

LT
SECTION
LIGHTING SYSTEM

A
B
C
D
E
F
G
H
I
J
LT
L
M

CONTENTS

<p>PRECAUTIONS 5</p> <p> Precautions for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" 5</p> <p> General precautions for service operations 5</p> <p> Wiring Diagrams and Trouble Diagnosis 5</p> <p>HEADLAMP (FOR USA) 7</p> <p> Component Parts and Harness Connector Location... 7</p> <p> System Description 7</p> <p> OUTLINE 7</p> <p> COMBINATION SWITCH READING FUNCTION... 8</p> <p> EXTERIOR LAMP BATTERY SAVER CONTROL... 9</p> <p> AUTO LIGHT OPERATION 9</p> <p> VEHICLE SECURITY SYSTEM 9</p> <p> XENON HEADLAMP (IF EQUIPPED) 9</p> <p> CAN Communication System Description 9</p> <p> CAN Communication Unit 9</p> <p> TYPE 1 10</p> <p> TYPE 2 11</p> <p> Schematic 13</p> <p> Wiring Diagram — H/LAMP — 14</p> <p> Terminals and Reference Value for BCM 17</p> <p> Terminals and Reference Values for IPDM E/R 17</p> <p> How to Proceed With Trouble Diagnosis 18</p> <p> Preliminary Inspection 18</p> <p> CHECK POWER SUPPLY AND GROUND CIRCUIT 18</p> <p> CONSULT-II Function 19</p> <p> CONSULT-II BASIC OPERATION 19</p> <p> WORK SUPPORT 20</p> <p> DATA MONITOR 20</p> <p> ACTIVE TEST 21</p> <p> Headlamp HI Does Not Illuminate (Both Sides) 21</p> <p> Headlamp HI Does Not Illuminate (One Side) 23</p> <p> High Beam Indicator Lamp Does Not Illuminate ... 24</p> <p> Headlamp LO Does Not Illuminate (Both Sides) ... 24</p> <p> Headlamp LO Does Not Illuminate (One Side) 26</p> <p> Headlamps Do Not Turn OFF 27</p> <p> Aiming Adjustment 27</p> <p> PREPARATION BEFORE ADJUSTING 27</p>	<p> LOW BEAM AND HIGH BEAM 28</p> <p> ADJUSTMENT USING AN ADJUSTMENT SCREEN (LIGHT/DARK BORDERLINE) 28</p> <p> Bulb Replacement 28</p> <p> HEADLAMP (UPPER) LOW BEAM (XENON) ... 28</p> <p> HEADLAMP (UPPER) LOW BEAM (HALOGEN).. 28</p> <p> HEADLAMP (LOWER) HIGH BEAM/FOG LAMP.. 30</p> <p> PARKING LAMPS (CLEARANCE LAMPS) 30</p> <p> FRONT TURN SIGNAL LAMP 30</p> <p> Removal and Installation 30</p> <p> REMOVAL 30</p> <p> INSTALLATION 31</p> <p> Disassembly 31</p> <p> Assembly 32</p> <p> Servicing to Replace Headlamps When Damaged.. 32</p> <p> REMOVAL AND INSTALLATION 32</p> <p>HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM - 33</p> <p> Component Parts and Harness Connector Location.. 33</p> <p> System Description 33</p> <p> HEADLAMP OPERATION 34</p> <p> COMBINATION SWITCH READING FUNCTION.. 35</p> <p> EXTERIOR LAMP BATTERY SAVER CONTROL.. 35</p> <p> AUTO LIGHT OPERATION 35</p> <p> DAYTIME LIGHT OPERATION 35</p> <p> OPERATION 36</p> <p> XENON HEADLAMP (IF EQUIPPED) 36</p> <p> CAN Communication System Description 36</p> <p> CAN Communication Unit 37</p> <p> TYPE 1 37</p> <p> TYPE 2 39</p> <p> Schematic 41</p> <p> Wiring Diagram — DTRL — 42</p> <p> Terminals and Reference Value for Daytime Light Control Unit 47</p> <p> Terminals and Reference Values for BCM 47</p> <p> Terminals and Reference Values for IPDM E/R 47</p> <p> How to Proceed With Trouble Diagnosis 48</p> <p> Preliminary Inspection 48</p> <p> CHECK POWER SUPPLY AND GROUND CIR-</p>
---	---

