wiper LOW (ON)/Other (OFF)" status, determined from wiper switch signal.
FR WIPER INT	"ON/OFF"	Displays "Front Wiper INT (ON)/Other (OFF)" status, determined from wiper switch signal.
INT VOLUME	[1 - 7]	Displays intermittent operation knob setting (1 - 7), determined from wiper switch signal.
RR WIPER ON[Note]	"OFF"	—
RR WIPER INT[Note]	"OFF"	—
FR WASHER SW	"ON/OFF"	Displays "Front Washer Switch (ON)/Other (OFF)" status, determined from wiper switch signal.
RR WASHER SW[Note]	"OFF"	—
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.

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

Wiring Diagram—COMBSW—

AKS003S7



TKWT0588E

Combination Switch Inspection According to Self-Diagnostic Results

AKS003SA

1. CHECK SELF-DIAGNOSTIC RESULTS

CAUTION:

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

1. Connect to CONSULT–II, and select “BCM” on “SELECT SYSTEM” screen.
2. Select “BCM control unit ” on “SELECT WORK ITEM”screen, and select “SELF-DIAG RESULTS”.
3. Check display content in self-diagnostic results.

CONSULT-II display code	Self-diagnostic result content	Malfunctioning switch system	Detection conditions	Possible causes
B2049	OPEN DETECT 1	In the case you are not able to turn on the switch by pattern 1 or 2. Pattern 1 ● FRONT WIPER HI ● Intermittent control 1 ● Intermittent control 2 Pattern 2 ● FR WASHER ● FRONT WIPER LOW ● TURN LH ● TURN RH	BCM terminal No. 48 (Input 1) does not change. (Open circuit in diagnosis 1 system line or open malfunction in output 1 transistor.)	● Harness between BCM and combination switch ● Wiper switch ● BCM
B2050	OPEN DETECT 2	In the case you are not able to turn on the switch by pattern 1 or 2. Pattern 1 ● FR WASHER ● Intermittent control 3 Pattern 2 ● FRONT WIPER HI ● FRONT WIPER INT ● PASSING ● HEAD LAMP 1	BCM terminal No. 49 (Input 2) does not change. (Open circuit in diagnosis 2 system line or open malfunction in output 2 transistor.)	● Harness between BCM and combination switch ● Wiper switch ● BCM
B2051	OPEN DETECT 3	In the case you are not able to turn on the switch by pattern 1 or 2. Pattern 1 ● FRONT WIPER LOW ● FRONT WIPER INT ● AUTO LIGHT Pattern 2 ● Intermittent control 1 ● HEAD LAMP 2 ● HI BEAM	BCM terminal No. 50 (Input 3) does not change. (Open circuit in diagnosis 3 system line or open malfunction in output 3 transistor.)	● Harness between BCM and combination switch ● Wiper switch (Front wiper Lo, INT) ● BCM

CONSULT-II display code	Self-diagnostic result content	Malfunctioning switch system	Detection conditions	Possible causes
B2052	OPEN DETECT 4	In the case you are not able to turn on the switch by pattern 1 or 2. Pattern 1 ● TURN LH ● PASSING ● HEAD LAMP 2 ● FRONT FOG Pattern 2 ● Intermittent control 3 ● AUTO LIGHT ● Lighting switch 1st position	BCM terminal No. 51 (Input 4) does not change. (Open circuit in diagnosis 4 system line or open malfunction in output 4 transistor.)	● Harness between BCM and combination switch ● Lighting switch ● BCM
B2053	OPEN DETECT 5	In the case you are not able to turn on the switch by pattern 1 or 2. Pattern 1 ● TURN RH ● HEAD LAMP 1 ● HI BEAM ● TAIL LAMP Pattern 2 ● Intermittent control 2 ● RR WIPER	BCM terminal No. 52 (Input 5) does not change. (Open circuit in diagnosis 5 system line or open malfunction in output 5 transistor.)	● Harness between BCM and combination switch ● Lighting switch ● BCM
B2054	HEADLAMP 1 SW NG	HEAD LAMP 1 malfunction	Headlamp 1 switch OFF Headlamp 2 switch ON	Lighting switch
B2055	HEADLAMP 2 SW NG	HEAD LAMP 2 malfunction	Headlamp 1 switch ON Headlamp 2 switch OFF	Lighting switch

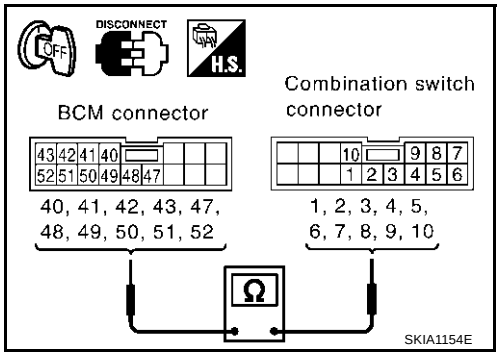
Display content

No malfunction>>Inspection End
Malfunction in diagnosis system>>GO TO 2.
Malfunction in headlamp switch system>>Replace Lighting switch.

2. CHECK HARNESS

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

Self-diagnostic result content	Terminals				Continuity
	BCM (+)		Combination switch (–)		
	Connector	Terminal (wire color)	Connector	Terminal (wire color)	
OPEN DETECT 1	M2	Input 1 — 48 (W/R)	M29	1 (W/R)	Yes
		Output 1 — 47 (Y)		6 (Y)	
OPEN DETECT 2		Input 2 — 49 (W/G)		2 (W/G)	
		Output 2 — 40 (Y/R)		7 (Y/R)	
OPEN DETECT 3		Input 3 — 50 (W/L)		3 (W/L)	
		Output 3 — 41 (PU)		10 (PU)	
OPEN DETECT 4		Input 4 — 51 (G)		4 (G)	
		Output 4 — 42 (L)		9 (L)	
OPEN DETECT 5		Input 5 — 52 (G/R)		5 (G/R)	
		Output 5 — 43 (GY)		8 (GY)	



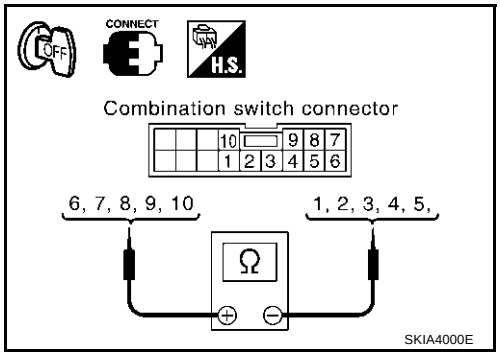
OK or NG

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

3. INSPECTION 1: COMBINATION SWITCH

1. Connect combination switch connector.
2. Check continuity for combination switch harness connector between input and output terminals of applicable malfunctioning system.

Self-diagnostic result content	Combination switch			Continuity
	Connector	Input (-)	Output (+)	
		Terminal (Wire color)	Terminal (Wire color)	
OPEN DETECT 1	M29	1 (W/R)	6 (Y)	Yes
OPEN DETECT 2		2 (W/G)	7 (Y/R)	
OPEN DETECT 3		3 (W/L)	10 (PU)	
OPEN DETECT 4		4 (G)	9 (L)	
OPEN DETECT 5		5 (G/R)	8 (GY)	



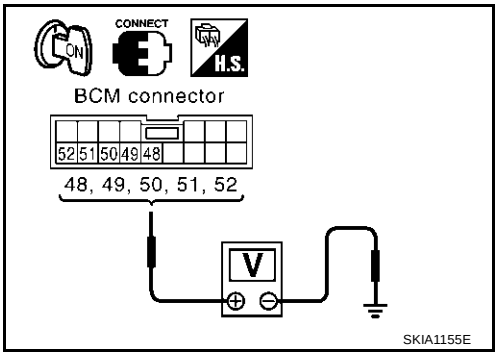
OK or NG

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

4. CHECK OF BCM INPUT TERMINAL VOLTAGE

Connect BCM connector, and check BCM input terminal voltage of suspect system.

Self-diagnostic result content	Terminals			Voltage
	BCM			
	Connector	Terminal (Wire color)		
OPEN DETECT 1	M2	Input 1	48 (W/R)	4.5V or more
OPEN DETECT 2		Input 2	49 (W/G)	
OPEN DETECT 3		Input 3	50 (W/L)	
OPEN DETECT 4		Input 4	51 (G)	
OPEN DETECT 5		Input 5	52 (G/R)	



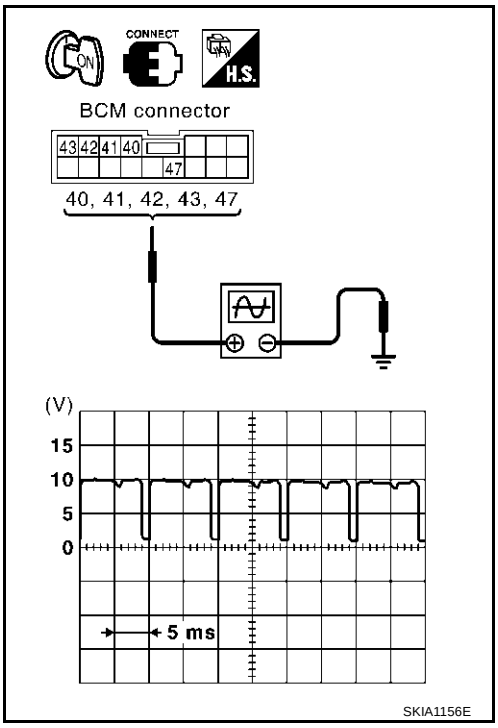
OK or NG

OK >> GO TO 4.
NG >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .

5. CHECK BCM OUTPUT TERMINAL

Connect combination switch connector, and check BCM output terminal voltage waveform of applicable malfunctioning system.

Self-diagnostic result content	Terminals		
	BCM		
	Connector	Terminal (Wire color)	
OPEN DETECT 1	M2	Output 1	47 (Y)
OPEN DETECT 2		Output 2	40 (Y/R)
OPEN DETECT 3		Output 3	41 (PU)
OPEN DETECT 4		Output 4	42 (L)
OPEN DETECT 5		Output 5	43 (GY)



OK or NG

OK >> Combination switch malfunction, go to 5.
NG >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM"

6. INSPECTION 2: COMBINATION SWITCH

Following the table below, check switches by procedure of appropriate malfunctioning system.

Self-diagnostic result content	Procedure						
	1	2		3	4	5	6	7
OPEN DETECT 1	Wiper switch replacement	Confirm self-diagnostic results again.	OK	Inspection End	—			
			NG	Confirm symptom again.				
OPEN DETECT 2	Wiper switch replacement	Confirm self-diagnostic results again.	OK	Inspection End	—			
			NG	Confirm symptom again.				

Self-diagnostic result content	Procedure									
	1	2		3	4		5	6		7
OPEN DETECT 3	Wiper switch replacement	Confirm self-diagnostic results again.	OK	Inspection End	Confirm self-diagnostic results again.	OK	Inspection End	Confirm self-diagnostic results again.	OK	Inspection End
			NG	Lighting switch replacement		NG	Switch base replacement		NG	Confirm symptom again.
OPEN DETECT 4	Lighting switch replacement	Confirm self-diagnostic results again.	OK	Inspection End	Confirm self-diagnostic results again.	OK	Inspection End	Confirm self-diagnostic results again.	OK	Inspection End
			NG	Wiper switch replacement		NG	Switch base replacement		NG	Confirm symptom again.
OPEN DETECT 5	Lighting switch replacement	Confirm self-diagnostic results again.	OK	Inspection End	Confirm self-diagnostic results again.	OK	Inspection End	Confirm self-diagnostic results again.	OK	Inspection End
			NG	Wiper switch replacement		NG	Switch base replacement		NG	Confirm symptom again.

>> Inspection End

Malfunctioning Operation of Lamps and Wipers

AKS003SB

1. CHECK SYMPTOM

Confirm symptom, and confirm malfunctioning system No. from the table below.

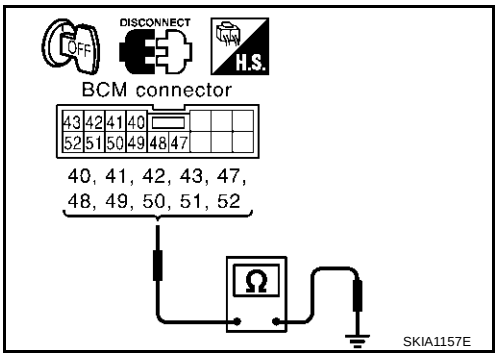
Malfunctioning system	Symptom	Possible causes
1	When the ignition switch is ON position ● LH Turn signal lamp and RH Turn signal lamp on ● Front wiper on (LO speed)	● Short between the following harness and ground – Between BCM INPUT 1 terminal and combination switch – Between combination switch and BCM OUTPUT 1 ● BCM ● Combination switch
2	When the ignition switch is ON position ● Headlamp on (HI and LO) ● Front wiper on (HI speed) When the ignition switch is OFF position ● Headlamp on (HI and LO)	● Short between the following harness and ground – Between BCM INPUT 2 terminal and combination switch – Between combination switch and BCM OUTPUT 2 ● BCM ● Combination switch
3	When the ignition switch is ON position ● Headlamp on (HI and LO) When the ignition switch is OFF position ● Headlamp on (HI and LO)	● Short between the following harness and ground – Between BCM INPUT 3 terminal and combination switch – Between combination switch and BCM OUTPUT 3 ● BCM ● Combination switch
4	When the ignition switch is ON position ● Parking lamp and tail lamp on When the ignition switch is OFF position ● Parking lamp and tail lamp on	● Short between the following harness and ground – Between BCM INPUT 4 terminal and combination switch – Between combination switch and BCM OUTPUT 4 ● BCM ● Combination switch
5	When the ignition switch is ON position ● Front fog lamp on When the ignition switch is OFF position ● Front fog lamp on	● Short between the following harness and ground – Between BCM INPUT 5 terminal and combination switch – Between combination switch and BCM OUTPUT 5 ● BCM ● Combination switch

>> GO TO 2.

2. CHECK HARNESS

1. Disconnect BCM connector and combination switch connector.
2. Check continuity between BCM harness connector of malfunctioning system and ground.

Malfunctioning system	Terminals			Continuity
	BCM (+)		(–)	
	Connector	Terminal (Wire color)		
1	M2	Input 1 — 48 (W/R)	Ground	No
		Output 1 — 47 (Y)		
2		Input 2 — 49 (W/G)		
		Output 2 — 40 (Y/R)		
3		Input 3 — 50 (W/L)		
		Output 3 — 41 (PU)		
4		Input 4 — 51 (G)		
		Output 4 — 42 (L)		
5		Input 5 — 52 (G/R)		
		Output 5 — 43 (GY)		



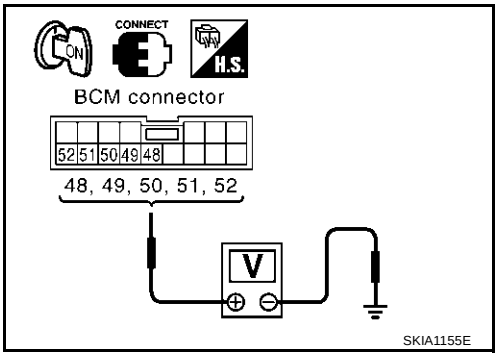
OK or NG

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

3. CHECK BCM INPUT TERMINAL VOLTAGE

Connect BCM connector. Check voltage between BCM input terminal of applicable malfunctioning system and ground.

Malfunctioning system	Terminals			Voltage
	BCM (+)		(–)	
	Connector	Terminal (Wire color)		
1	M2	48 (W/R)	Ground	4.5V or more
2		49 (W/G)		
3		50 (W/L)		
4		51 (G)		
5		52 (G/R)		



OK or NG

OK >> Combination switch malfunction, go to 4.
NG >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .

4. CHECK COMBINATION SWITCH

Following the table below, check combination switch.

Procedure													
1	2		3	4		5	6		7
Lighting switch replacement	Confirm self-diagnostic results again.	OK	Inspection End	Confirm self-diagnostic results again.	OK	Inspection End	Confirm self-diagnostic results again.	OK	Inspection End
		NG	Wiper switch replacement		NG	Replacement of switch base		NG	Confirm symptom again.

>> INSPECTION END

Removal and Installation

AKS003AJ

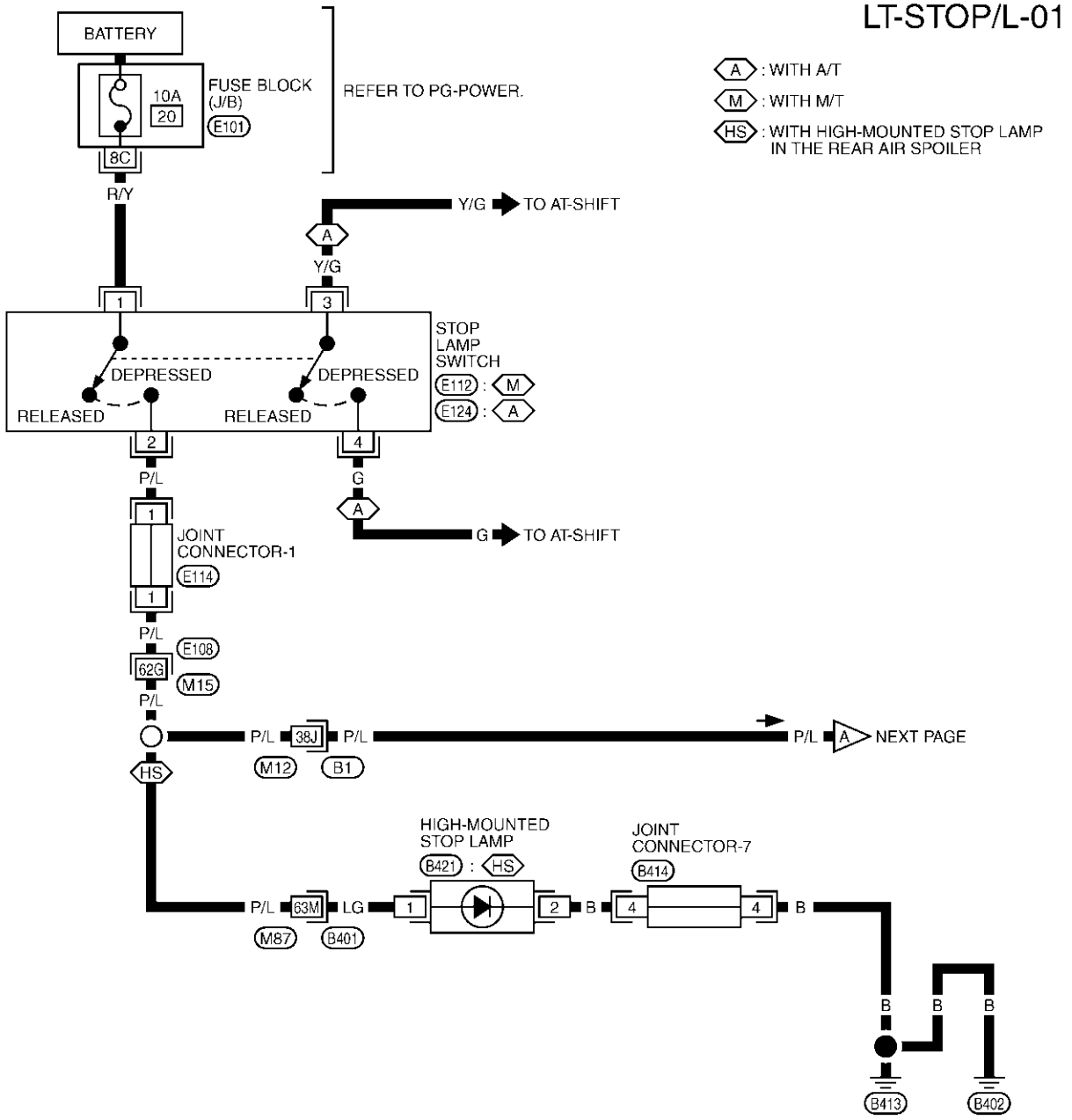
For details, refer to LT-120, "Removal and Installation" .

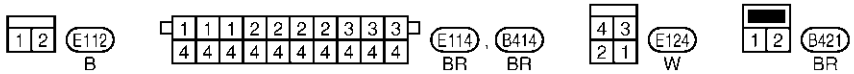
STOP LAMP

PFP:26550

Wiring Diagram — STOP/L —

AKS003AL

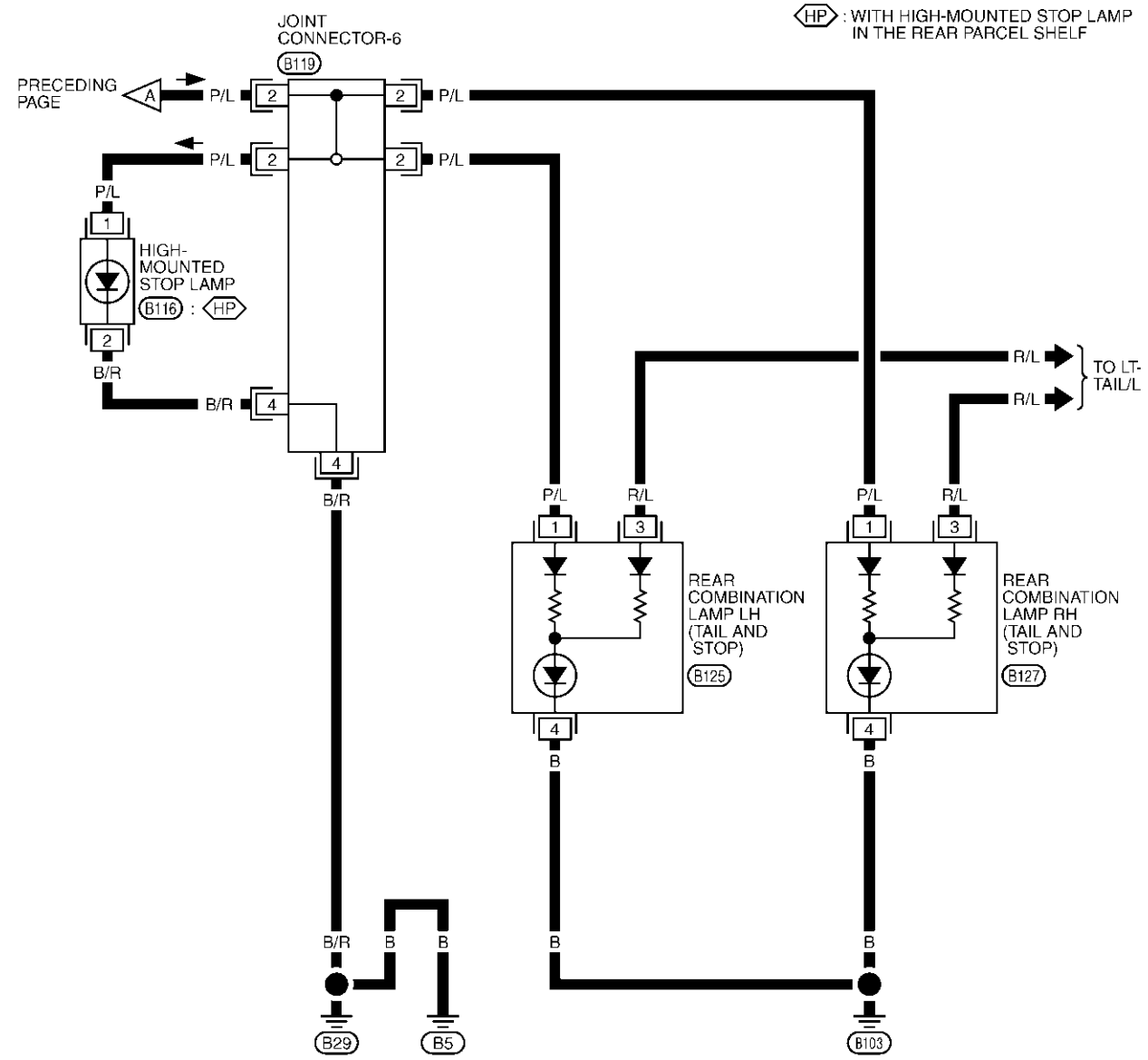


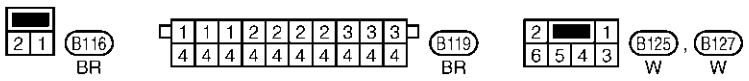


REFER TO THE FOLLOWING.
E108 , B1 , B401 -SUPER MULTIPLE JUNCTION (SMJ)
E101 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT0611E

LT-STOP/L-02





TKWT0612E

Bulb Replacement of High-Mounted Stop Lamp

AKS005PO

WITH REAR SPOILER

1. Remove high-mounted stop lamp. Refer to LT-137, "WITH REAR SPOILER" .
2. Replace together with high-mounted stop lamp.

High-mounted stop lamp : LED

WITHOUT REAR SPOILER

1. Remove high-mounted stop lamp. Refer to LT-137, "WITHOUT REAR SPOILER" .
2. Replace together with high-mounted stop lamp.

High-mounted stop lamp : LED

Bulb Replacement of Rear Combination Lamp (Stop Lamp)

AKS003AN

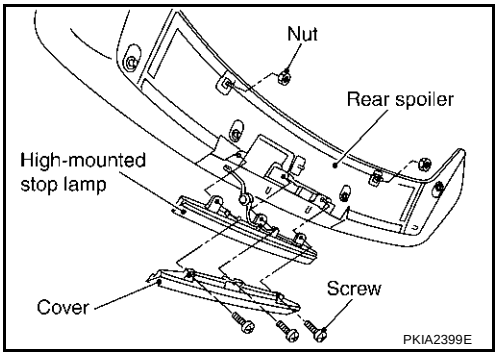
Refer to LT-161, "Bulb Replacement" in “REAR COMBINATION LAMP”.

Removal and Installation of High-Mounted Stop Lamp

AKS003AO

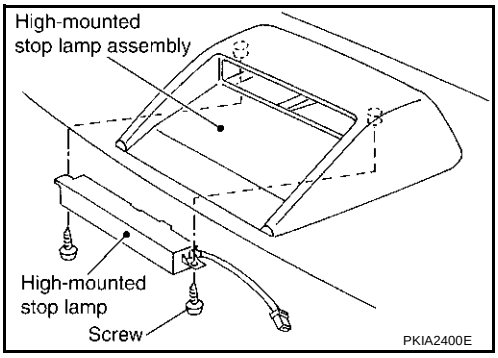
WITH REAR SPOILER

1. Remove rear spoiler. Refer to EI-28, "REAR SPOILER" in “EI” section.
2. Remove screws and remove high-mounted stop lamp from rear spoiler.
3. Disconnect high-mounted stop lamp connector.



WITHOUT REAR SPOILER

1. Remove rear parcel shelf finisher. Refer to EI-34, "REAR PARCEL SHELF FINISHER" in “EI” section.
2. Remove screws and remove high-mounted stop lamp from rear parcel shelf finisher.
3. Disconnect high-mounted stop lamp connector.



Removal and Installation of Rear Combination Lamp (Stop Lamp)

AKS003AP

Refer to LT-161, "Removal and Installation" in “REAR COMBINATION LAMP”.

STEP LAMP

PFP:26420

Bulb Replacement

AKS003AQ

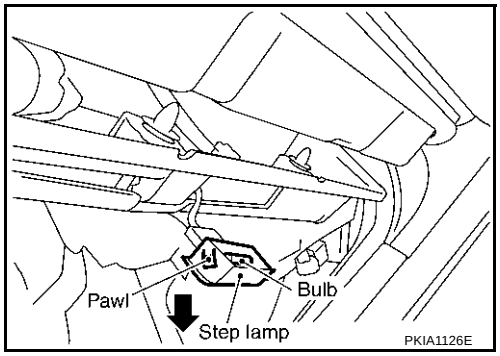
1. Remove step lamp. Refer to LT-138, "Removal and Installation" .
2. Remove bulb.

Step lamp : 12V - 5W

Removal and Installation

AKS003AR

1. Undo clips on lower part of front door finisher and lift finisher up.
2. Disconnect step lamp connector.
3. Press pawl on reverse side and remove the step lamp.



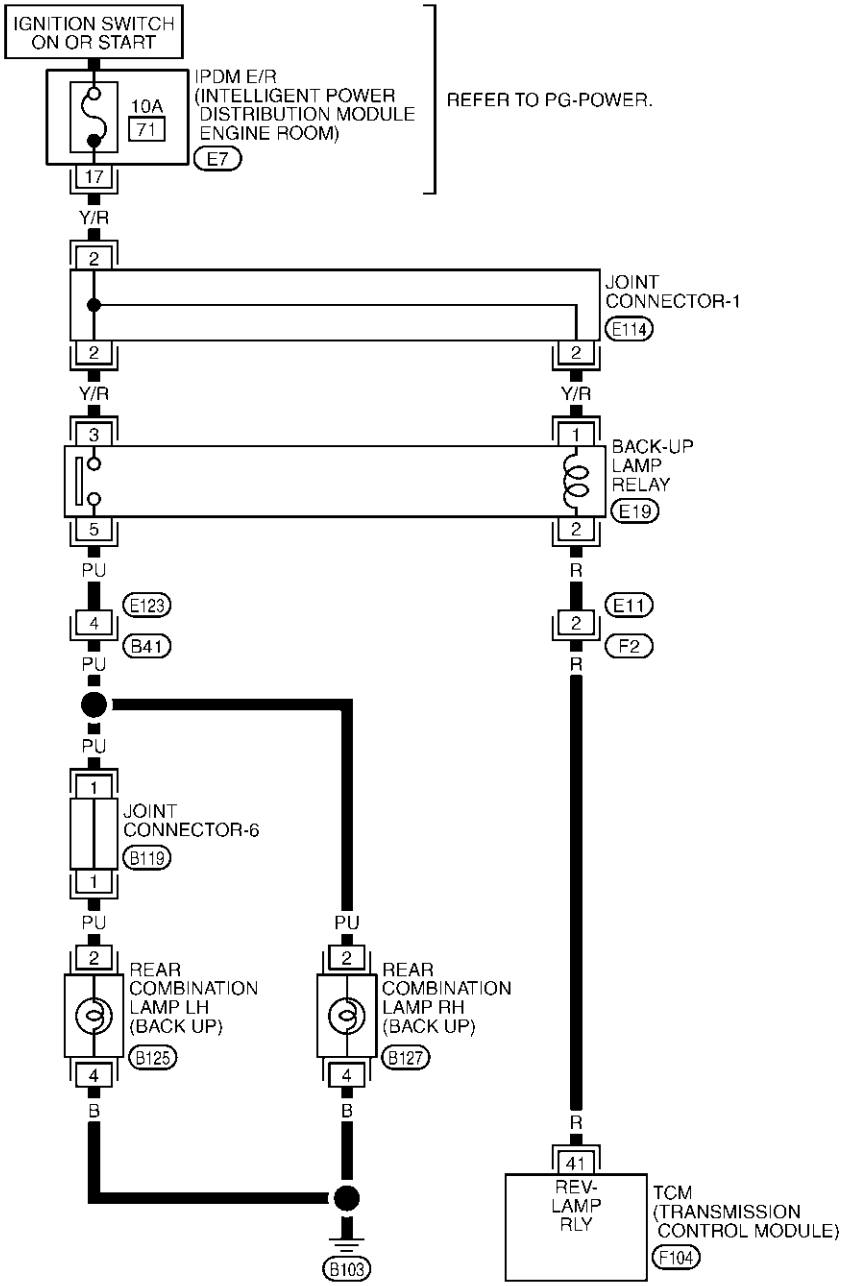
BACK-UP LAMP

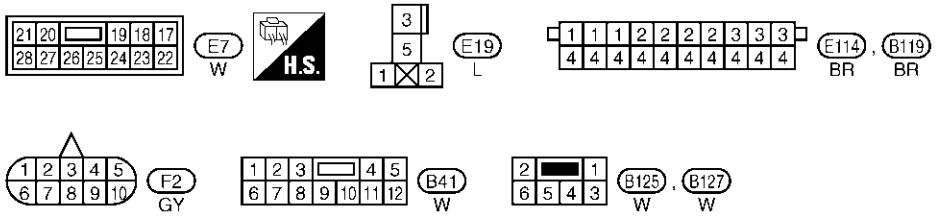
PFP:26550

Wiring Diagram — BACK/L —

AKS003AS

LT-BACK/L-01

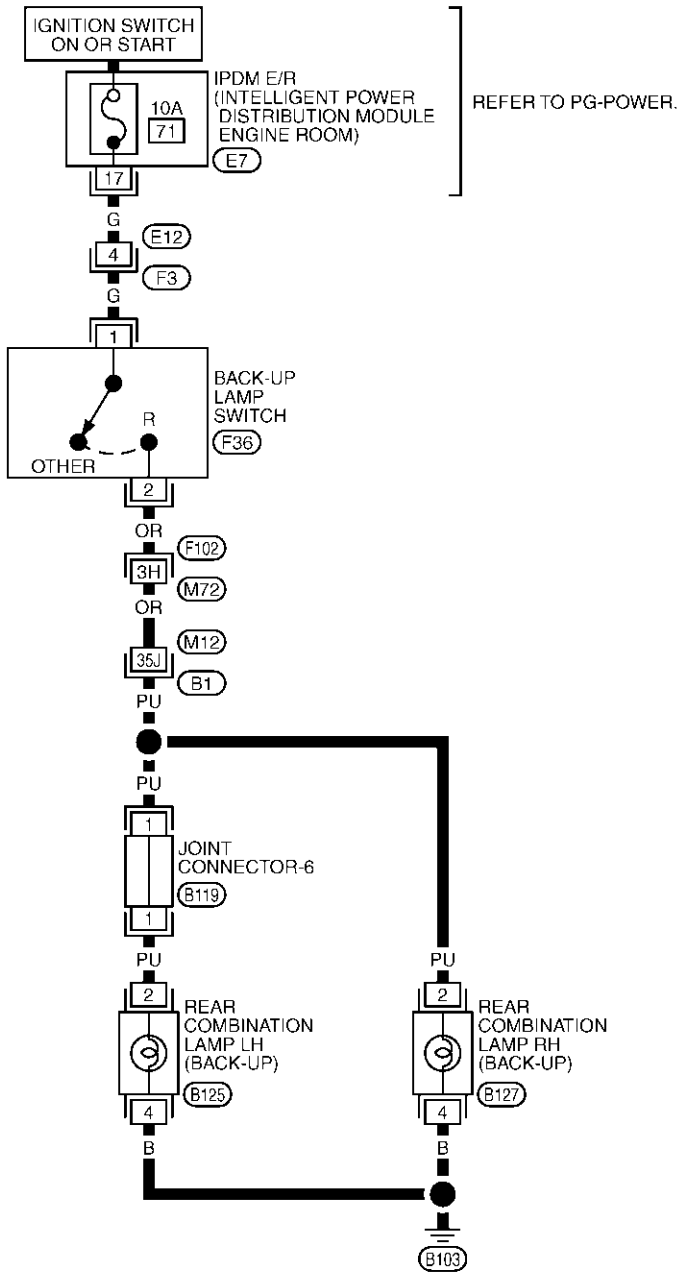


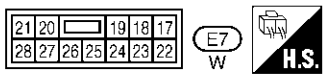


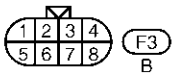
REFER TO THE FOLLOWING.
F104 -ELECTRICAL UNITS

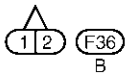
TKWT0613E

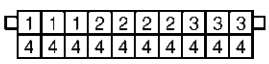
LT-BACK/L-02

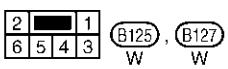












REFER TO THE FOLLOWING.
F102 , B1 -SUPER MULTIPLE JUNCTION (SMJ)

TKWT0614E

Bulb Replacement

AKS003AT

Refer to LT-161, "Bulb Replacement" in “REAR COMBINATION LAMP”.

Removal and Installation

AKS003AU

Refer to LT-161, "Removal and Installation" in “REAR COMBINATION LAMP”.

PARKING, LICENSE PLATE AND TAIL LAMPS

PFP:26550

System Description

AKS003AV

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

- to tail lamp relay, located in the IPDM E/R (intelligent power distribution module engine room)
- through 10A fuse [No. 75, located in the IPDM E/R (intelligent power distribution module engine room)].
- to CPU (central processing unit) in the IPDM E/R (intelligent power distribution module engine room)
- through 15A fuse [No. 73 located in the IPDM E/R (intelligent power distribution module engine room)].

Power is also supplied at all times

- to BCM (body control module) terminal 7
- through 50A fusible link (letter F, located in the fuse and fusible link box).

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

- to BCM (body control module) terminal 35
- through 10A fuse [No. 1, located in the fuse block (J/B)].
- to CPU (central processing unit) in the IPDM E/R (intelligent power distribution module engine room)
- through 10A fuse [No. 80 located in the IPDM E/R (intelligent power distribution module engine room)]

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

- to BCM (body control module) terminal 36
- through 10A fuse [No. 6, located in the fuse block (J/B)].

Ground is supplied

- to BCM (body control module) terminal 8
- through grounds E17 and E43.
- to IPDM E/R (intelligent power distribution module engine room) terminal 14 and 45
- through grounds E17 and E43.

OPERATION BY LIGHTING SWITCH

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

- through terminal 37 of the IPDM E/R
- to front combination lamp LH terminal 7,
- to front combination lamp RH terminal 7,
- to front side marker lamp LH terminal 2,
- to front side marker lamp RH terminal 2,
- to rear combination lamp LH terminal 3,
- to rear combination lamp RH terminal 3, and
- to license plate lamp terminal 1,

Ground is supplied at all times

- to front combination lamp LH terminal 8,
- through grounds E17 and E43, and
- to front combination lamp RH terminal 8,
- through grounds E17 and E43, and
- to front side marker lamp LH terminal 1,
- through grounds E17 and E43, and

- to front side marker lamp RH terminal 1,
- through grounds E17 and E43,and
- to rear combination lamp LH terminal 4
- through ground B103, and
- to rear combination lamp RH terminal 4
- through ground B103, and
- to license plate lamp terminal 2,
- through grounds B5 and B29.

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

COMBINATION SWITCH READING FUNCTION

Refer to LT-122, "Combination Switch Reading Function" .

EXTERIOR LAMP BATTERY SAVER CONTROL

When the combination switch (lighting switch) is in the 1ST (or 2ND) position, and the ignition switch is turned from ON or ACC to OFF, the battery saver control feature is activated.
Under this condition, the parking, license plate, side marker and tail lamps remain illuminated for 5 minutes, then the 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.

AN Communication System Description

AKS003AW

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

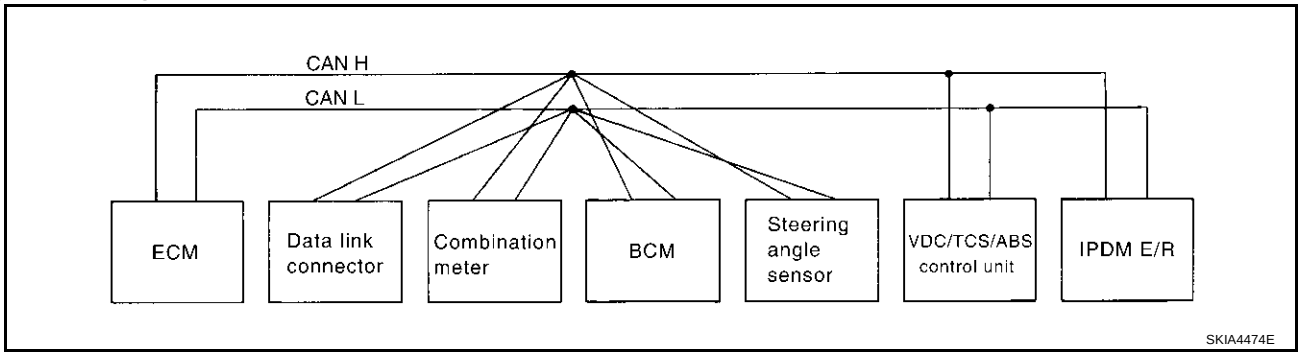
AKS005QG

Body type	Coupe	
Axle	2WD	
Engine	VQ35DE	
Transmission	M/T	A/T
Brake control	VDC	
CAN communication unit		
ECM	×	×
TCM		×
Data link connector	×	×
Combination meter	×	×
BCM	×	×
Steering angle sensor	×	×
VDC/TCS/ABS control unit	×	×
IPDM E/R	×	×
CAN communication type	LT-144	LT-145

×: Applicable

TYPE 1

System diagram



Input/output signal chart

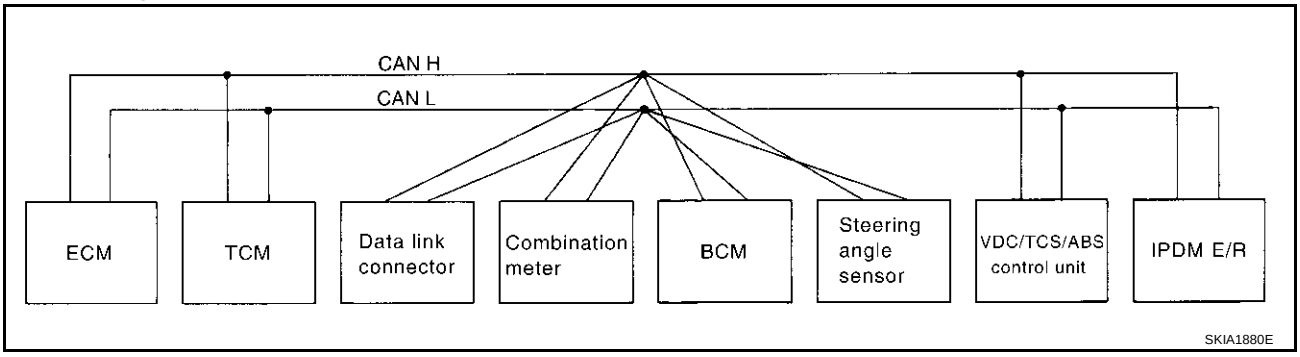
T: Transmit R: Receive

Signals	ECM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Engine speed signal	T	R			R	
Engine coolant temperature signal	T	R				
Accelerator pedal position signal	T				R	
Fuel consumption monitor signal	T	R				
Air conditioner switch signal	R		T			
A/C compressor request signal	T					R
A/C compressor feedback signal	T	R				
Blower fan motor switch signal	R		T			
Cooling fan motor operation signal	T					R
Position lights request signal		R	T			R
Low beam request signal			T			R
Low beam status signal	R		R			T
High beam request signal		R	T			R
High beam status signal	R		R			T
Front fog lights request signal			T			R
Vehicle speed signal		R			T	
	R	T	R			
Sleep request 1 signal		R	T			
Sleep request 2 signal			T			R
Wake up request 1 signal		R	T			
Wake up request 2 signal		R	T			
Door switch signal (without navigation system)		R	T			R
Door switch signal (with navigation system)		T	R			
Turn indicator signal		R	T			
Seat belt buckle switch signal		T	R			
Oil pressure switch signal		R				T
Buzzer output signal		R	T			
Trunk switch signal		R	T			
Malfunction indicator lamp signal	T	R				
ASCD SET lamp signal	T	R				
ASCD CRUISE lamp signal	T	R				

Signals	ECM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Fuel level sensor signal	R	T				
Front wiper request signal			T			R
Front wiper stop position signal			R			T
Rear window defogger switch signal			T			R
Rear window defogger control signal	R		R			T
Hood switch signal			R			T
Theft warning horn request signal			T			R
Horn chirp signal			T			R
Steering angle sensor signal				T	R	

TYPE 2

System diagram



Input/output signal chart

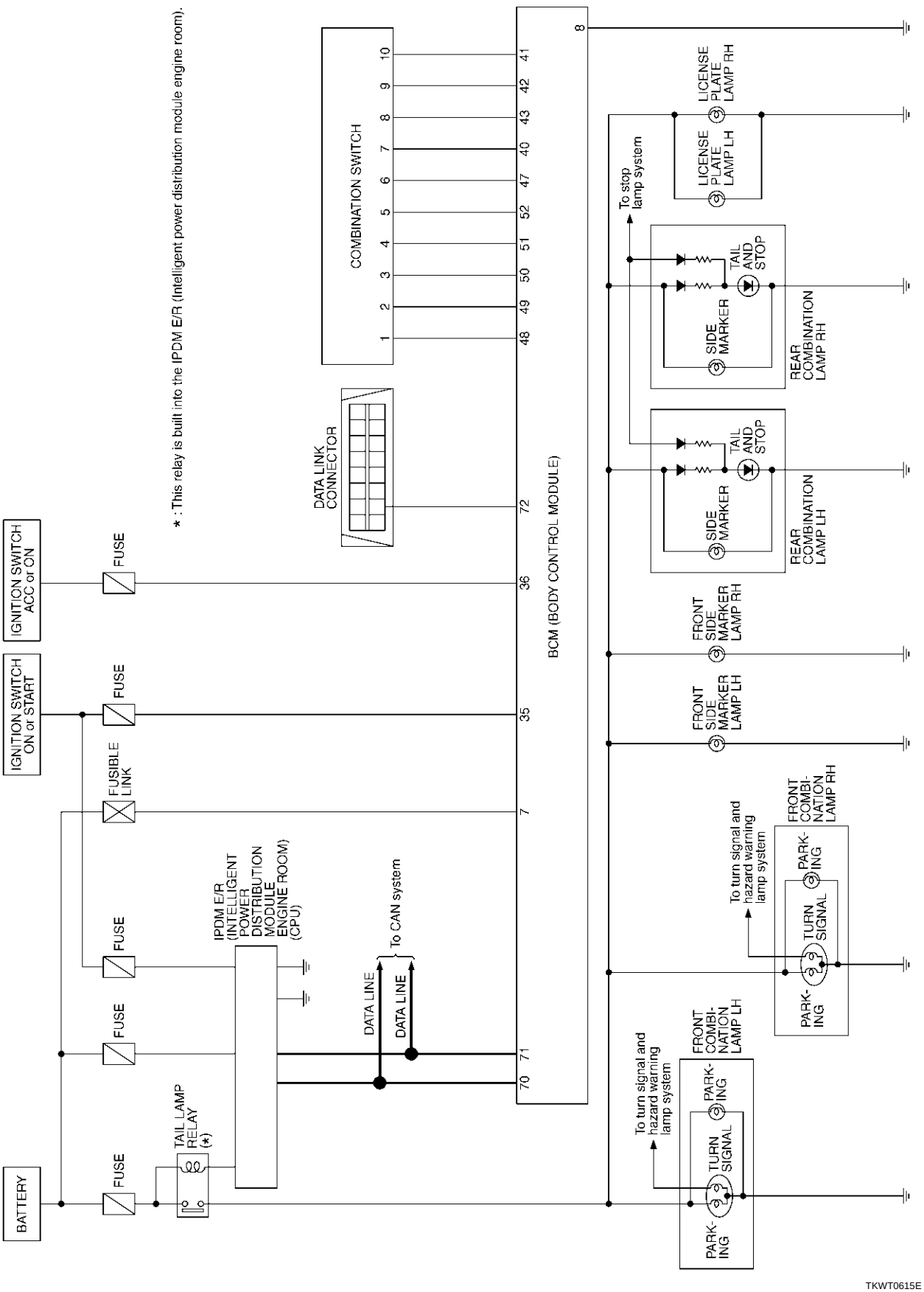
T: Transmit R: Receive

Signals	ECM	TCM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Engine speed signal	T	R	R			R	
Engine coolant temperature signal	T	R	R				
Accelerator pedal position signal	T	R				R	
Closed throttle position signal	T	R					
Wide open throttle position signal	T	R					
Battery voltage signal	T	R					
Stop lamp switch		R	T				
Fuel consumption monitor signal	T		R				
A/T self-diagnosis signal	R	T					
A/T CHECK indicator lamp signal		T	R				
A/T position indicator signal		T	R			R	
ABS operation signal		R				T	
A/T shift schedule change demand signal		R				T	
Air conditioner switch signal	R			T			
A/C compressor request signal	T						R
A/C compressor feedback signal	T		R				
Blower fan motor switch signal	R			T			
Cooling fan motor operation signal	T						R

Signals	ECM	TCM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Position lights request signal			R	T			R
Low beam request signal				T			R
Low beam status signal	R			R			T
High beam request signal			R	T			R
High beam status signal	R			R			T
Front fog lights request signal				T			R
Vehicle speed signal			R			T	
	R	R	T	R			
Sleep request 1 signal			R	T			
Sleep request 2 signal				T			R
Wake up request 1 signal			R	T			
Wake up request 2 signal			R	T			
Door switch signal (without navigation system)			R	T			R
Door switch signal (with navigation system)			T	R			
Turn indicator signal			R	T			
Seat belt buckle switch signal			T	R			
Oil pressure switch signal			R				T
Buzzer output signal			R	T			
Trunk switch signal			R	T			
Malfunction indicator lamp signal	T		R				
ASCD SET lamp signal	T		R				
ASCD CRUISE lamp signal	T		R				
Fuel level sensor signal	R		T				
Output shaft revolution signal	R	T					
Turbine revolution signal	R	T					
Front wiper request signal				T			R
Front wiper stop position signal				R			T
Rear window defogger switch signal				T			R
Rear window defogger control signal	R			R			T
Manual mode signal		R	T				
Not manual mode signal		R	T				
Manual mode shift up signal		R	T				
Manual mode shift down signal		R	T				
Manual mode indicator signal		T	R				
Hood switch signal				R			T
Theft warning horn request signal				T			R
Horn chirp signal				T			R
Steering angle sensor signal					T	R	

Schematic

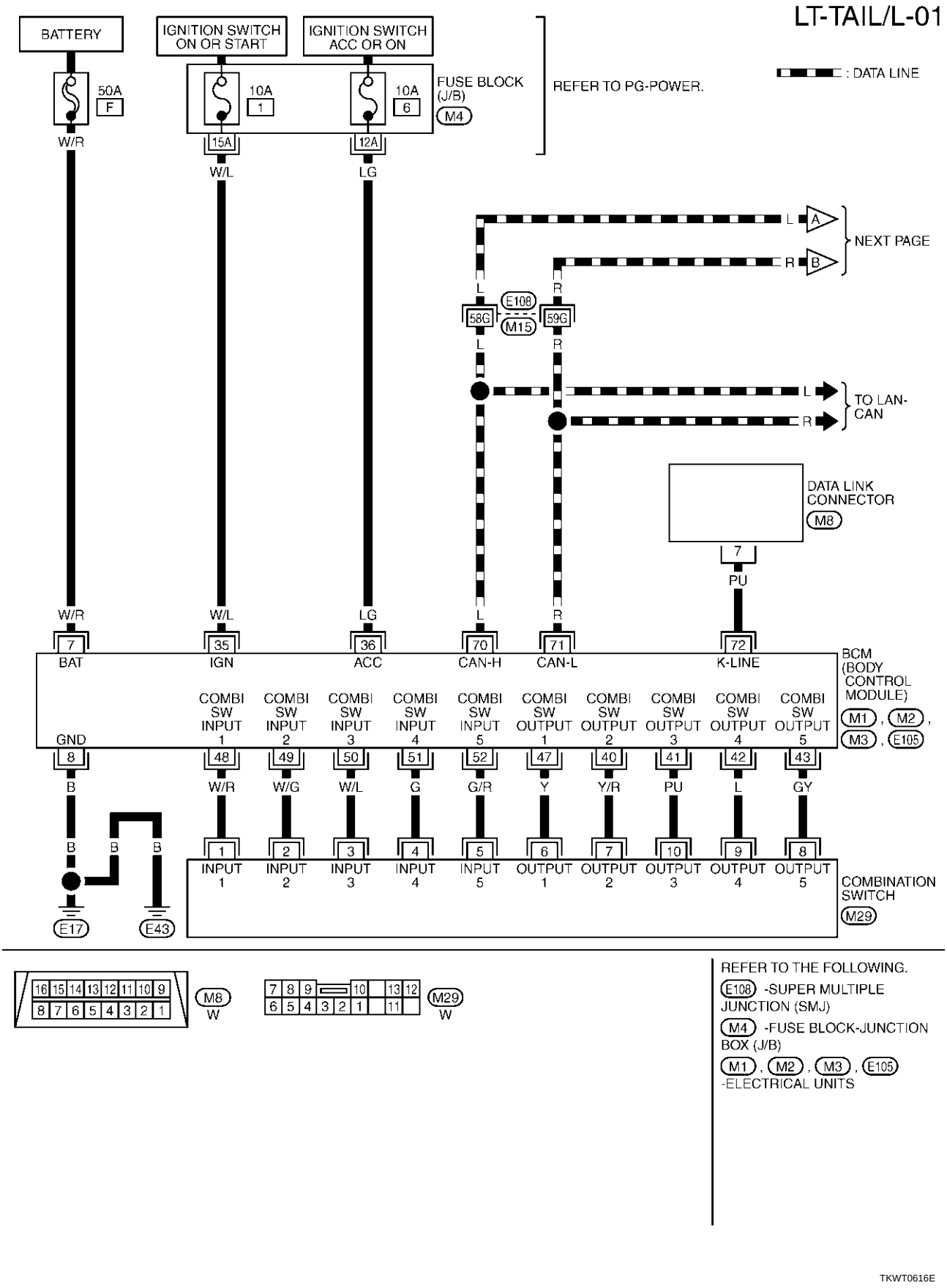
AKS003AY



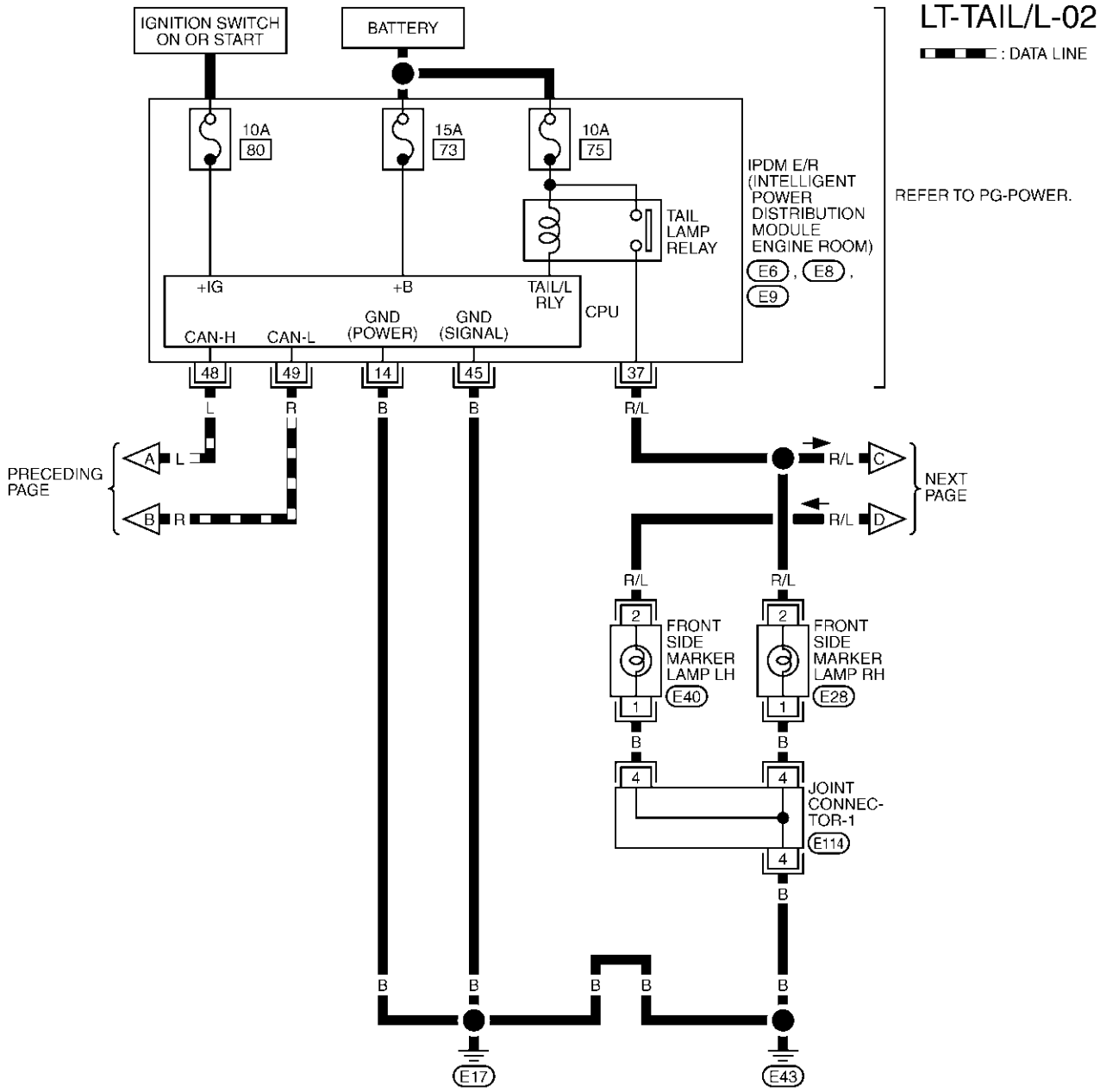
TKWT0615E

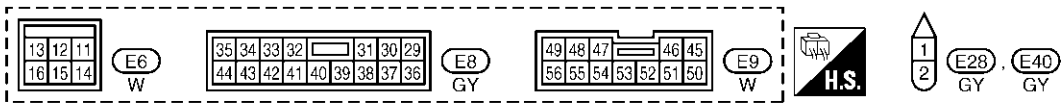
Wiring Diagram — TAIL/L —

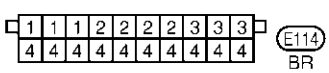
AKS003AZ



TKWT0616E

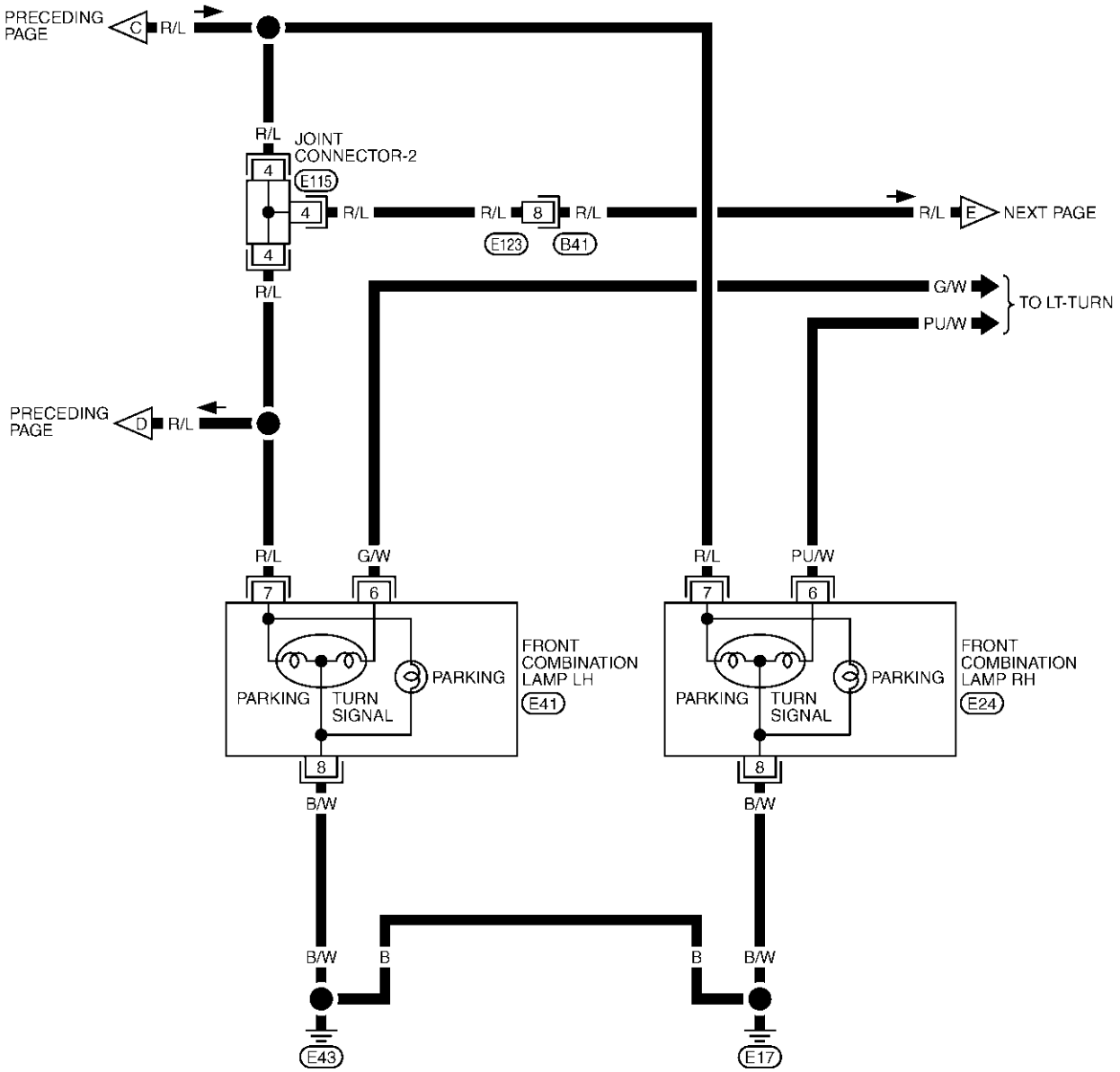

LT-TAIL/L-02
: DATA LINE
IGNITION SWITCH ON OR START
BATTERY
10A 80
15A 73
10A 75
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) E6, E8, E9
REFER TO PG-POWER.
TAIL LAMP RELAY
+IG
+B
TAIL/L RLY
CPU
CAN-H
CAN-L
GND (POWER)
GND (SIGNAL)
48
49
14
45
37
L
R
B
B
R/L
PRECEDING PAGE
A L
B R
R/L C
R/L D
NEXT PAGE
R/L
R/L
2
1
FRONT SIDE MARKER LAMP LH E40
FRONT SIDE MARKER LAMP RH E28
B
B
4
4
JOINT CONNEC-TOR-1 E114
4
B
B
B
B
B
B
E17
E43

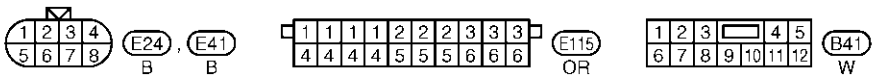

13 12 11
16 15 14
E6
W
35 34 33 32 31 30 29
44 43 42 41 40 39 38 37 36
E8
GY
49 48 47 46 45
56 55 54 53 52 51 50
E9
W
H.S.
1
2
E28, E40
GY GY


1 1 1 2 2 2 2 3 3 3
4 4 4 4 4 4 4 4 4 4
E114
BR

TKWT0617E

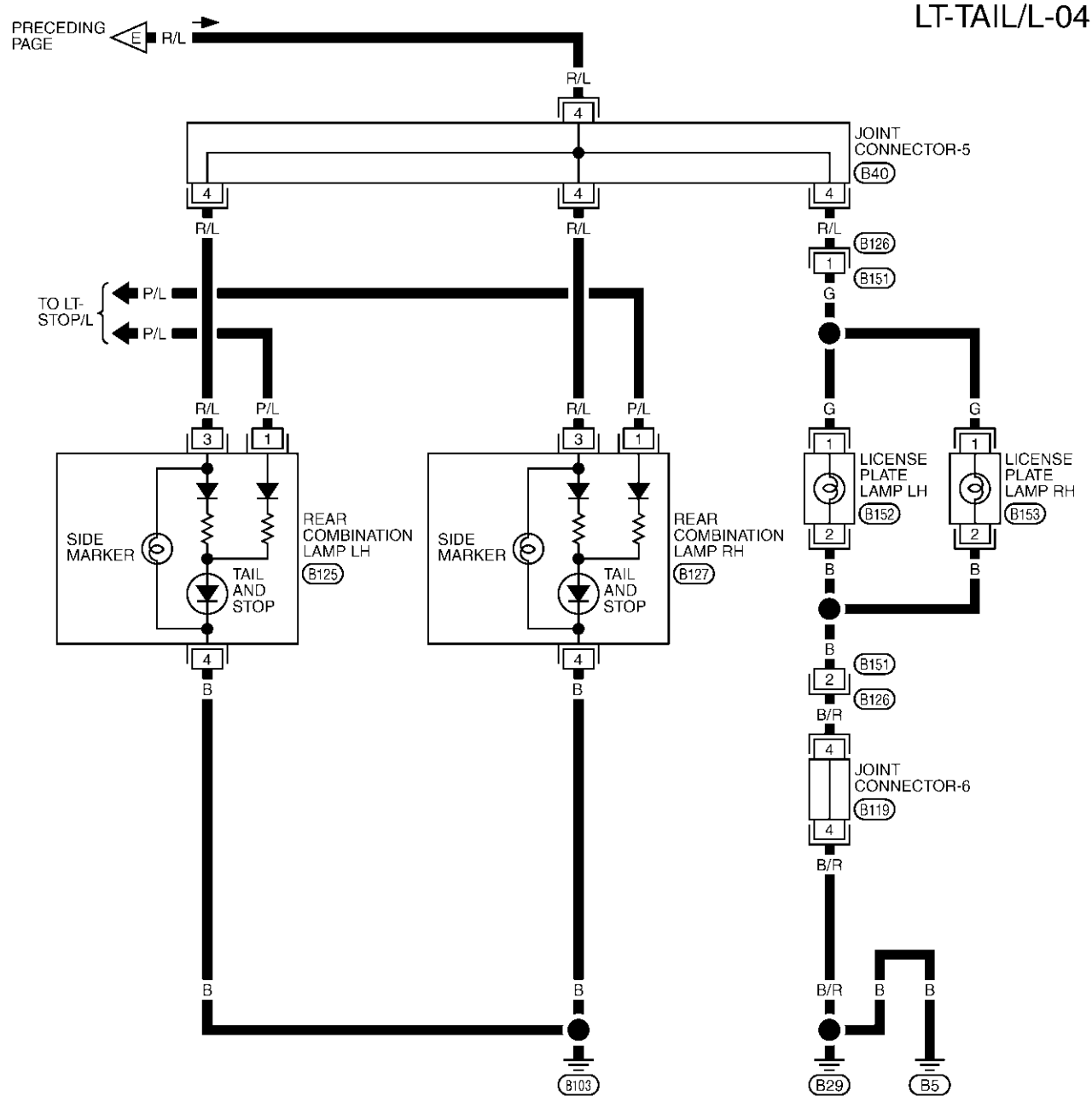
LT-TAIL/L-03

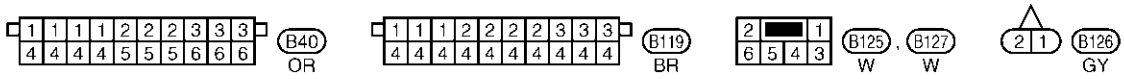


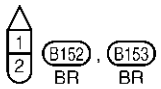


TKWT0618E

LT-TAIL/L-04



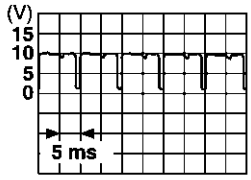




TKWT0619E

Terminals and Reference Value for BCM

AKS003ZK

Terminal No.	Wire color	Item	Measuring condition		Reference value
			Ignition switch	Operation or condition	
7	W/R	Battery power supply	OFF	—	Battery voltage
8	B	Ground	ON	—	Approx.0V
35	W/L	Ignition switch (ON)	ON	—	Battery voltage
36	LG	Ignition switch (ACC)	ACC	—	Battery voltage
40	Y/R	Combination switch output 2	ON	Lighting, turn, wiper OFF	 SKIA1119J
41	PU	Combination switch output 3			
42	L	Combination switch output 4			
43	GY	Combination switch output 5			
47	Y	Combination switch output 1			
48	W/R	Combination switch input 1	ON	Lighting, turn, wiper OFF	4.5V or more
49	W/G	Combination switch input 2			
50	W/L	Combination switch input 3			
51	G	Combination switch input 4			
52	G/R	Combination switch input 5			
70	L	CAN-H	—	—	—
71	R	CAN-L	—	—	—
72	PU	K-LINE	—	—	—

Terminals and Reference Values for IPDM E/R

AKS004CY

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

How to Proceed With Trouble Diagnosis

AKS003B1

1. Confirm the trouble symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-142, "System Description" .
3. Carry out the Preliminary Inspection. Refer to LT-153, "Preliminary Inspection" .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the parking, license plate and tail lamps operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection end.

Preliminary Inspection

AKS003B2

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown fuses.

UNIT	POWER SOURCE	FUSE No.
BCM	Battery	F
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
IPDM E/R	Battery	75

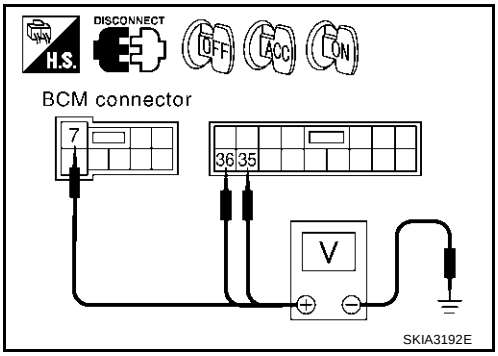
Refer to LT-148, "Wiring Diagram — TAIL/L —" .

OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of problem 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.



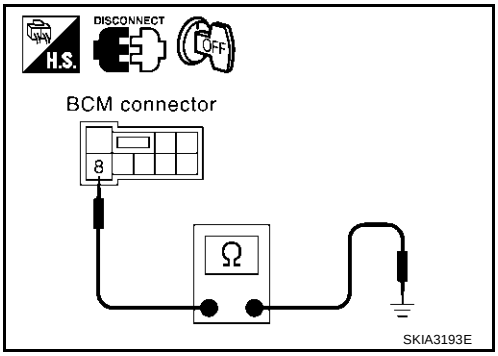
Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
E105	7 (W/R)	Ground	Battery voltage	Battery voltage	Battery voltage
M1	35 (W/L)		0V	0V	Battery voltage
M1	36 (LG)		0V	Battery voltage	Battery voltage

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)		
E105	8 (B)	Ground	Yes

OK or NG

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

CONSULT-II Function

AKS003B3

Refer to LT-19, "CONSULT-II Function" in HEAD LAMP (FOR USA).
Refer to LT-49, "CONSULT-II Function" in HEAD LAMP (FOR CANADA).

Parking, License Plate and Tail Lamps Do Not Illuminate

AKS003B4

1. INSPECTION 1: IPDM E/R AND PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMPS

1. Start auto active test. Refer to PG-22, "Auto Active Test" .
2. Check whether parking, license plate lamp side marker and tail lamp operate.

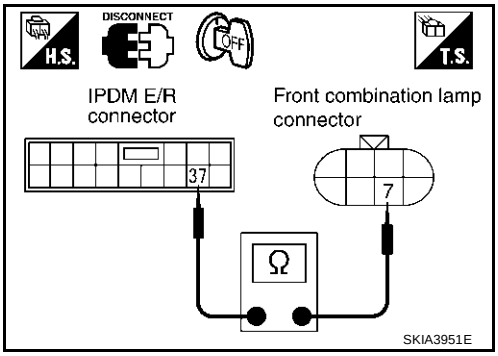
OK or NG

OK >> GO TO 5.
NG >> GO TO 2.

2. INSPECTION 2: IPDM E/R AND PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMP

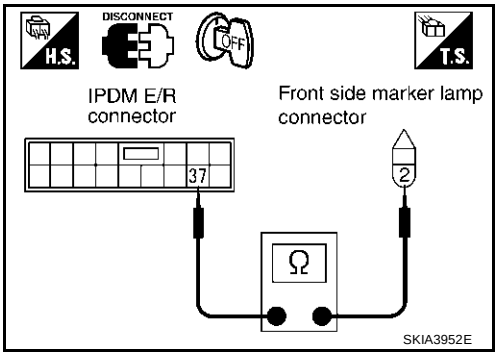
1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector, front combination lamp connector, front side marker lamp connector, license plate lamp connector and rear combination lamp connectors.
3. Check continuity between harness connector of IPDM E/R and harness connector of front combination lamp (parking).

Terminals					Continuity
IPDM E/R		Front combination lamp (Parking)			
Connector	Terminal (Wire color)	Connector		Terminal (Wire color)	
E8	37 (R/L)	RH	E24	7 (R/L)	Yes
		LH	E41		



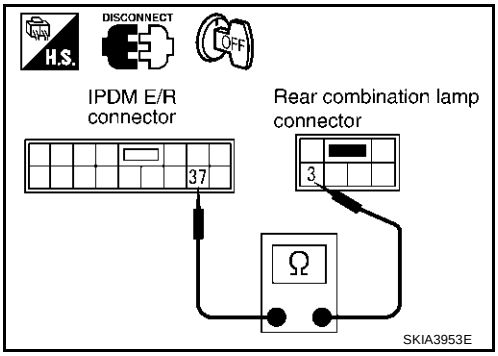
4. Check continuity between harness connector of IPDM E/R and harness connector of front side marker lamp.

Terminals					Continuity
IPDM E/R		Front side marker lamp			
Connector	Terminal (Wire color)	Connector		Terminal (Wire color)	
E8	37 (R/L)	RH	E28	2 (R/L)	Yes
		LH	E40		



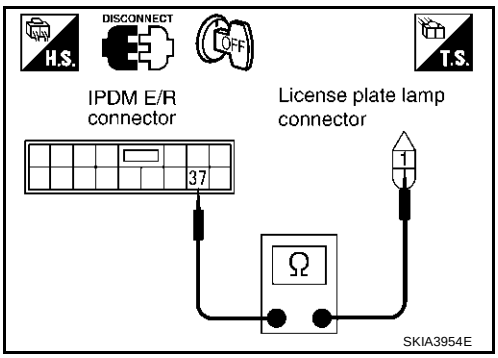
5. Check continuity between harness connector of IPDM E/R and harness connector of rear combination lamp (tail and side marker).

Terminals					Continuity
IPDM E/R		Rear combination lamp (Tail and side marker)			
Connector	Terminal (Wire color)	Connector		Terminal (Wire color)	
E8	37 (R/L)	RH	B127	3 (R/L)	Yes
		LH	B125		



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

Terminals					Continuity
IPDM E/R		License plate lamp			
Connector	Terminal (Wire color)	Connector		Terminal (Wire color)	
E8	37 (R/L)	RH	B153	1 (G)	Yes
		LH	B152		



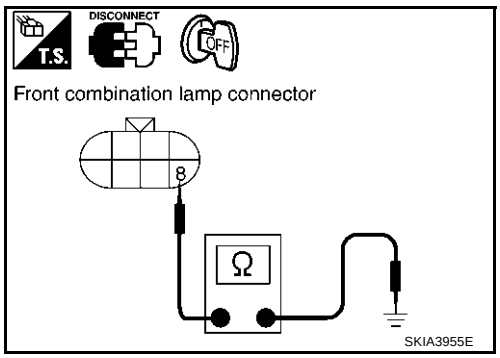
OK or NG

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

3. INSPECTION: PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMP AND GROUND

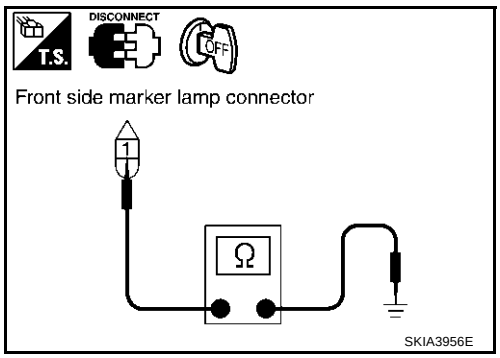
1. Check continuity between harness connector of front combination lamp (parking) and ground.

Terminals				
Front combination lamp (Parking)			Ground	Continuity
Connector		Terminal (Wire color)		
RH	E24	8 (B/W)		Yes
LH	E41			



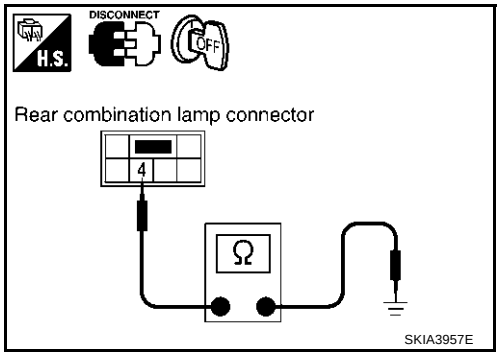
2. Check continuity between harness connector of front side marker lamp ground.

Terminals				
Front side marker lamp			Ground	Continuity
Connector		Terminal (Wire color)		
RH	E28	1 (B)		Yes
LH	E40			



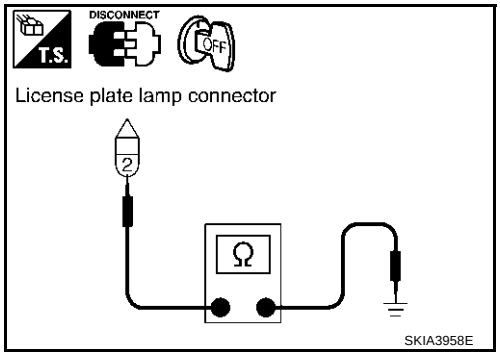
3. Check continuity between harness connector of rear combination lamp (tail and side marker) and ground.

Terminals				
Rear combination lamp (Tail and side marker)			Ground	Continuity
Connector		Terminal (Wire color)		
RH	B127	4 (B)		Yes
LH	B125			



4. Check continuity between harness connector of license plate lamp and ground.

Terminals				
License plate lamp			Ground	Continuity
Connector		Terminal (Wire color)		
RH	B153	2 (B)		Yes
LH	B152			



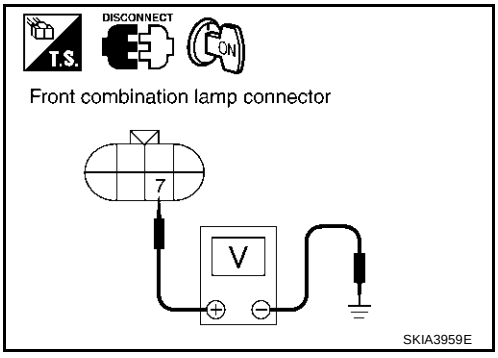
OK or NG

OK >> GO TO4.
NG >> Repair harness or connector.

4. CHECK IPDM E/R

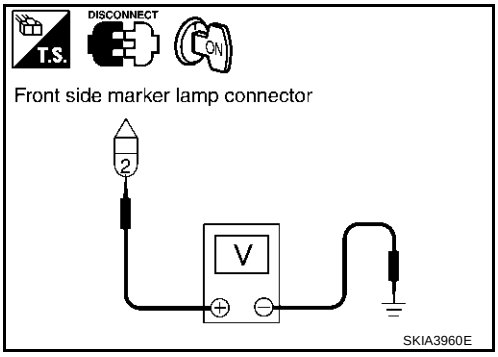
1. Connect IPDM E/R connector.
2. Start auto active test. Refer to PG-22, "Auto Active Test" .
3. When tail lamp relay is operating, check voltage between harness connector of front combination lamp (parking) and ground.

Terminals				
Front combination lamp (Parking)			Ground	Voltage
Connector		Terminal (Wire color)		
RH	E24	7 (R/L)		Battery voltage
LH	E41			



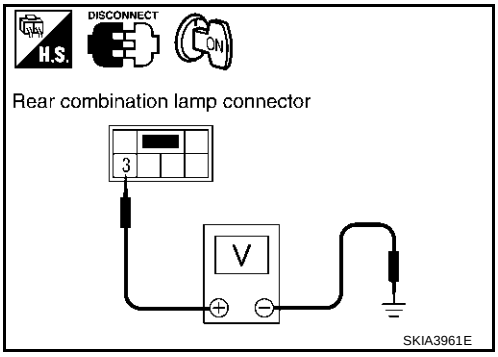
4. When tail lamp relay is operating, check voltage between harness connector of front side marker lamp and ground.

Terminals				
Front side marker lamp			Ground	Voltage
Connector		Terminal (Wire color)		
RH	E28	2 (R/L)		Battery voltage
LH	E40			



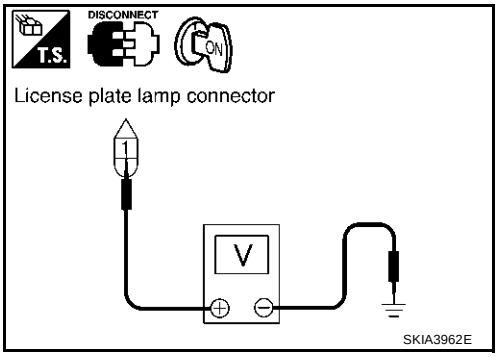
5. When tail lamp relay is operating, check voltage between harness connector of rear combination (tail and side marker) and ground.

Terminals				
Rear combination lamp (Tail and side marker)			Ground	Voltage
Connector		Terminal (Wire color)		
RH	B127	3 (R/L)		Battery voltage
LH	B125			



6. When tail lamp relay is operating, check voltage between harness connector of license plate lamp and ground.

Terminals				
License plate lamp			Ground	Voltage
Connector		Terminal (Wire color)		
RH	B153	1 (G)		Battery voltage
LH	B152			



OK or NG

OK >> Check bulb.
NG >> Replace IPDM E/R.

5. INSPECTION 1: COMBINATION SWITCH AND BCM

Select “BCM” on CONSULT-II. Carry out “BCM C/U” self-diagnosis.

Displayed results of self-diagnosis

No malfunction detected>> GO TO 6.

CAN communications or CAN system>> Inspect the BCM CAN communications system. Refer to BCS-17, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" .

OPEN DETECT 1 - 5>> Combination switch system malfunction. Refer to LT-128, "Combination Switch Inspection According to Self-Diagnostic Results" .

SELF-DIAG RESULTS	
DTC RESULTS	TIME
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	

LKIA0073E

6. INSPECTION 2: COMBINATION SWITCH AND BCM

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

OK or NG

OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .

NG >> Replace lighting switch.

DATA MONITOR	
MONITOR	
IGN ON SW	ON
ACC ON SW	ON
AUTO LIGHT SW	ON
TAIL LAMP SW	OFF
HEAD LAMP SW 1	OFF
HI BEAM SW	OFF
PASSING SW	OFF
FR FOG SW	OFF
DOOR SW-DR	OFF

SKIA4604E

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

AKS003B5

1. CHECK IPDM E/R

1. Turn the ignition switch ON. Place the combination switch (lighting switch) in the ON position. Turn the ignition switch OFF.
2. make sure the 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-22, "Function of Detecting Ignition Relay Malfunction" .

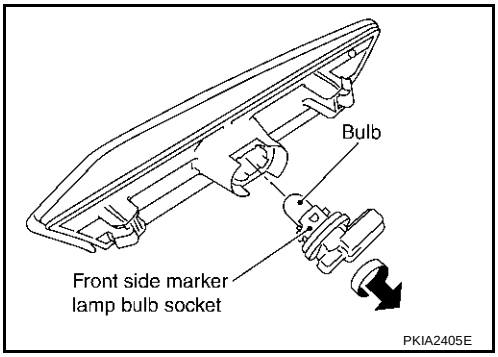
Bulb Replacement

AKS003B6

FRONT SIDE MARKER LAMP

1. Remove front side marker lamp. Refer to LT-159, "FRONT SIDE MARKER LAMP" .
2. Turn bulb socket counterclockwise and unlock it.
3. Remove bulb from it's socket.

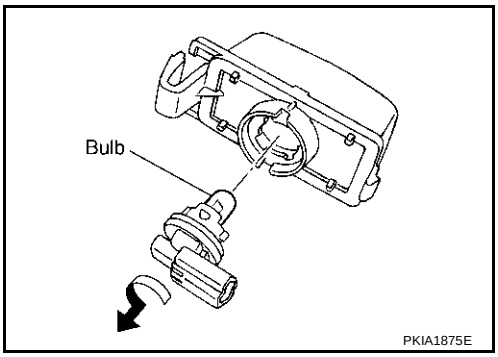
Front side marker lamp : 12V - 3.8W



LICENSE PLATE LAMP

1. Remove license plate lamp. Refer to LT-159, "LICENSE PLATE LAMP" .
2. Turn bulb socket counterclockwise and unlock it.
3. Remove bulb from it's socket.

License plate lamp : 12V - 5W



FRONT TURN SIGNAL (PARKING) LAMP

For bulb replacement, refer to LT-28, "Bulb Replacement" in “HEAD LAMP (FOR USA)”.

TAIL LAMP

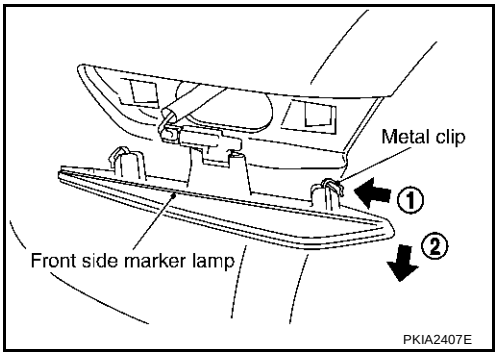
For bulb replacement, refer toLT-161, "Bulb Replacement" in “REAR COMBINATION LAMP”.

Removal and Installation

AKS003B7

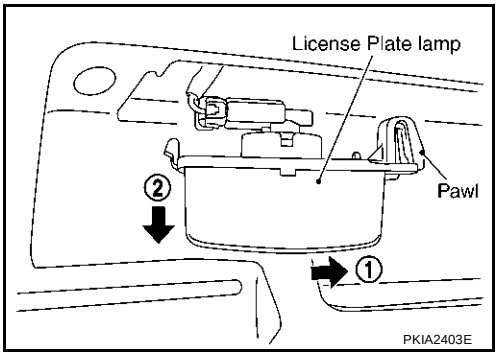
FRONT SIDE MARKER LAMP

1. Insert a slotted screwdriver or similar tool into fender protector gap to push front side marker lamp metal clip in direction 1 (see figure) while pulling in direction 2. Remove from vehicle.
2. Disconnect connectors of front side marker lamp.
3. Install in the reverse order of removal.



LICENSE PLATE LAMP

1. While pressing pawl on reverse side, push license plate towards you to remove.
2. Disconnect the license plate lamp connector.
3. Install in the reverse order of removal.



FRONT TURN SIGNAL (PARKING) LAMP

For front turn signal (parking) lamp removal and installation procedures, refer to LT-29, "Removal and Installation" in “HEAD LAMP (FOR USA)”.

TAIL LAMP

For tail lamp removal and installation procedures, refer to LT-161, "Removal and Installation" in “REAR COMBINATION LAMP”.

REAR COMBINATION LAMP

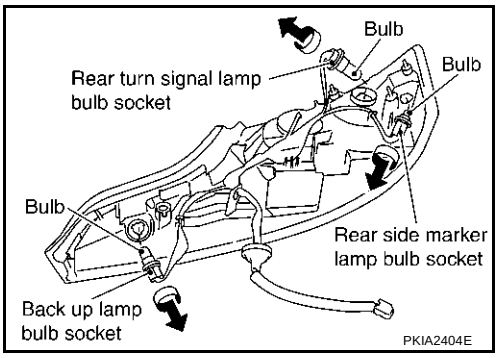
PFP:26554

Bulb Replacement

AKS003B8

REAR FENDER SIDE (REAR TURN SIGNAL LAMP BULB)

1. Remove rear combination lamp. Refer to LT-161, "Removal and Installation" in REAR COMBINATION LAMP.
2. Turn bulb socket counterclockwise and unlock it.
3. Remove bulb.



Stop/tail lamp	**: LED (Replace together with rear combination lamp assembly.)**
Rear turn signal lamp	**: 12V - 21W**
Back-up lamp	**: 12V - 18W**
Rear side marker lamp	**: 12V - 3.8W**

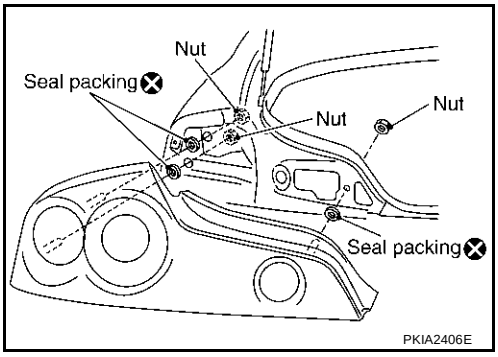
Removal and Installation

AKS003B9

REMOVAL

Rear Fender Side

1. Open trunk lid and remove trunk rear finisher (end). Refer to EI-39, "TRUNK ROOM TRIM & TRUNK LID FINISHER" in "EI" section.
2. Disconnect rear combination lamp connector.
3. Remove rear combination lamp installation nuts.
4. Pull the rear combination lamp toward rear of the vehicle and remove from the vehicle.
5. Remove seal packing from the vehicle.



INSTALLATION

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

- Install a new seal packing to the rear combination lamp.

CAUTION:
Seal packing cannot be reused.

Rear combination lamp mounting nut:

: 2.5 - 3.8 N·m (0.26 - 0.38 kg-m, 23 - 33 in-lb)

VANITY MIRROR LAMP

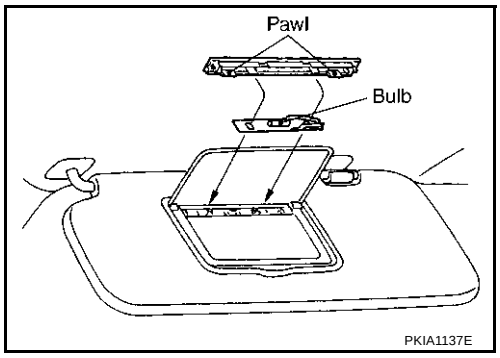
PFP:96400

Bulb Replacement

AKS003BA

1. Insert a thin screwdriver in the lens end and remove lens.
2. Remove bulb together with substrate.

Vanity mirror lamp : 12V - 1.32W



MAP LAMP

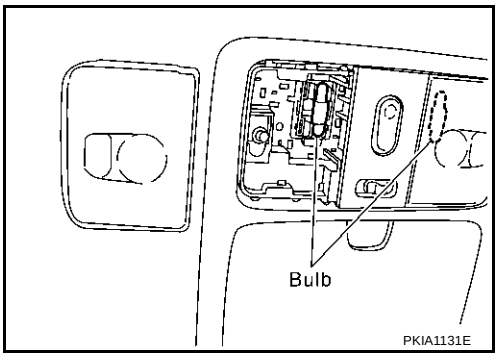
PFP:26430

Bulb Replacement of Map Lamp

AKS005PF

1. Insert a small screwdriver into the lens hinge gap and remove lens.
2. Remove bulb.

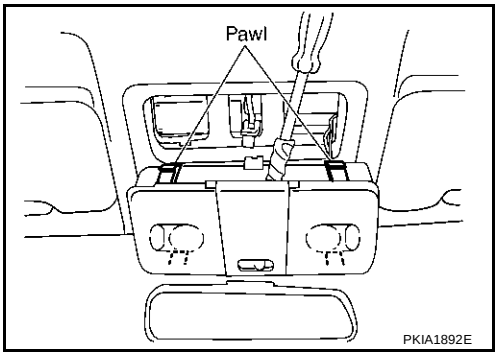
Map lamp : 12V - 8W



Removal and Installation of Map Lamp

AKS005PG

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

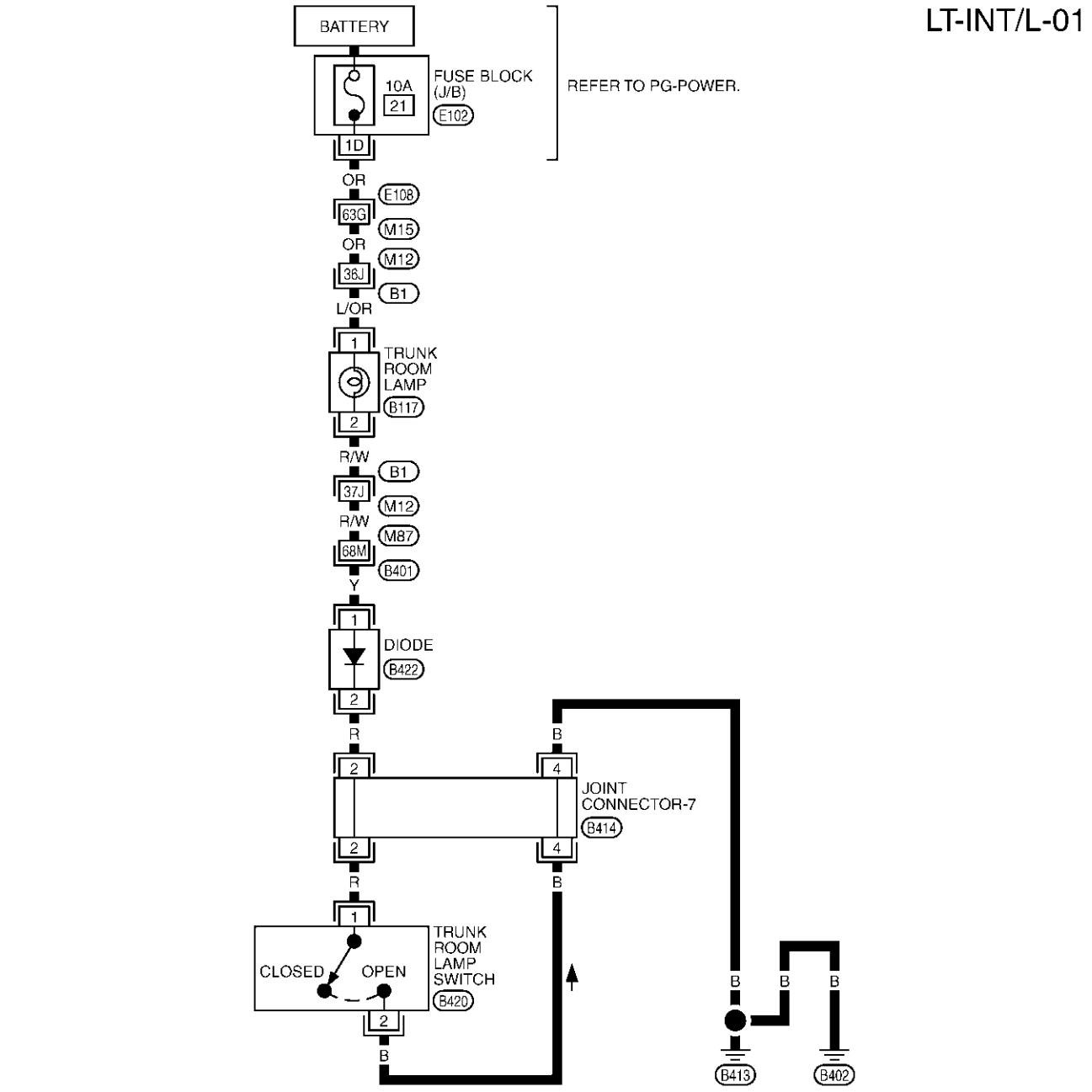


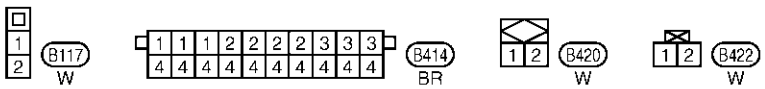
TRUNK ROOM LAMP

PFP:26470

Wiring Diagram — INT/L —

AKS005PI





REFER TO THE FOLLOWING.
E108 , B1 , B401 -SUPER MULTIPLE JUNCTION (SMJ)
E102 -FUSE BLOCK-JUNCTION BOX (J/B)

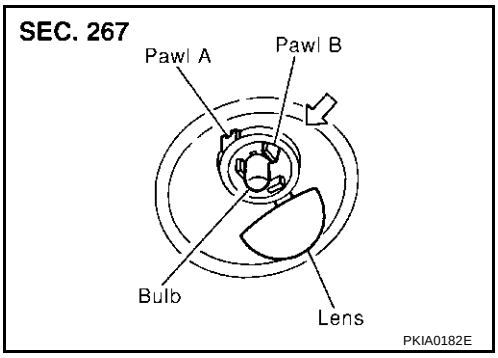
TKWT0620E

Bulb Replacement, Removal and Installation of Trunk Room Lamp

AKS005PL

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



IGNITION KEY HOLE ILLUMINATION

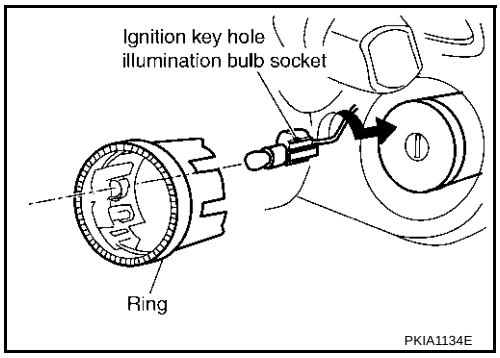
PFP:48476

Removal and Installation

AKS003BH

1. Remove cluster lid A and steering lock escutcheon. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" in “IP” section.
2. Pull out ring and turn bulb socket to left to release lock.

Key cylinder illumination : 12V - 1.4W



GLOVE BOX LAMP

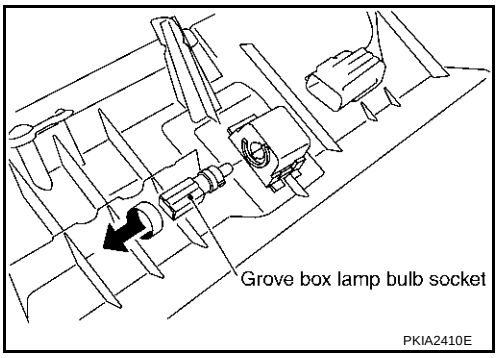
PFP:68520

Removal and Installation

AKS003BI

1. Remove instrument lower passenger panel. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" in “IP” section.
2. Turn bulb socket left to release lock and remove it.

Glove box lamp : 12V - 1.4W



ASHTRAY ILLUMINATION

PFP:25860

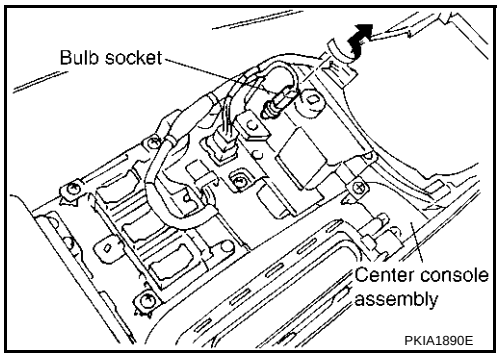
Bulb Replacement, Removal and Installation (M/T)

AKS004TX

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.



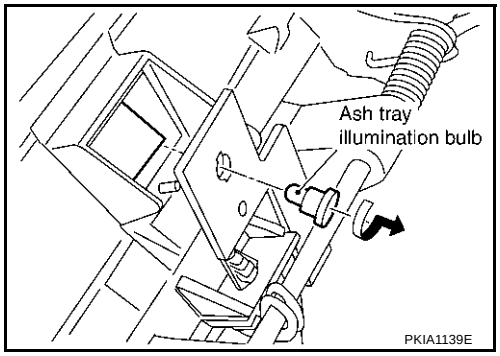
Bulb Replacement, Removal and Installation (A/T)

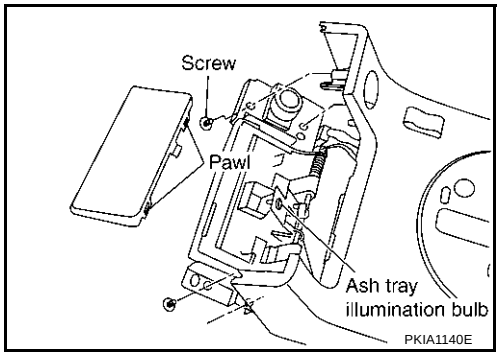
AKS005T0

1. Remove console finisher (A/T). Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" in “IP” section.
2. Remove instrument panel ashtray. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" in “IP” section.
3. Use a screwdriver to undo ashtray finisher hooks.
4. Turn bulb socket on circuit board to left to undo lock. Remove bulb socket.

Ashtray illumination : 12V - 1.4W

5. Install in the reverse order of removal.





CIGARETTE LIGHTER ILLUMINATION

PFP:25331

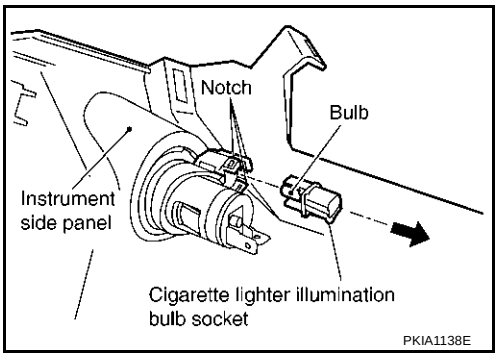
Removal and Installation

AKS003BK

1. Remove instrument side panel. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" in “IP” section.
2. Open hooks and remove bulb socket.

Cigarette lighter illumination : 12V - 1.4W

CAUTION:
When replacing bulb, replace assembly together with illumination ring.



INTERIOR ROOM LAMP

PFP:26410

System Description

AKS003BL

When map lamp switch is in DOOR position, map lamp ON/OFF is controlled by timer according to signals from switches including key switch, front door switch driver side, unlock signal from keyfob, door lock and unlock switch, key cylinder lock and unlock switch, ignition switch.
When 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.
The map lamp timer is controlled by the BCM (body control module).
Map lamp timer control settings can be changed with CONSULT-II.
Ignition keyhole illumination turns ON at time when driver door is opened (door switch ON) or removed keyfob from key cylinder. Illumination turns OFF when driver door is closed (door switch OFF).
Step lamp turns ON at time when driver door or passenger door is opened (door switch ON). Lamp turns OFF when driver, passenger doors are closed (all door switches OFF).

POWER SUPPLY AND GROUND

Power is supplied at all times

- through 10A fuse [No. 21, located in the fuse block (J/B)]
- to key switch terminal 2.
- through 50A fusible link [letter F, located in the fuse and fusible link box]
- to BCM (body control module) terminal 7.

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

- through key switch terminal 1
- to BCM (body control module) terminal 62.

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

- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to BCM (body control module) terminal 35.

Ground is supplied:

- to BCM (body control module) terminal 8
- through grounds terminals E17 and E43.

When the driver side door is opened, ground is supplied

- through case ground of door switch driver side
- to BCM (body control module) terminal 14.

When the passenger side door is opened, ground is supplied

- through case ground of door switch passenger side
- to BCM (body control module) terminal 10.

When the driver side door is unlocked by the door lock and unlock switch, BCM (body control module) receives a ground signal

- through grounds terminals M30 and M66
- to power window main switch terminal 15 (door lock and unlock switch) or power window sub−switch terminal 11 (door lock and unlock switch)
- from power window main switch terminal 12 (door lock and unlock switch) or power window sub−switch terminal 16 (front passenger side)
- to BCM (body control module) terminal 74

When the front driver side door is unlocked by the driver side door lock assembly (door key cylinder switch), BCM (body control module) receives a ground signal

- through grounds M30 and M66
- to driver side door lock assembly (door key cylinder switch) terminal 5
- from driver side door lock assembly (door key cylinder switch) terminal 6
- to power window main switch terminal 7 (door lock and unlock switch)
- from power window main switch terminal 7 (door lock and unlock switch)
- to BCM (body control module) terminal 74

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

- through BCM (body control module) terminal 32
- to map lamp terminal 2.

With power and supplied, the interior lamp illuminates.

SWITCH OPERATION

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

- through BCM terminal 34
- to ignition keyhole illumination terminal 2.

And power is supplied

- from BCM terminal 24
- to ignition keyhole illumination terminal 1.

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

- through BCM terminal 33
- to step lamp driver side and passenger side terminal 2.

And power is supplied

- from BCM terminal 24
- to step lamp driver side and passenger side terminal 1.

When map lamp switch is ON, ground is supplied

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

And power is supplied

- from BCM terminal 24
- to map lamp terminal 3.

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

- through grounds M30 and M66
- to vanity mirror lamp (driver side and passenger side) terminal 2.

And power is supplied

- from BCM terminal 24
- to vanity mirror lamp (driver side and passenger side) 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 spot turns ON or OFF there is gradual brightening or dimming over 1 second.
Power is supplied

- to 10A fuse [No. 21 (located in the 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 62.
Ground is supplied

- from BCM terminal 74
- to power window main switch (door lock and unlock switch) terminal 15.

At this time, BCM detects that driver door is unlocked. It determines that map lamp timer operation conditions are met, and turns the 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 62.

When key is removed from key switch (key switch OFF), power supply to BCM terminal 62 is terminated. BCM detects that key has been removed, determines that map lamp timer conditions are met, and turns the map lamp ON for 30 seconds.

When driver door opens → closes, and the key is not inserted in the key switch (key switch OFF), BCM terminal 14 changes between 0V (door open) → 12V (door closed). The BCM determines that conditions for map lamp operation are met and turns the interior lamp ON for 30 seconds.
Timer control is canceled under the following conditions.

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

INTERIOR LAMP BATTERY SAVER CONTROL

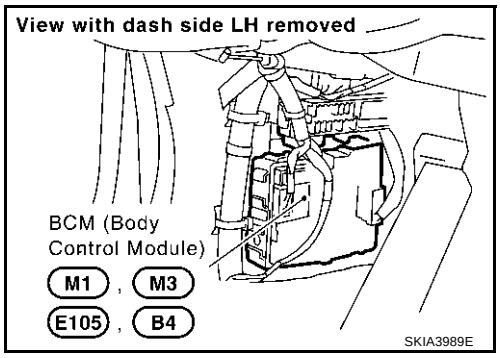
If the room lamp remains illuminated by the door switch open signal, or if the room lamp switch is in the ON position for more than 30 minutes after the ignition switch is turned to the OFF position, the BCM will automatically turn off the map lamp, step lamp, and/or personal lamp and vanity mirror lamp.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

- signal from keyfob, 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.

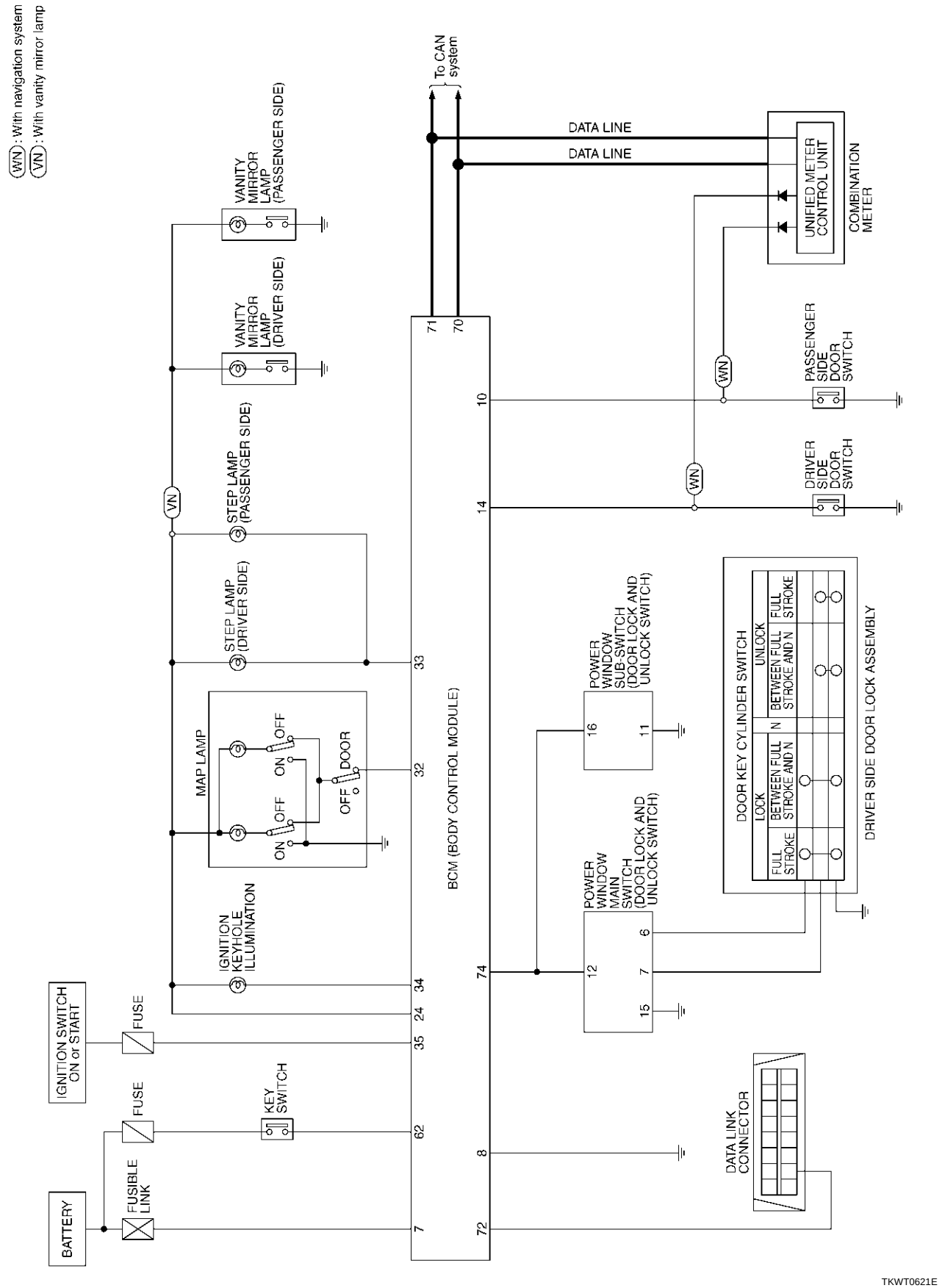
Component Parts and Harness Connector Location

AKS003BM



Schematic

AKS003BN

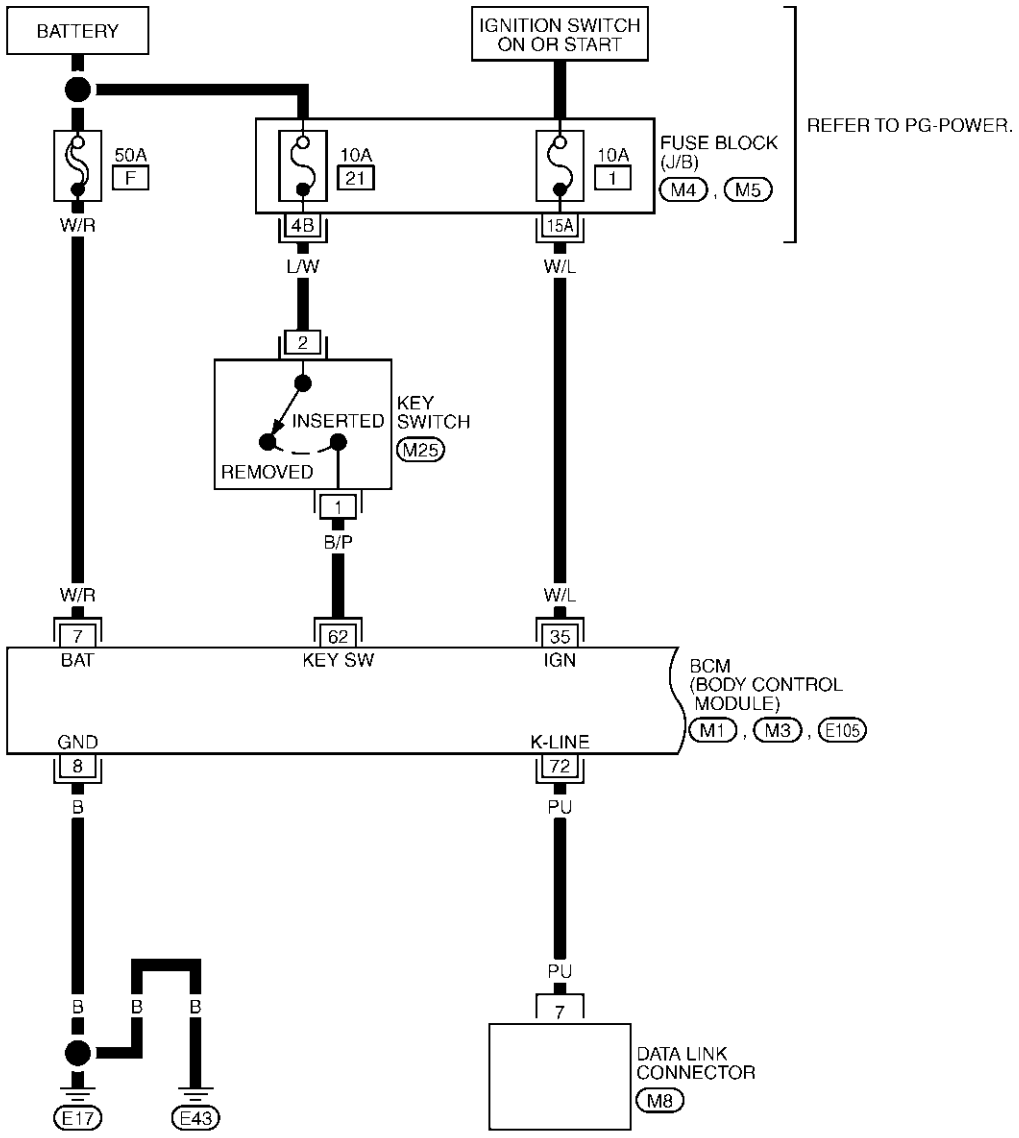


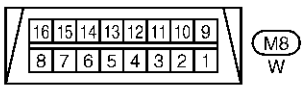
TKWT0621E

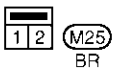
Wiring Diagram — ROOM/L —

AKS003BO

LT-ROOM/L-01



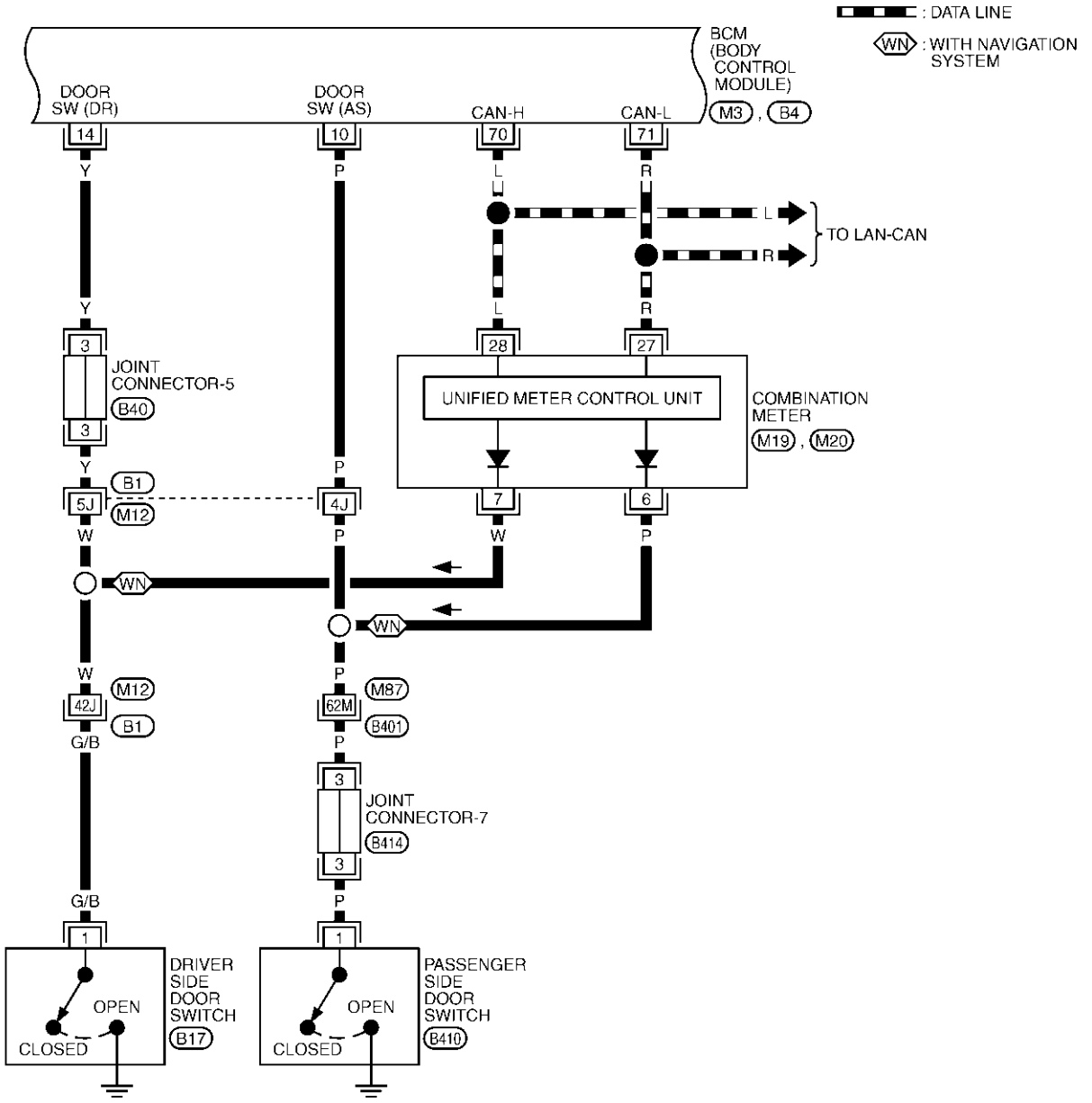




REFER TO THE FOLLOWING.
M4, M5 -FUSE BLOCK-JUNCTION BOX (J/B)
M1, M3, E105 -ELECTRICAL UNITS

TKWT0622E

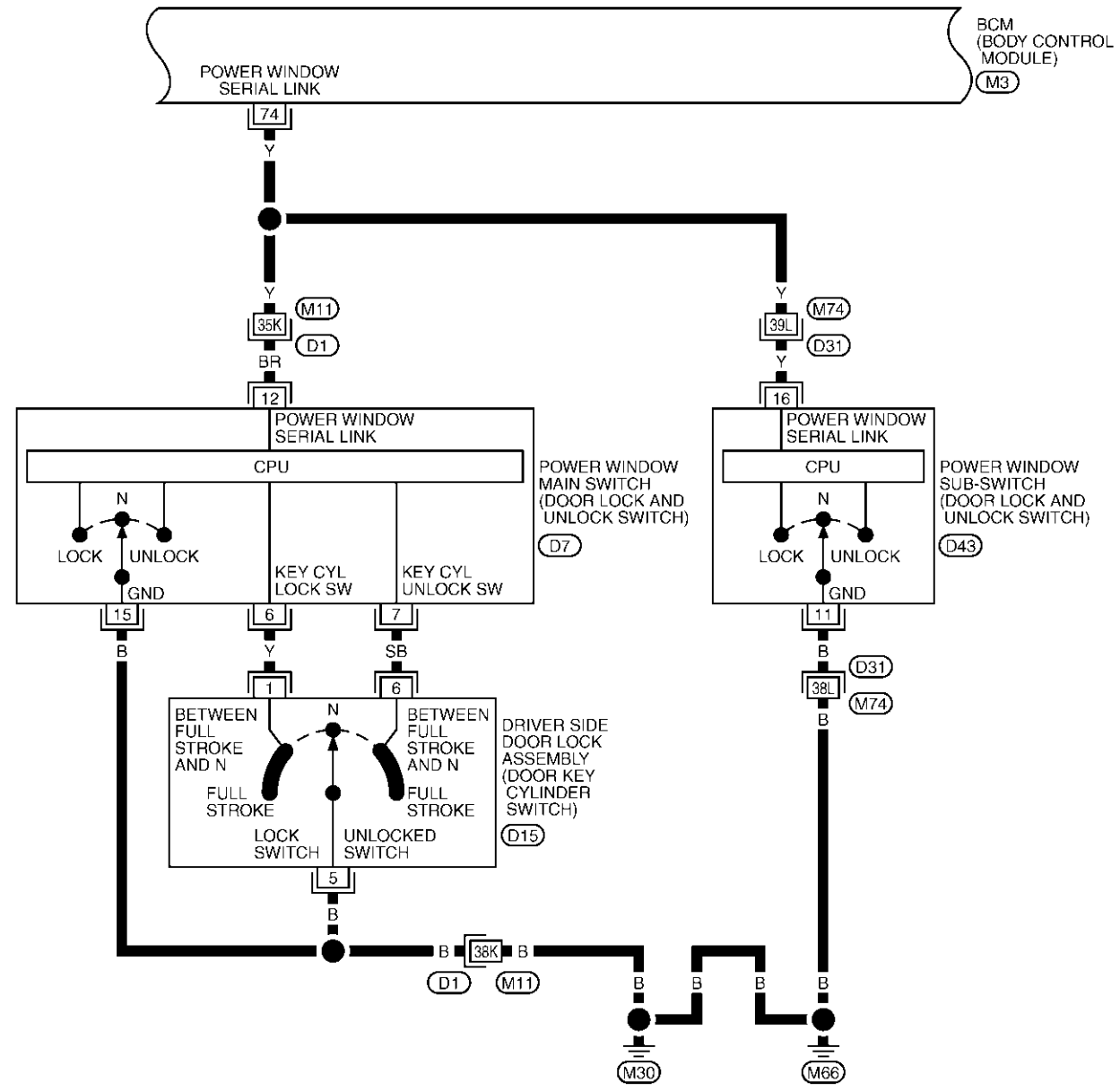
LT-ROOM/L-02

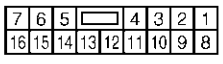


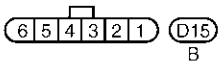
REFER TO THE FOLLOWING.
B1 , B401 -SUPER MULTIPLE JUNCTION (SMJ)
M3 , B4 -ELECTRICAL UNITS

TKWT0623E

LT-ROOM/L-03



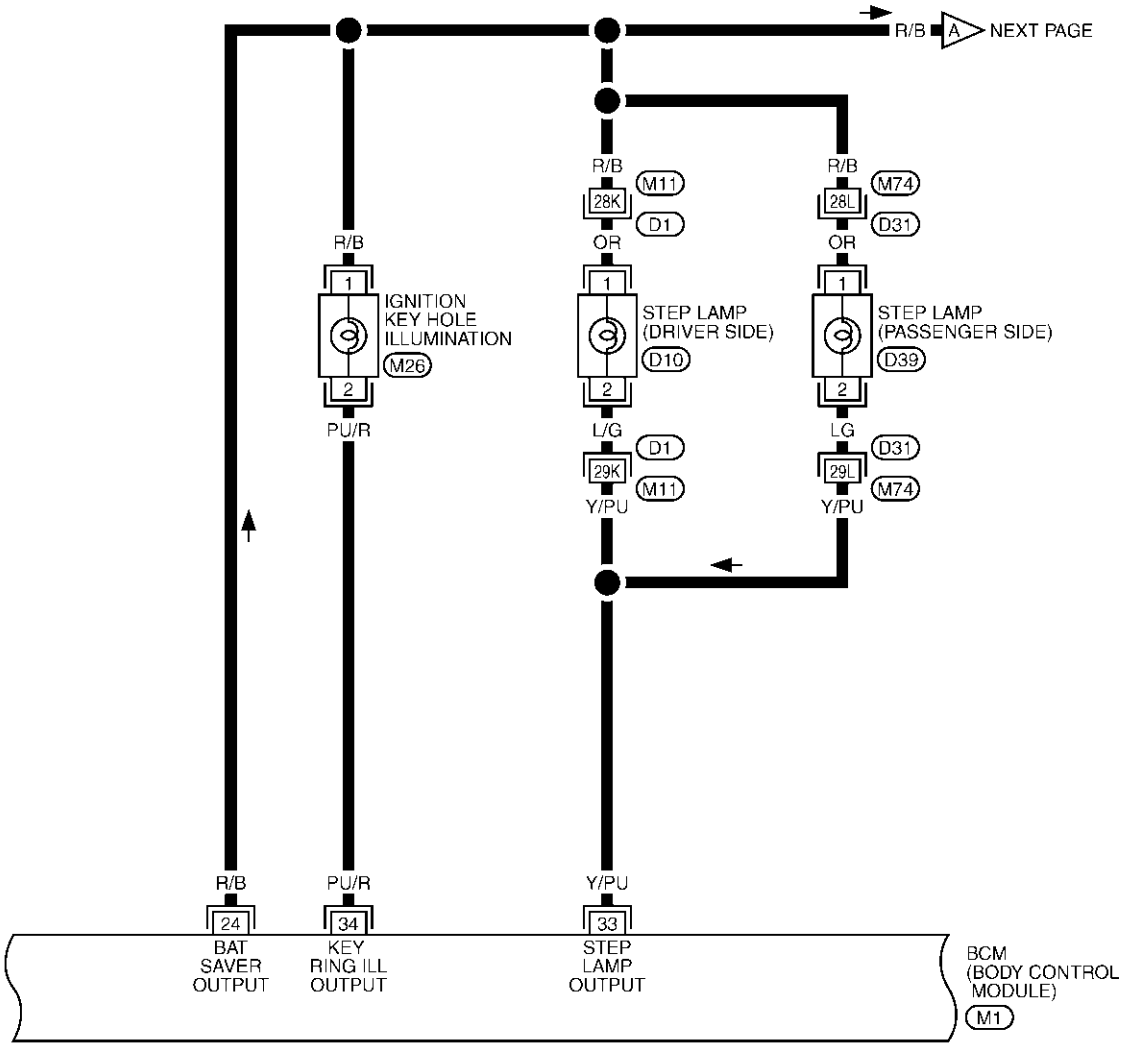




REFER TO THE FOLLOWING.
(D1) , (D31) -SUPER MULTIPLE JUNCTION (SMJ)
(M3) -ELECTRICAL UNITS

TKWT0624E

LT-ROOM/L-04



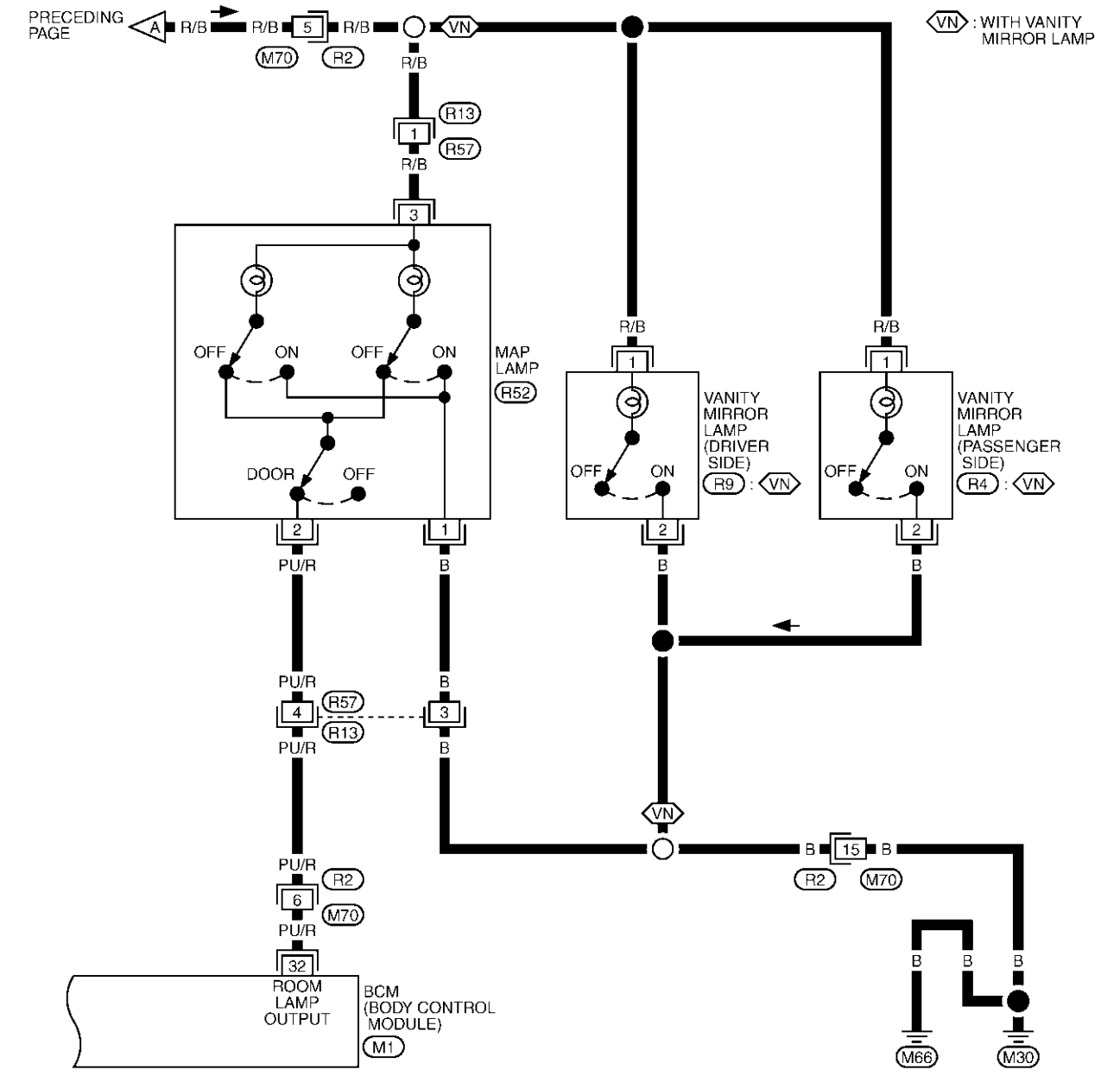
1 2 M26 W

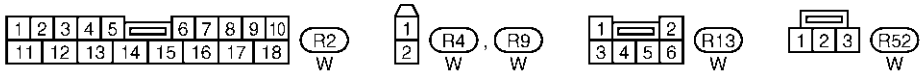
1 2 D10 W , D39 W

REFER TO THE FOLLOWING.
D1 , D31 -SUPER MULTIPLE JUNCTION (SMJ)
M1 -ELECTRICAL UNITS

TKWT0625E

LT-ROOM/L-05



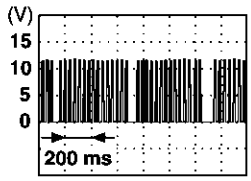


REFER TO THE FOLLOWING.
M1 -ELECTRICAL UNITS

TKWT0626E

Terminals and Reference Value for BCM

AKS003ZO

Terminal No.	Wire color	Signal name	Measuring condition				Reference value
			Ignition switch	Operation or condition			
7	W/R	Battery power supply	OFF	—			Battery voltage
8	B	Ground	ON	—			Approx. 0V
10	P	Door switch AS signal	OFF	Door switch AS	ON (open)		Approx. 0V
					OFF (closed)		Battery voltage
14	Y	Door switch DR signal	OFF	Door switch DR	ON (open)		Approx. 0V
					OFF (closed)		Battery voltage
24	R/B	Battery saver output signal	OFF	30 minutes after ignition switch is turned to OFF			Approx. 0V
			ON	—			Battery voltage
32	PU/R	Room lamp output signal	ON	Map lamp switch: DOOR position	Any door switch	ON (open)	Approx. 0V
					All door switch	OFF (closed)	Battery voltage
33	Y/PU	Step lamp signal	OFF	Any door is open (ON)			Approx. 0V
				All doors are closed (OFF)			Battery voltage
34	PU/R	Ignition keyhole illumination signal	OFF	Door is locked. (SW OFF)			Battery voltage
				Door is unlocked. (SW ON)			Approx. 0V
35	W/L	IGN power supply	ON	—			Battery voltage
62	B/P	Key switch signal	OFF	Vehicle key is removed.			Approx. 0V
				Vehicle key is inserted.			Battery voltage
72	PU	K-LINE	—	—			—
74	Y	Power window switch serial link	—	—			 PIIA2344J

How to Proceed With Trouble Diagnosis

AKS003BQ

1. Confirm the trouble symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-170, "System Description" .
3. Carry out the Preliminary Inspection. Refer to LT-180, "Preliminary Inspection" .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the interior room lamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection end.

Preliminary Inspection

AKS003BR

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown BCM fuses.

UNIT	POWER SOURCE	FUSE No.
BCM	Battery	F
	Ignition switch ON or START position	1

Refer to LT-174, "Wiring Diagram — ROOM/L —" .

OK or NG

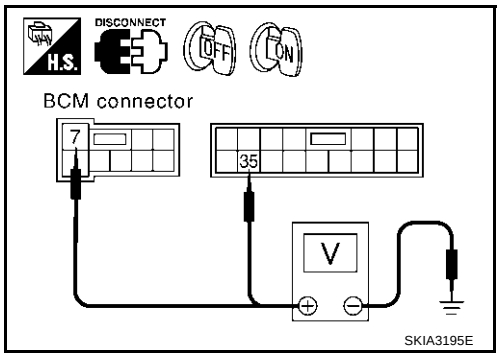
OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of problem 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	ON
Connector	Terminal (Wire color)			
E105	7 (W/R)	Ground	Battery voltage	Battery voltage
M1	35 (W/L)		0V	Battery voltage



OK or NG

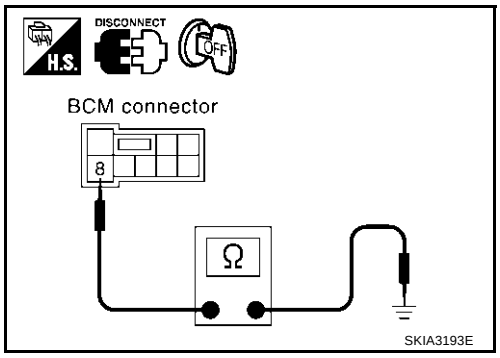
OK >> GO TO 3.

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

Terminals			Continuity
(+)		(–)	
Connector	Terminal (Wire color)		
E105	8 (B)	Ground	Yes



OK or NG

OK >> INSPECTION END

NG >> Check harness ground circuit.

CONSULT-II Function

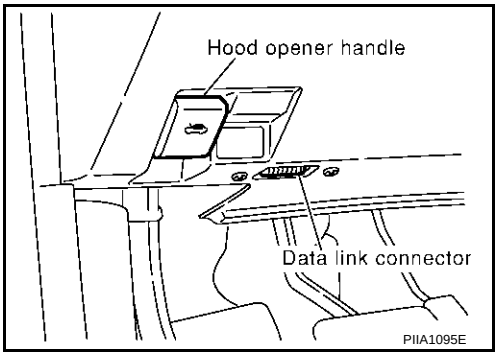
AKS003BS

CONSULT-II performs the following functions communicating with BCM.

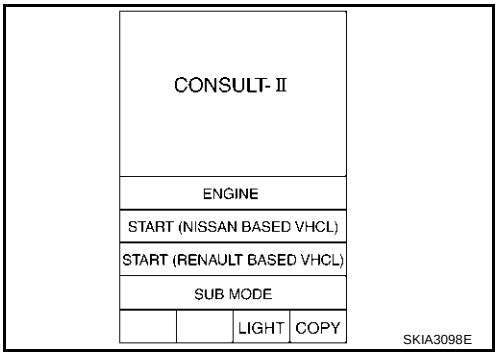
BCM diagnosis part	Check item, diagnosis mode	Description
INTERIOR LAMP	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending driving signal to them.

CONSULT-II BASIC OPERATION

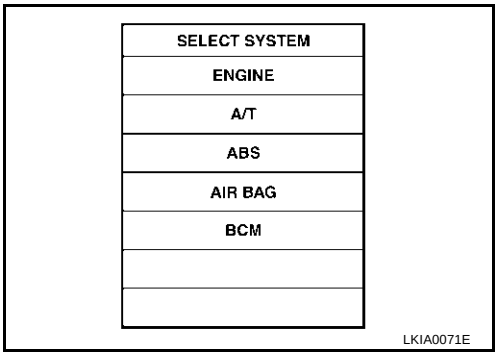
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



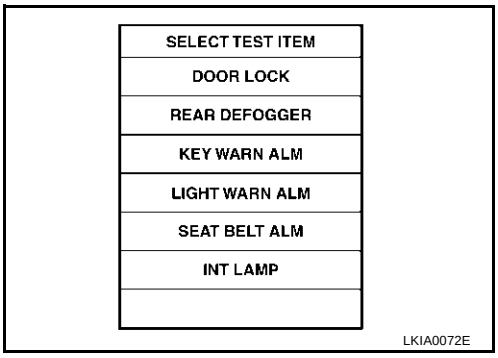
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “BCM” on “SELECT SYSTEM” screen.
If “BCM” is not indicated, go to GI-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 “ROOM LAMP TIMER SET” on “SELECT WORK ITEM” screen.
4. Touch “START”.
5. Touch “CHANGE SETT”.
6. The setting will be changed and “CUSTOMIZING COMPLETED ” will be displayed.
7. Touch “END”.

Display Item List

Item	Description	CONSULT-II	Factory setting
ROOM LAMP TIMER SET	Map lamp ON/OFF can be selected for when driver door lock is released (unlocked).	ON	×
		OFF	—

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 name “OPERATION OR UNIT”		Contents
IGN ON SW	“ON/OFF”	Displays “IGN position (ON)/OFF, ACC position (OFF)” judged from the ignition switch signal.
KEY ON SW	“ON/OFF”	Displays “Key inserted (ON)/key removed (OFF)” status judged from the key switch signal.
DOOR SW - DR	“ON/OFF”	Displays status of the driver door as judged from the driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - AS	“ON/OFF”	Displays “Door open (ON)/Door closed (OFF)” status, determined from passenger door switch signal.
LOCK SW DR/AS	“ON/OFF”	Displays “Door locked (ON)/Door unlocked (OFF) status, determined from locking detection switch in driver door.
UNLK SW DR/AS	“ON/OFF”	Displays “Door unlocked (OFF)” status, determined from locking detection switch in driver door and passenger door.
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.
LK BUTTON/SIG	“ON/OFF”	Displays “Locked (ON)/Other (OFF)” status, determined from lock signal.
UN BUTTON/SIG	“ON/OFF”	Displays “Unlocked (ON)/Other (OFF)” status, determined from unlock signal.
DOOR SW - RR[Note]	“OFF”	—

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.

Map Lamp Control Does Not Operate

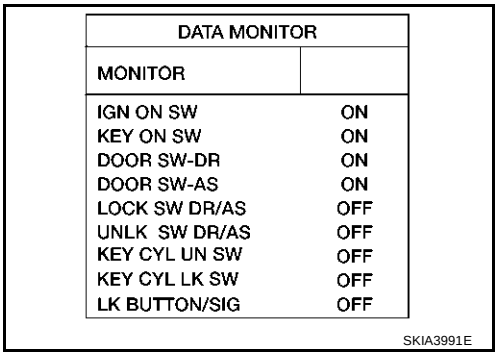
AKS003BT

1. INSPECTION: EACH SWITCH AND BCM

Select BCM on CONSULT-II. With “INT LAMP” data monitor to make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-182, "Display Item List" for switches and their functions.

OK or NG

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

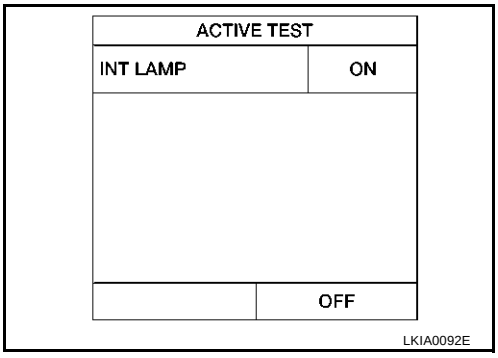


2. INSPECTION 1: BCM AND MAP LAMP

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.

OK or NG

OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .
NG >> GO TO 3.



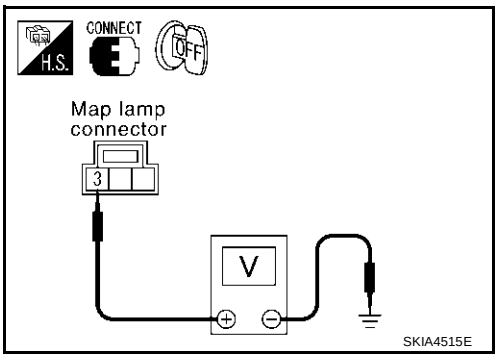
3. INSPECTION 2: BCM AND MAP LAMP

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

Terminals			Voltage
Map lamp		Ground	
Connector	Terminal (Wire color)		
R52	3 (R/B)		Battery voltage

OK or NG

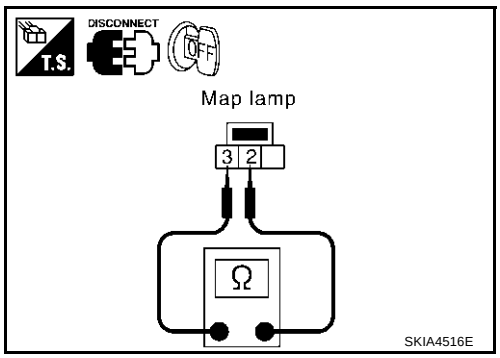
OK >> GO TO 4.
NG >> GO TO 6.



4. 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 ON	Yes
		Map lamp switch is OFF	No



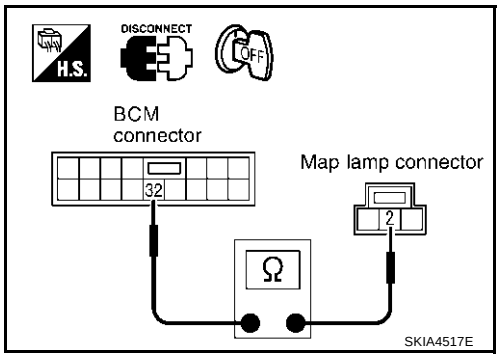
OK or NG

OK >> GO TO 5.
NG >> Replace map lamp.

5. INSPECTION 3: BCM AND MAP LAMP

1. Disconnect BCM connector.
2. Check continuity between harness connector of BCM and harness connector of map lamp.

Terminals				Continuity
BCM		Map lamp		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M1	32 (PU/R)	R52	2 (PU/R)	Yes



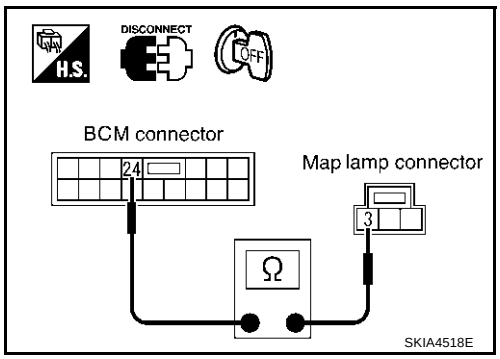
OK or NG

OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .
NG >> Repair harness or connector.

6. INSPECTION 4: BCM AND MAP LAMP

1. Disconnect BCM connector and map lamp connector.
2. Check continuity between harness connector of BCM and harness connector of map lamp.

Terminals				Continuity
BCM		Map lamp		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M1	24 (R/B)	R52	3 (R/B)	Yes



OK or NG

OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .
NG >> Repair harness or connector.

Ignition Key Hole Illumination Control Does Not Operate

AKS004BV

1. CHECK BULB

Check lamp bulb lamp which does not operate.

OK or NG

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

2. INSPECTION BETWEEN EACH SWITCH AND BCM

Select BCM on CONSULT-II. With “INT LAMP” data monitor to make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-182, "Display Item List" for switches and their functions.

OK or NG

OK >> GO TO 3.
NG >> Inspect malfunctioning switch system.

DATA MONITOR	
MONITOR	
IGN ON SW	ON
KEY ON SW	ON
DOOR SW-DR	ON
DOOR SW-AS	ON
LOCK SW DR/AS	OFF
UNLK SW DR/AS	OFF
KEY CYL UN SW	OFF
KEY CYL LK SW	OFF
LK BUTTON/SIG	OFF

SKIA3991E

3. INSPECTION 1: BCM AND IGNITION KEY HOLE ILLUMINATION

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

OK or NG

OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .
NG >> GO TO 4.

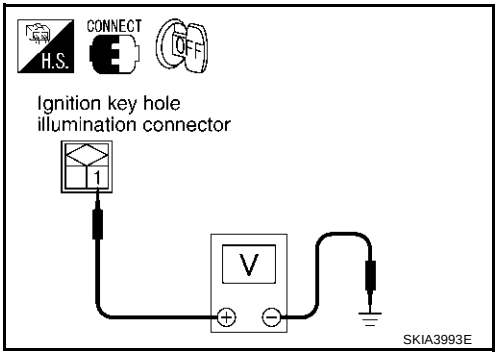
ACTIVE TEST	
IGN ILLUM	ON
	OFF

SKIA3992E

4. INSPECTION 2: BCM AND IGNITION KEY HOLE ILLUMINATION

1. Turn ignition switch OFF.
2. Check voltage between harness connector of ignition key hole illumination and ground.

Terminals			Voltage
Ignition key hole illumination		Ground	
Connector	Terminal (Wire color)		
M26	1 (R/B)		Battery voltage



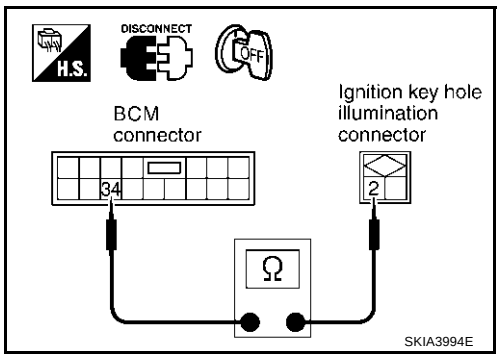
SKIA3993E

OK or NG

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

5. INSPECTION 3: BCM AND IGNITION KEY HOLE ILLUMINATION

1. Disconnect BCM connector and key hole illumination connector.
2. Check continuity between harness connector of BCM and harness connector of key hole illumination.



Terminals				Continuity
BCM		Ignition key hole illumination		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M1	34 (PU/R)	M26	2 (PU/R)	Yes

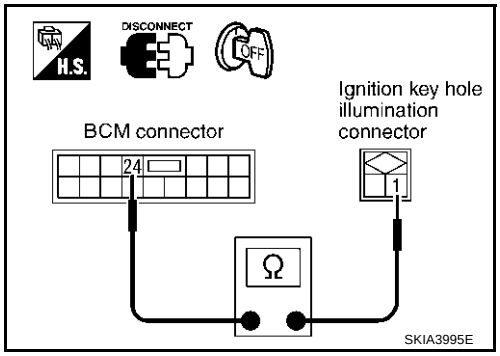
OK or NG

OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .

NG >> Repair harness or connector.

6. INSPECTION 4: BCM AND IGNITION KEY HOLE ILLUMINATION

1. Disconnect BCM connector and key hole illumination connector.
2. Check continuity between harness connector of BCM and harness connector of key hole illumination.



Terminals				Continuity
BCM		Ignition key hole illumination		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M1	24 (R/B)	M26	1 (R/B)	Yes

OK or NG

OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .

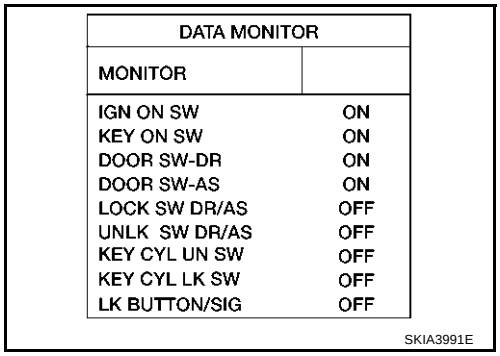
NG >> Repair harness or connector.

Step Lamp Does Not Operate

AKS003BU

1. INSPECTION 1: EACH DOOR SWITCH AND BCM

Select BCM on CONSULT-II. With “INT LAMP” data monitor to make sure switches listed below turn ON-OFF linked with switch operation.



Switch name	CONSULT screen
Driver side door switch	DOOR SW-DR
passenger side door switch	DOOR SW-AS

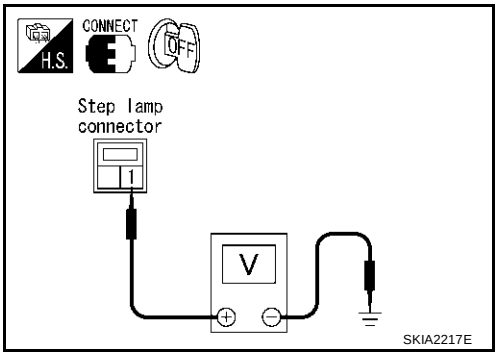
OK or NG

OK >> GO TO 2.

NG >> Inspect malfunctioning switch system.

2. INSPECTION 1: BCM AND STEP LAMP

1. Turn ignition switch OFF.
2. Check voltage between harness connector of step lamp (driver side/passenger side) and ground.



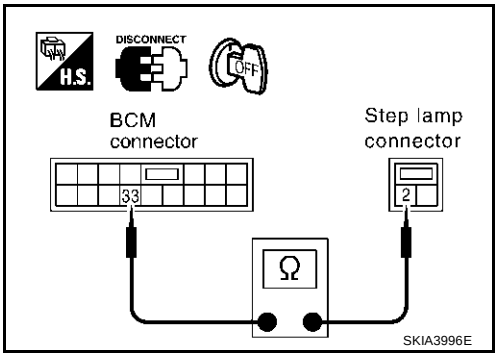
Terminals				Voltage
Step lamp			Ground	
Connector		Terminal (Wire color)		
Driver side	D10	1 (OR)		Battery voltage
Passenger side	D39			

OK or NG

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

3. INSPECTION 2: BCM AND STEP LAMP

1. Disconnect BCM connector and step lamp (driver side/passenger side) connectors.
2. Check continuity between harness connector of BCM connector and harness connector of step lamp (driver side/passenger side).



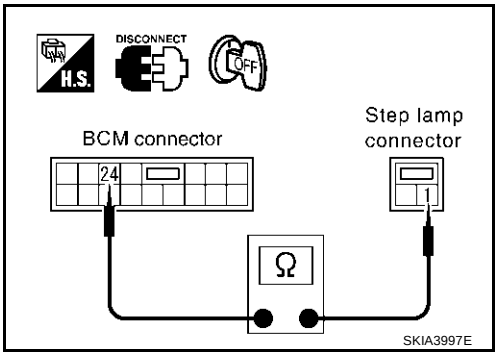
Terminals					Continuity
BCM		Step lamp			
Connector	Terminal (Wire color)	Connector		Terminal (Wire color)	
M1	33 (Y/PU)	Driver side	D10	2 (L/G)	Yes
		Passenger side	D39	2 (LG)	

OK or NG

OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .
NG >> Repair harness or connector.

4. INSPECTION 3: BCM AND STEP LAMP

1. Disconnect BCM connector and step lamp connector.
2. Check continuity between harness connector of BCM and harness connector of step lamp (driver side/passenger side) connector.



Terminals					Continuity
BCM		Step lamp			
Connector	Terminal (Wire color)	Connector		Terminal (Wire color)	
M1	24 (R/B)	Driver side	D10	1 (OR)	Yes
		Passenger side	D39		

OK or NG

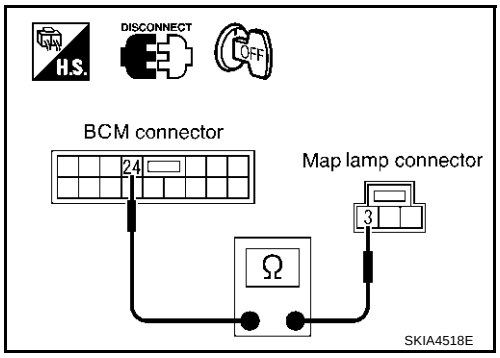
OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .
NG >> Repair harness or connector.

All Interior Room Lamps Do Not Operate

AKS004BW

1. INSPECTION: BCM AND MAP LAMP

1. Disconnect BCM connector and map lamp connector.
2. Check continuity between harness connector of BCM and harness connector of map lamp.



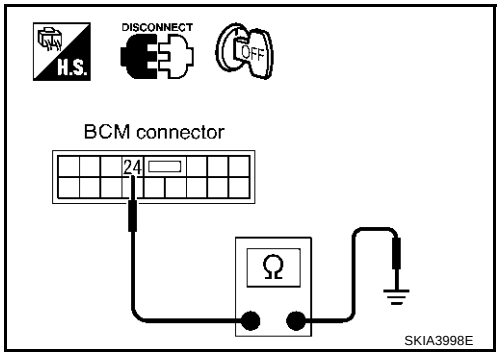
Terminals				Continuity
BCM		Map lamp		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M1	24 (R/B)	R52	3 (R/B)	Yes

OK or NG

OK >> GO TO 2.
NG >> Repair harness or connector.

2. INSPECTION: BCM AND GROUND

1. Disconnect key hole illumination connector, step lamp (driver side/passenger side) connector, map lamp connector and vanity mirror lamp (driver side/passenger side) connector.
2. Check continuity between harness connector of BCM and ground.



Terminals			Continuity
BCM		Ground	
Connector	Terminal (Wire color)		
M1	24 (R/B)		No

OK or NG

OK >> Replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .
NG >> After repairing harness, be sure to disconnect battler negative cable, and then reconnect.

Bulb Replacement

AKS003BV

MAP LAMP

Refer to LT-163, "Bulb Replacement of Map Lamp" in “MAP AND TRUNK ROOM LAMPS”.

Removal and Installation

AKS003BW

MAP LAMP

Refer to LT-163, "Removal and Installation of Map Lamp" in “MAP AND TRUNK ROOM LAMPS”

IGNITION KEY HOLE ILLUMINATION LAMP

Refer to LT-166, "Removal and Installation" in “IGNITION KEY HOLE ILLUMINATION”.

ILLUMINATION

PFP:27545

System Description

AKS003BX

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

Power is supplied at all times

- to tail lamp relay, located in the IPDM E/R (intelligent power distribution module engine room)
- through 10A fuse [No. 75, located in the IPDM E/R (intelligent power distribution module engine room)].

Power is also supplied at all times

- to BCM (body control module) terminal 7
- through 50A fusible link (letter F, located in the fuse and fusible link box)
- to CPU (central processing unit) in the IPDM E/R (intelligent power distribution module engine room)
- through 15A fuse [No. 73, located in the IPDM E/R (intelligent power distribution module engine room)].

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

- to BCM (body control module) terminal 35
- through 10A fuse [No. 1, located in the fuse block (J/B)].
- to CPU (central processing unit) in the IPDM E/R (intelligent power distribution module engine room)
- through 10A fuse [No. 80, located in the IPDM E/R (intelligent power distribution module engine room)]

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

- to BCM (body control module) terminal 36
- through 10A fuse [No. 6, located in the fuse block (J/B)].

Ground is supplied

- to BCM (body control module) terminal 8
- through grounds E17, and E43.
- to IPDM E/R (intelligent power distribution module engine room) terminals 14, and 45
- through grounds E17, and E43.

ILLUMINATION OPERATION BY LIGHTING SWITCH

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

- through terminal 37 of the IPDM E/R
- to combination meter terminal 32,
- to NAVI control unit terminal 9 (with navigation system),
- to NAVI switch terminal 2 (with navigation system),
- to display and A/C auto amp terminal 28,
- to A/C and audio controller terminal 9,
- to audio unit terminal 8,
- to clock (illumination) terminal 4
- to VDC off switch (illumination) terminal 3,
- to A/T illumination terminal 1(with A/T),
- to hazard switch (illumination) terminal 7
- to cigarette lighter illumination terminal 3
- to heated seat switch (driver side) (illumination) terminal 5 (with A/T with heated seat),
- to heated seat switch (passenger side) (illumination) terminal 5 (with A/T with heated seat),
- to heated seat switch (driver side) (illumination) terminal 5 (with M/T),

- to heated seat switch (passenger side) (illumination) terminal 5 (with M/T),
- to illumination control switch terminal 1,
- to ashtray terminal 1 (with M/T),
- to ashtray terminal 1 (with A/T),
- to upper glove box lamp terminal 1 (without navigation system), and
- to glove box lamp terminal 1.

Illumination control

- through terminal 31 of combination meter
- to NAVI switch terminal 3 (with navigation system),
- to display and A/C auto amp terminal 36,
- to A/C and audio controller terminal 10,
- to clock (illumination) terminal 3,
- to VDC off switch (illumination) terminal 4,
- to A/T illumination terminal 2 (with A/T),
- to hazard switch (illumination) terminal 8
- to cigarette lighter illumination terminal 4,
- to heated seat switch (driver side) (illumination) terminal 6 (with A/T with heated seat),
- to heated seat switch (passenger side) (illumination) terminal 6 (with A/T with heated seat),
- to heated seat switch (driver side) (illumination) terminal 6 (with M/T with heated seat),
- to heated seat switch (passenger side) (illumination) terminal 6 (with M/T with heated seat), and
- to illumination control switch terminal 2.

Ground is supplied at all times

- to display and A/C auto amp terminal 24,
- to ashtray terminal 2 (with M/T),
- to ashtray terminal 2 (with A/T),
- to upper glove box lamp terminal 2 (without navigation system), and
- to glove box lamp terminal 2
- through grounds M30, and M66.

With power and ground supplied, illumination lamps illuminate.

EXTERIOR LAMP BATTERY SAVER CONTROL

When the combination switch (lighting switch) is in the 1ST or 2ND position (or if auto light system is activated), and the ignition switch is turned from ON or ACC to OFF, the battery saver control function is activated. Under this condition, the illumination lamps remain illuminated for 5 minutes, then the illumination lamps are turned off.
When the lighting switch is turned from OFF to 1ST or 2ND position (or if auto light system is activated) after illumination lamps are turned off by the battery saver control, 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

AKS003BY

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

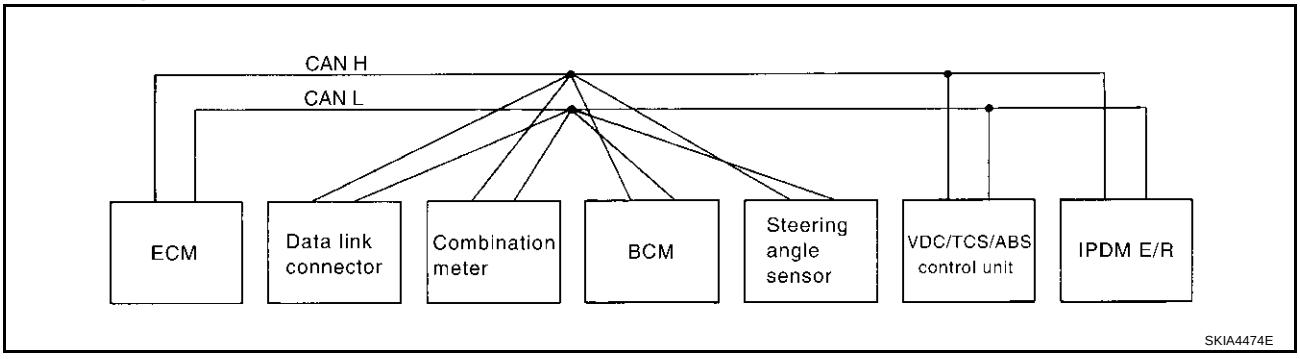
AKS005QH

Body type	Coupe	
Axle	2WD	
Engine	VQ35DE	
Transmission	M/T	A/T
Brake control	VDC	
CAN communication unit		
ECM	×	×
TCM		×
Data link connector	×	×
Combination meter	×	×
BCM	×	×
Steering angle sensor	×	×
VDC/TCS/ABS control unit	×	×
IPDM E/R	×	×
CAN communication type	LT-191	LT-192

×: Applicable

TYPE 1

System diagram



Input/output signal chart

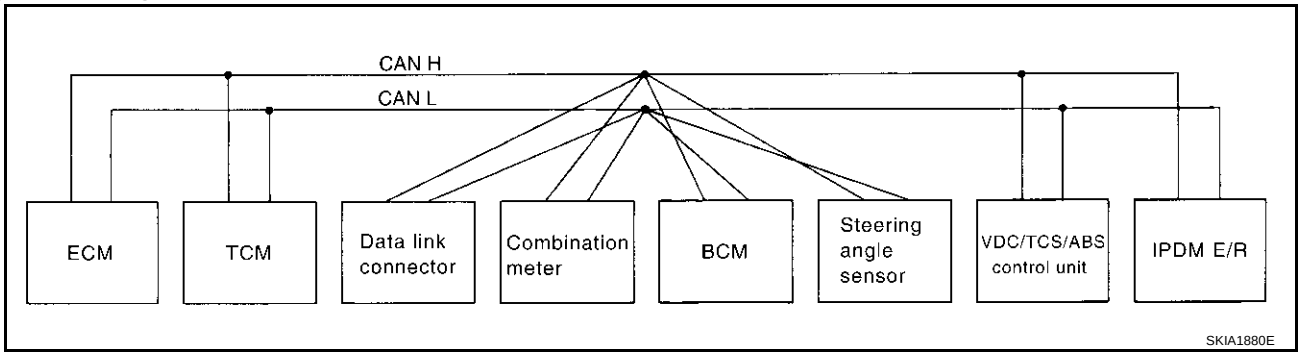
T: Transmit R: Receive

Signals	ECM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Engine speed signal	T	R			R	
Engine coolant temperature signal	T	R				
Accelerator pedal position signal	T				R	
Fuel consumption monitor signal	T	R				
Air conditioner switch signal	R		T			
A/C compressor request signal	T					R
A/C compressor feedback signal	T	R				
Blower fan motor switch signal	R		T			
Cooling fan motor operation signal	T					R
Position lights request signal		R	T			R
Low beam request signal			T			R
Low beam status signal	R		R			T
High beam request signal		R	T			R

Signals	ECM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
High beam status signal	R		R			T
Front fog lights request signal			T			R
Vehicle speed signal		R			T	
	R	T	R			
Sleep request 1 signal		R	T			
Sleep request 2 signal			T			R
Wake up request 1 signal		R	T			
Wake up request 2 signal		R	T			
Door switch signal (without navigation system)		R	T			R
Door switch signal (with navigation system)		T	R			
Turn indicator signal		R	T			
Seat belt buckle switch signal		T	R			
Oil pressure switch signal		R				T
Buzzer output signal		R	T			
Trunk switch signal		R	T			
Malfunction indicator lamp signal	T	R				
ASCD SET lamp signal	T	R				
ASCD CRUISE lamp signal	T	R				
Fuel level sensor signal	R	T				
Front wiper request signal			T			R
Front wiper stop position signal			R			T
Rear window defogger switch signal			T			R
Rear window defogger control signal	R		R			T
Hood switch signal			R			T
Theft warning horn request signal			T			R
Horn chirp signal			T			R
Steering angle sensor signal				T	R	

TYPE 2

System diagram



Input/output signal chart

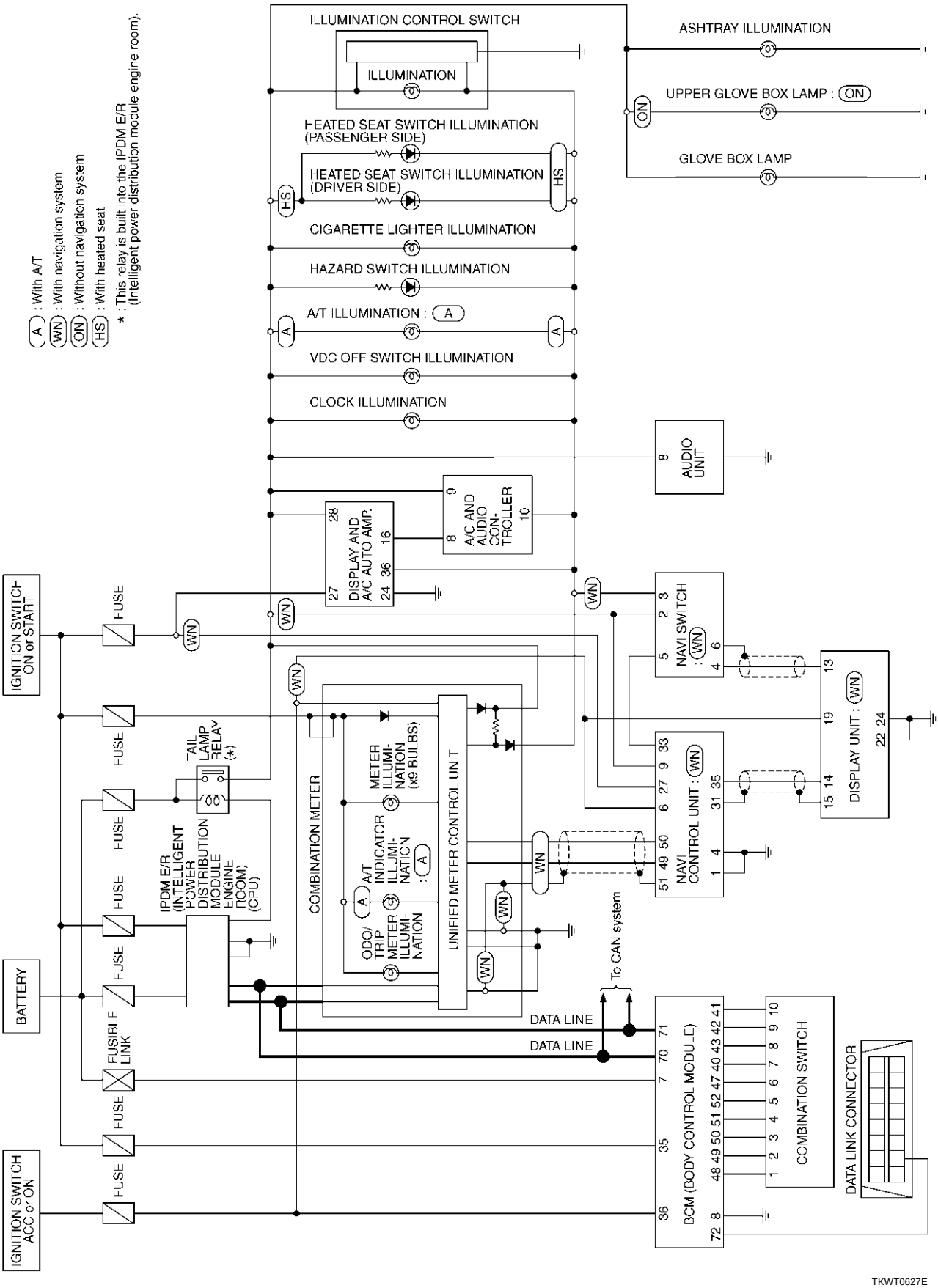
T: Transmit R: Receive

Signals	ECM	TCM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
Engine speed signal	T	R	R			R	
Engine coolant temperature signal	T	R	R				
Accelerator pedal position signal	T	R				R	
Closed throttle position signal	T	R					
Wide open throttle position signal	T	R					
Battery voltage signal	T	R					
Stop lamp switch		R	T				
Fuel consumption monitor signal	T		R				
A/T self-diagnosis signal	R	T					
A/T CHECK indicator lamp signal		T	R				
A/T position indicator signal		T	R			R	
ABS operation signal		R				T	
A/T shift schedule change demand signal		R				T	
Air conditioner switch signal	R			T			
A/C compressor request signal	T						R
A/C compressor feedback signal	T		R				
Blower fan motor switch signal	R			T			
Cooling fan motor operation signal	T						R
Position lights request signal			R	T			R
Low beam request signal				T			R
Low beam status signal	R			R			T
High beam request signal			R	T			R
High beam status signal	R			R			T
Front fog lights request signal				T			R
Vehicle speed signal			R			T	
	R	R	T	R			
Sleep request 1 signal			R	T			
Sleep request 2 signal				T			R
Wake up request 1 signal			R	T			
Wake up request 2 signal			R	T			
Door switch signal (without navigation system)			R	T			R
Door switch signal (with navigation system)			T	R			
Turn indicator signal			R	T			
Seat belt buckle switch signal			T	R			
Oil pressure switch signal			R				T
Buzzer output signal			R	T			
Trunk switch signal			R	T			
Malfunction indicator lamp signal	T		R				
ASCD SET lamp signal	T		R				

Signals	ECM	TCM	Combination meter	BCM	Steering angle sensor	VDC/TCS/ABS control unit	IPDM E/R
ASCD CRUISE lamp signal	T		R				
Fuel level sensor signal	R		T				
Output shaft revolution signal	R	T					
Turbine revolution signal	R	T					
Front wiper request signal				T			R
Front wiper stop position signal				R			T
Rear window defogger switch signal				T			R
Rear window defogger control signal	R			R			T
Manual mode signal		R	T				
Not manual mode signal		R	T				
Manual mode shift up signal		R	T				
Manual mode shift down signal		R	T				
Manual mode indicator signal		T	R				
Hood switch signal				R			T
Theft warning horn request signal				T			R
Horn chirp signal				T			R
Steering angle sensor signal					T	R	

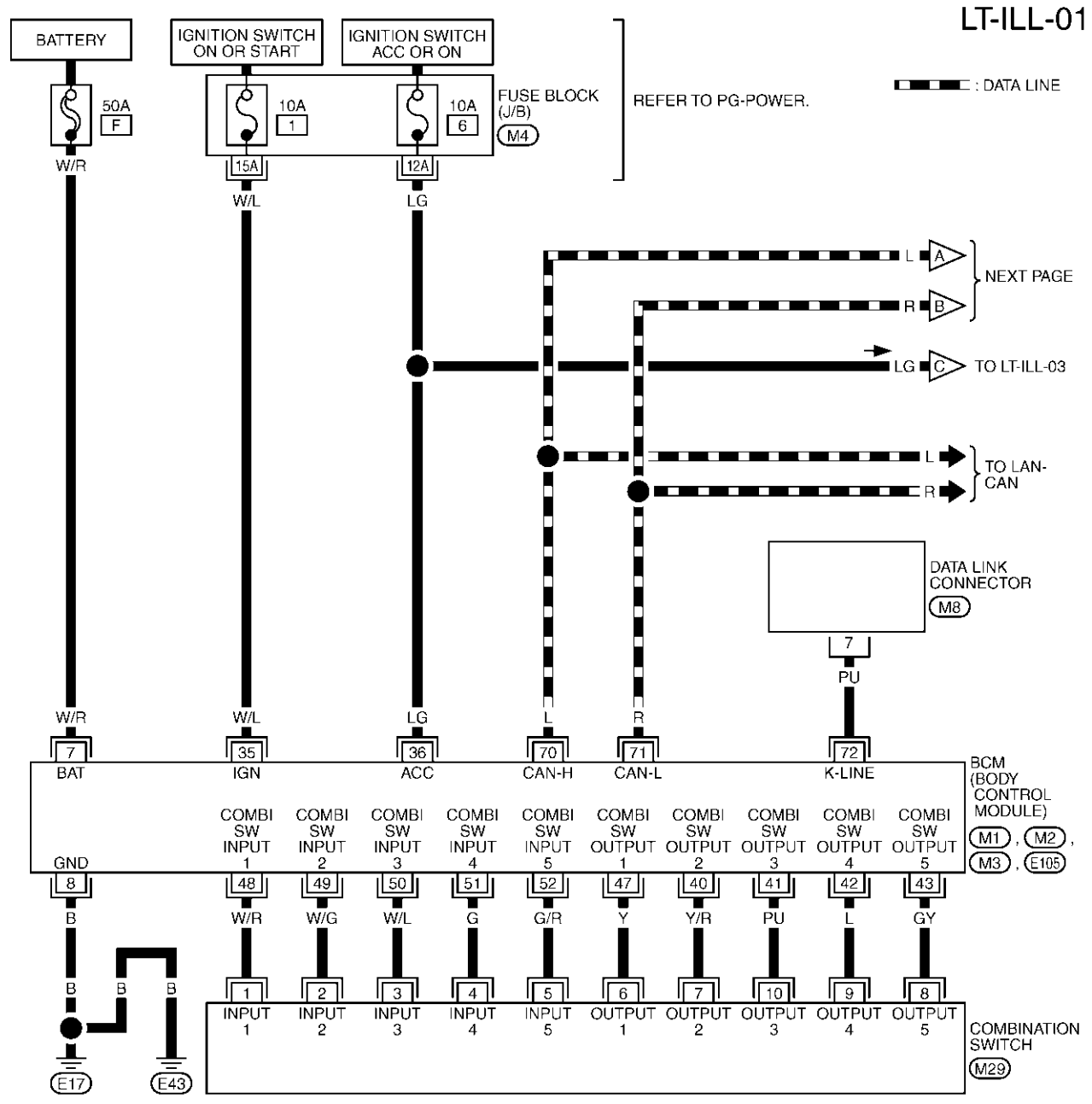
Schematic

AKS003C0



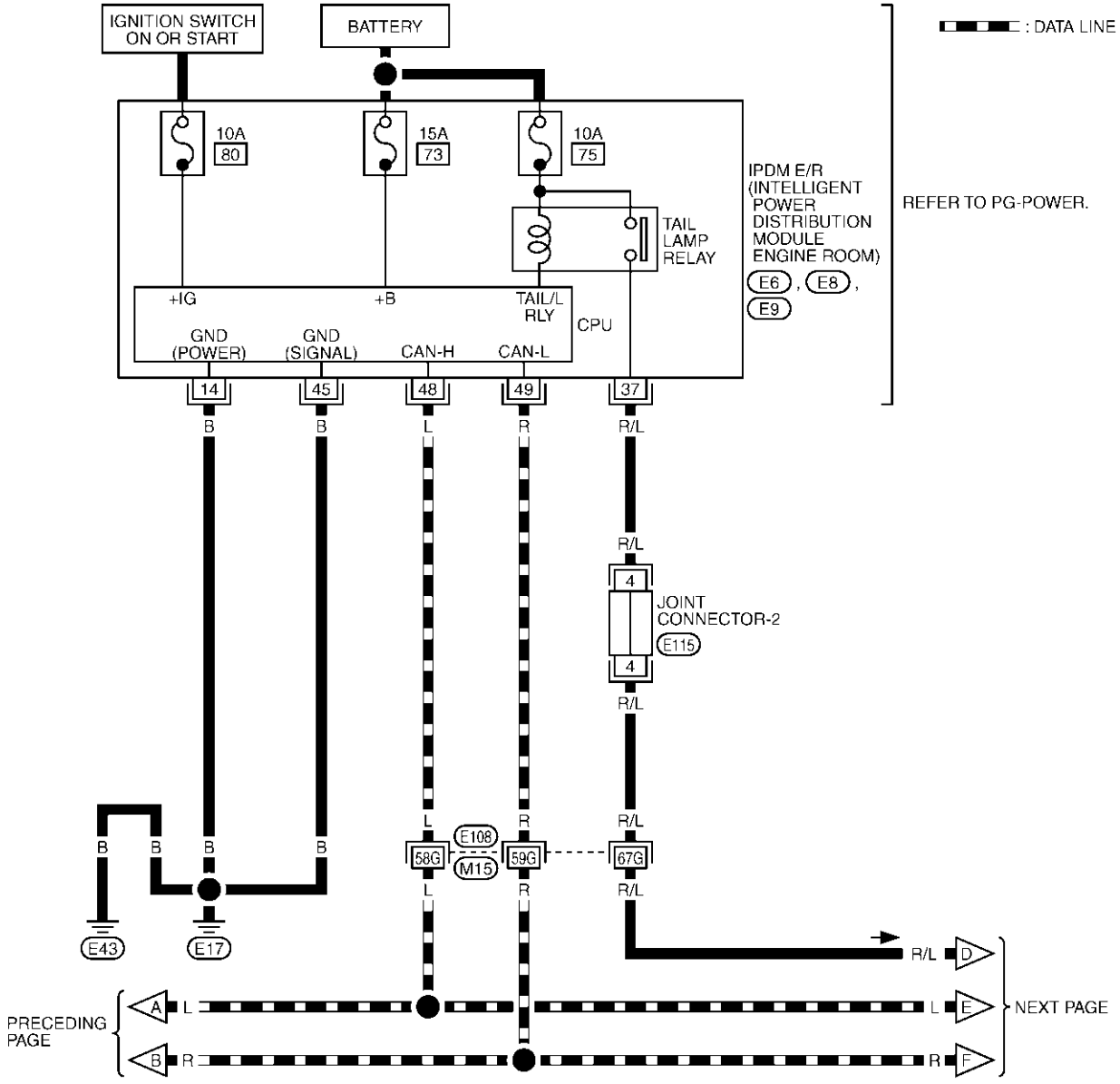
Wiring Diagram — ILL —

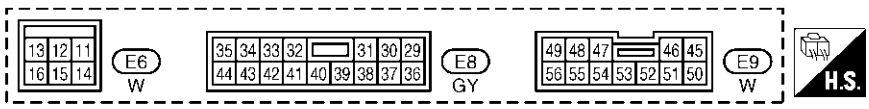
AKS003C1

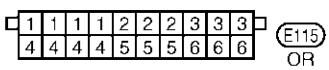


TKWT0628E

LT-ILL-02

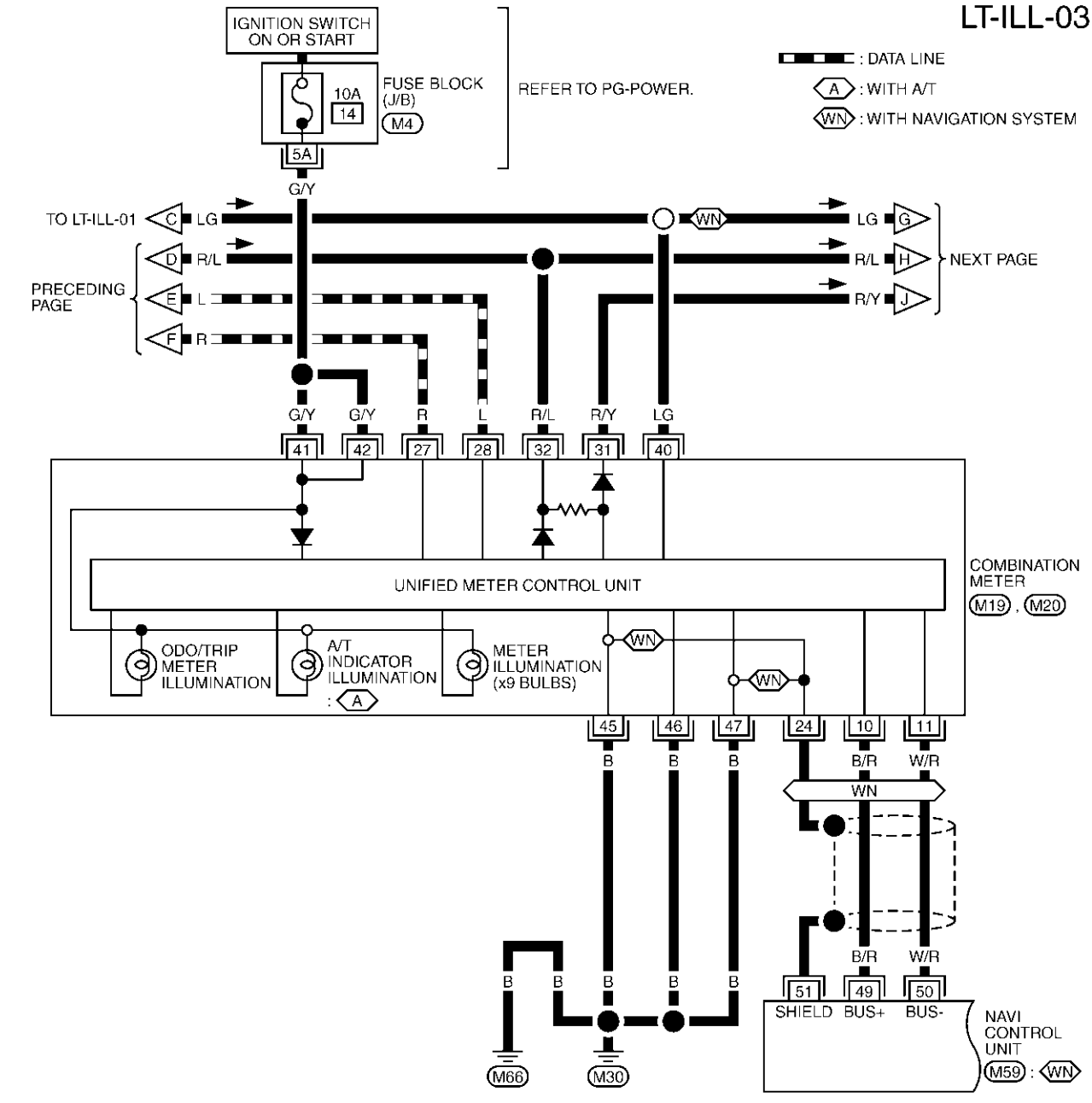


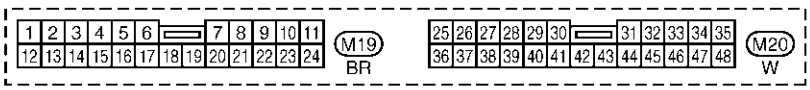


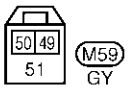


REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)

TKWT0629E



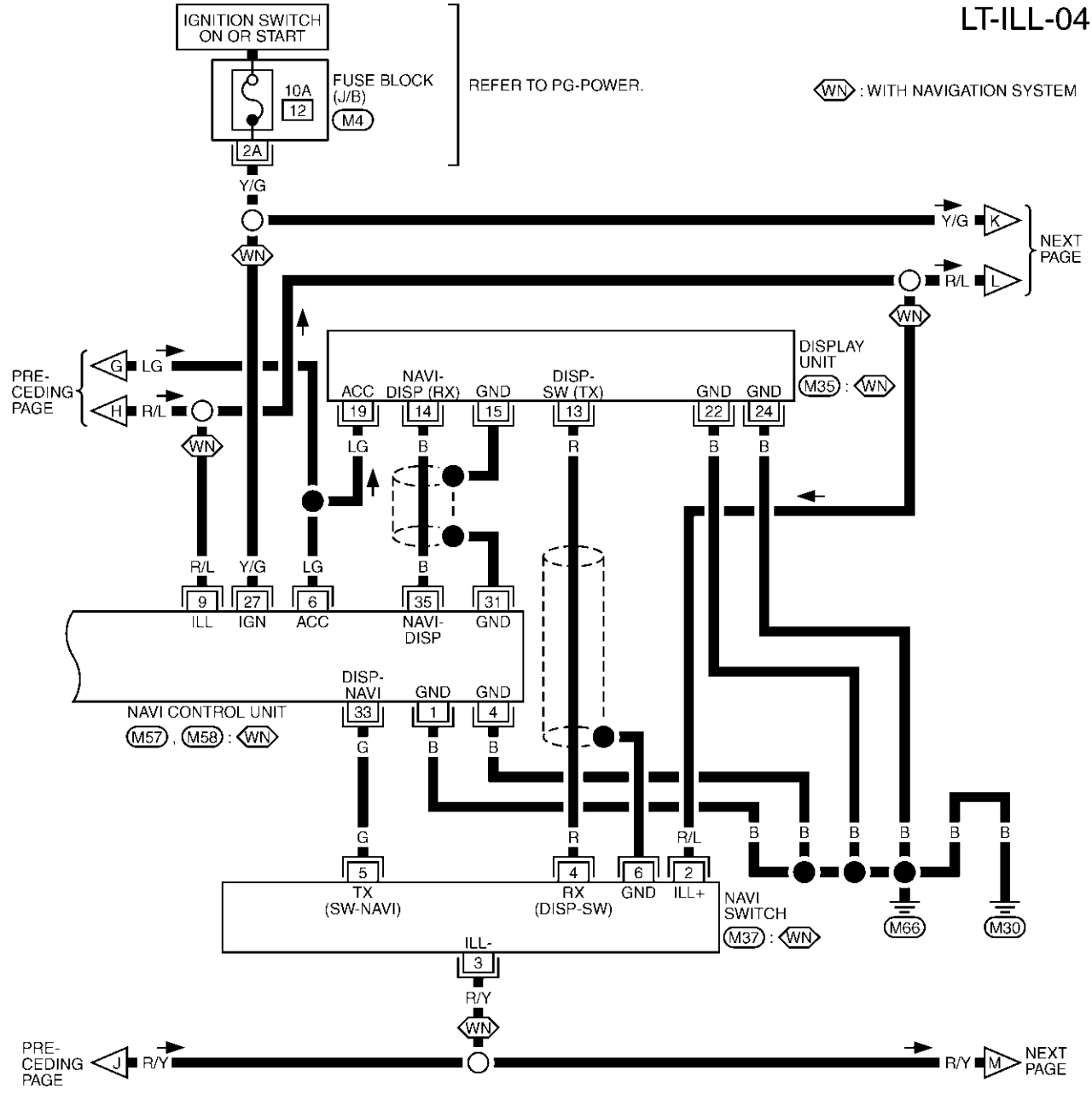


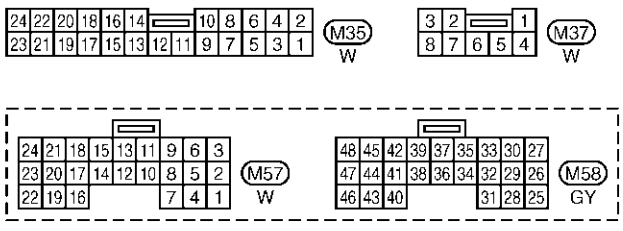


REFER TO THE FOLLOWING.
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT0630E

LT-ILL-04

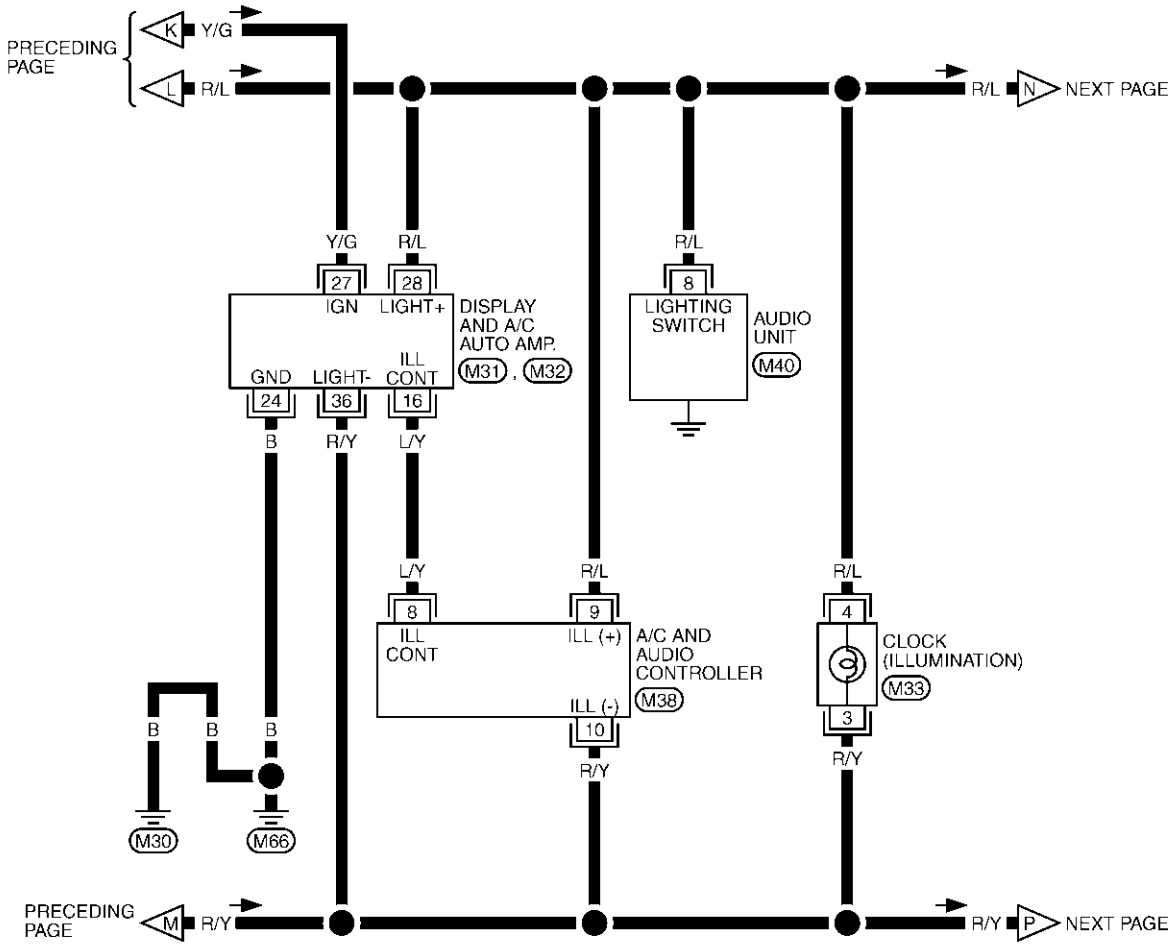


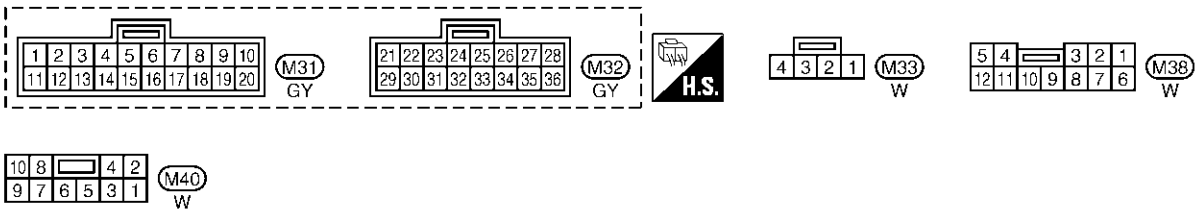


REFER TO THE FOLLOWING.
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT0631E

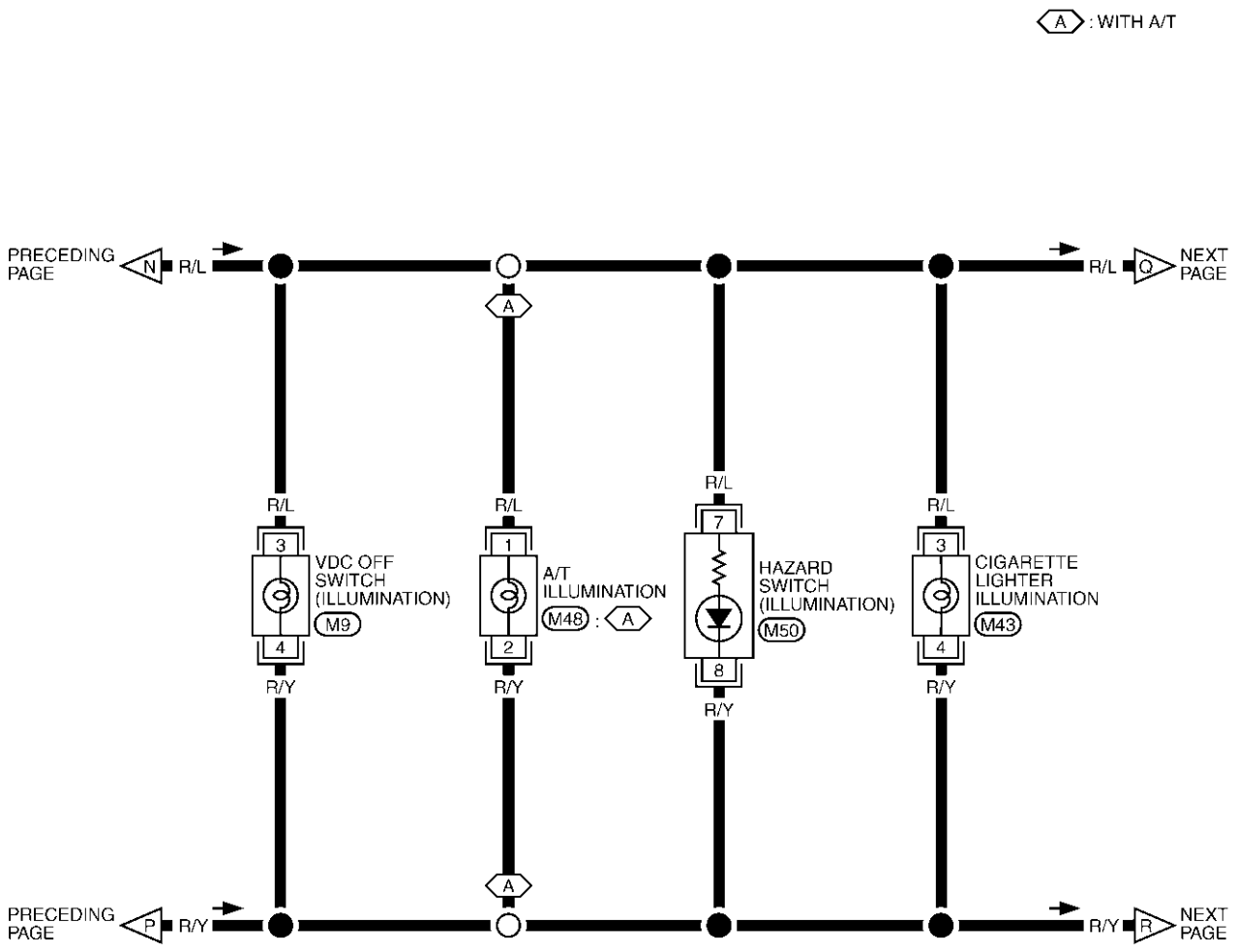
LT-ILL-05

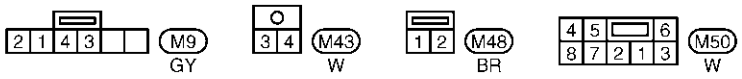




TKWT0632E

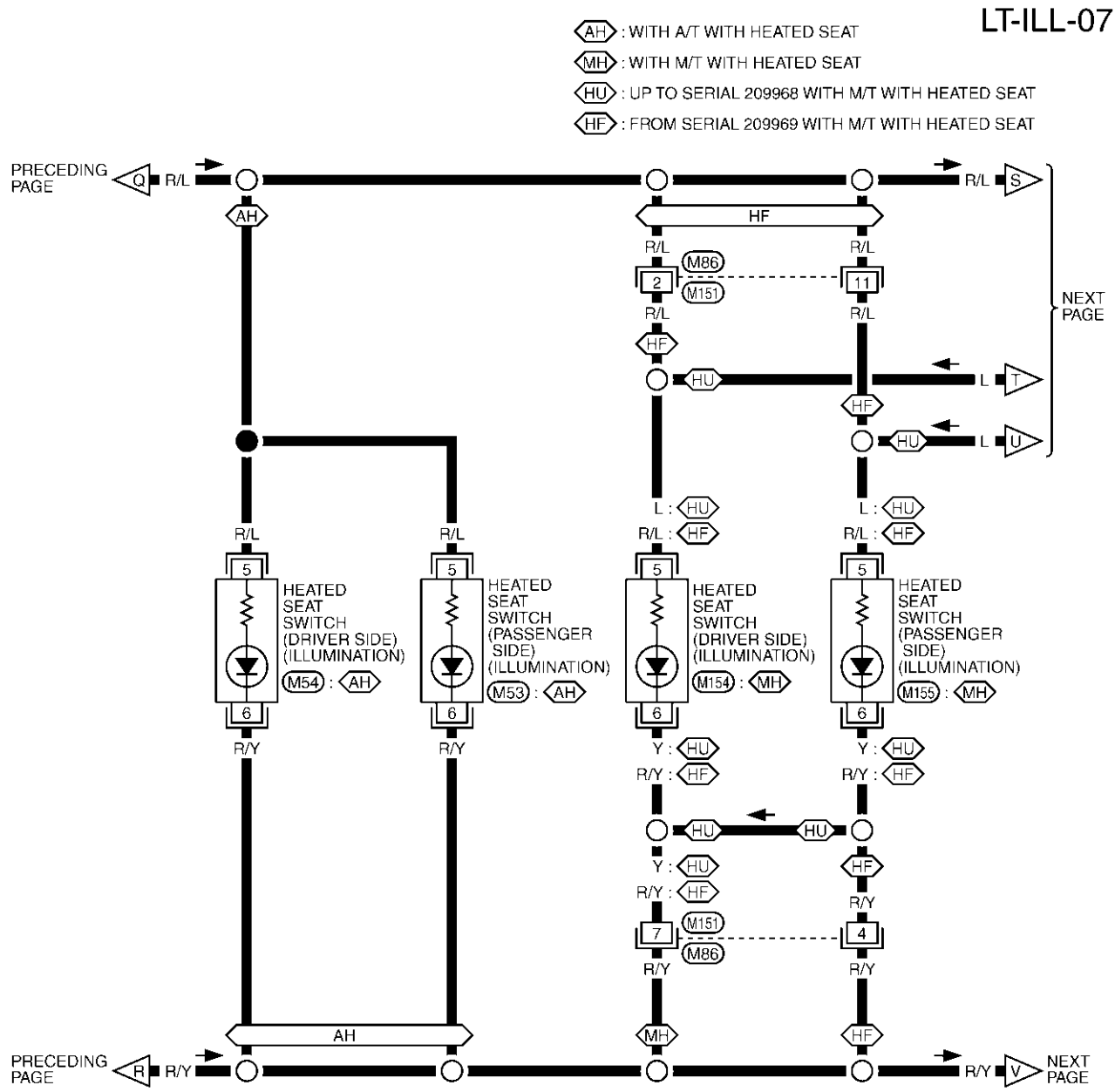
LT-ILL-06





TKWT0633E

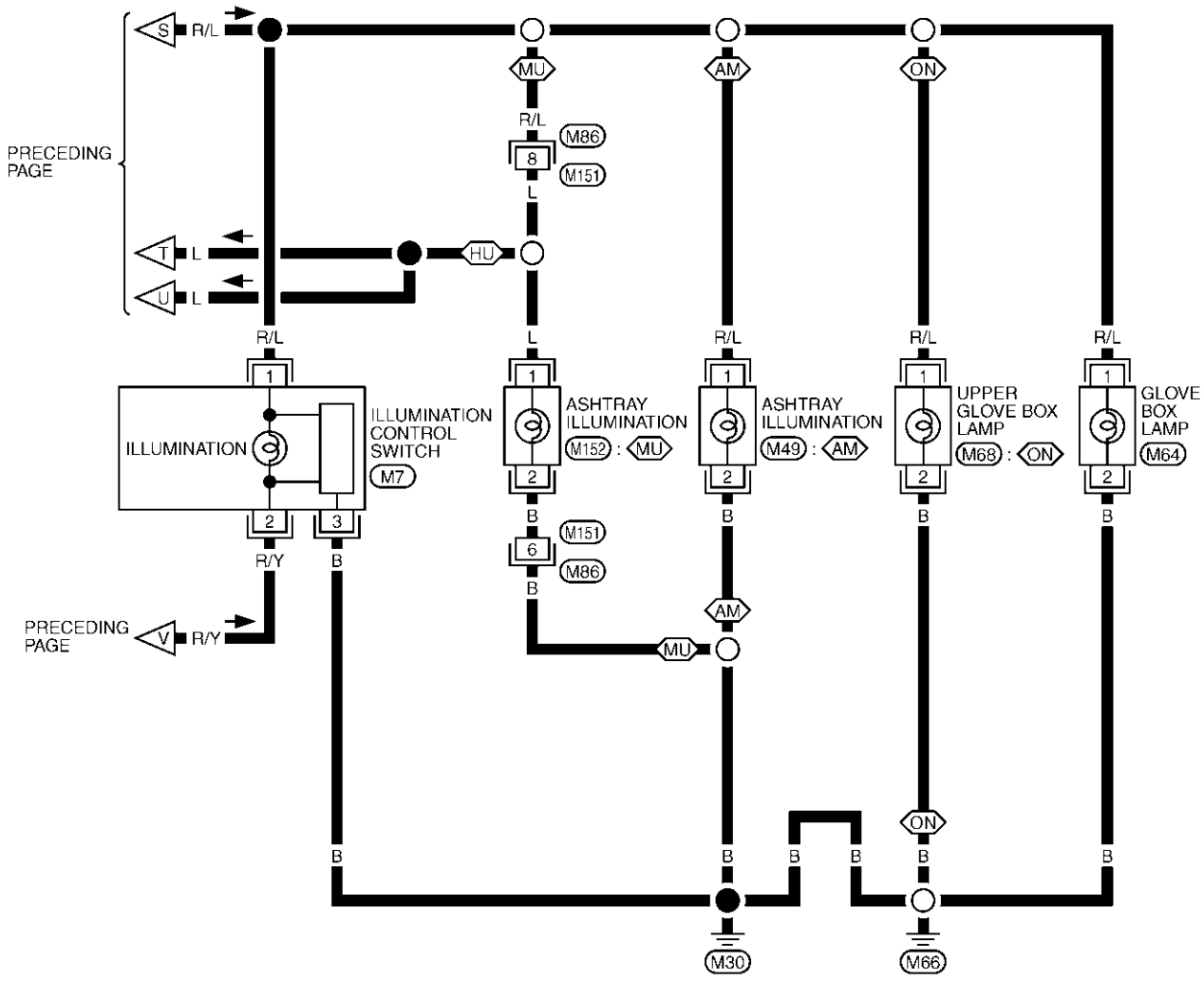
LT-ILL-07

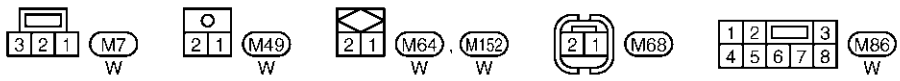


TKWM0853E

LT-ILL-08

AM : WITH A/T AND FROM SERIAL 209969 WITH M/T
MU : UP TO SERIAL 209968 WITH M/T
HU : UP TO SERIAL 209968 WITH M/T WITH HEATED SEAT
ON : WITHOUT NAVIGATION SYSTEM





TKWM0854E

Removal and Installation

AKS003C2

GLOVE BOX LAMP

Refer to LT-167, "Removal and Installation" in “GLOVE BOX LAMP”.

BULB SPECIFICATIONS

PFP:26297

Headlamp

AKS003C3

Item	Wattage (W)
Low (Xenon)	35 (D2R)
High/FOG	60/55 (HB2)

Exterior Lamp

AKS003C4

Item		Wattage (W)
Front combination lamp	Turn signal and parking lamp	21/5
	Parking lamp	5
Rear combination lamp	Stop/Tail lamp	LED
	Turn signal lamp	21
	Back-up lamp	18
	Rear side marker lamp	3.8
Front side marker lamp		3.8
License plate lamp		5
High-mounted stop lamp		LED

Interior Lamp/Illumination

AKS003C5

Item	Wattage (W)
Glove box lamp	1.4
Ignition key hole illumination lamp	1.4
Ashtray illumination lamp	1.4
Cigarette lighter illumination lamp	1.4
Map lamp	8
Step lamp	5
Trunk room lamp	3.4
Vanity mirror lamp	1.32