CUIT	48	Terminals and Reference Values for IPDM E/R	92
CONSULT-II Function	50	How to Proceed With Trouble Diagnosis	92
CONSULT-II BASIC OPERATION	50	Preliminary Inspection	93
WORK SUPPORT	51	CHECK POWER SUPPLY AND GROUND CIR- CUIT	93
DATA MONITOR	51	CONSULT-II Function	93
ACTIVE TEST	52	Front Fog Lamps Does Not Illuminate (Both Sides) (FOR USA)	94
Daytime Light Control Does Not Operate Properly..	52	Front Fog Lamp Does Not Illuminate (One Side) (FOR USA)	95
Headlamp HI Does Not Illuminate (Both Sides)	55	Front Fog Lamp Does Not Illuminate (Both Sides) (FOR CANADA)	96
RH HI Does Not Illuminate But RH LO Illuminates..	56	LH Front Fog Lamp Does Not Illuminate (FOR CAN- ADA)	97
LH HI Does Not Illuminate But LH LO Illuminates..	58	RH Front Fog Lamp Does Not Illuminate (FOR CAN- ADA)	100
Headlamp LO Does Not Illuminate (Both Sides) ...	59	Bulb Replacement	100
RH LO Does Not Illuminate But RH HI Illuminates..	61	TURN SIGNAL AND HAZARD WARNING LAMPS.101	
LH LO Does Not Illuminate But LH HI Illuminates..	62	System Description	101
Aiming Adjustment	63	TURN SIGNAL OPERATION	101
Bulb Replacement	63	HAZARD LAMP OPERATION	101
Removal and Installation	63	REMOTE KEYLESS ENTRY SYSTEM OPERA- TION	102
Disassembly and Assembly	63	COMBINATION SWITCH READING FUNCTION	102
AUTO LIGHT SYSTEM	64	CAN Communication System Description	103
Component Parts and Harness Connector Location..	64	CAN Communication Unit	103
System Description	64	TYPE 1	103
OUTLINE	64	TYPE 2	105
COMBINATION SWITCH READING FUNCTION..	65	Schematic	107
EXTERIOR LAMP BATTERY SAVER CONTROL..	65	Wiring Diagram — TURN —	108
SHUT OFF DELAY	65	Terminals and Reference Value for BCM	111
CAN Communication System Description	65	How to Proceed With Trouble Diagnosis	111
CAN Communication Unit	65	Preliminary Inspection	112
TYPE 1	66	CHECK POWER SUPPLY AND GROUND CIR- CUIT	112
TYPE 2	67	CONSULT-II Function	112
Major Components and Functions	69	CONSULT-II BASIC OPERATION	113
Schematic	70	DATA MONITOR	113
Wiring Diagram — AUTO/L —	71	ACTIVE TEST	114
Terminals and Reference Value for BCM	74	Turn Signal Lamp Does Not Operate	114
Terminals and Reference Values for IPDM E/R	75	Hazard Warning Lamp Does Not Operate But Turn Signal Lamp Operate	115
How to Proceed With Trouble Diagnosis	75	Turn Signal Indicator Lamp Does Not Operate	117
Preliminary Inspection	75	Bulb Replacement (Front Turn Signal Lamp)	117
SETTING CHANGE FUNCTIONS	75	Bulb Replacement (Rear Turn Signal Lamp)	117
CHECK POWER SUPPLY AND GROUND CIR- CUIT	75	Removal and Installation of Front Turn Signal Lamp	117
CONSULT-II Function	76	Removal and Installation of Rear Turn Signal Lamp	117
CONSULT-II BASIC OPERATION	77	LIGHTING AND TURN SIGNAL SWITCH	118
WORK SUPPORT	77	Removal and Installation	118
DATA MONITOR	78	REMOVAL	118
ACTIVE TEST	79	INSTALLATION	118
Trouble Diagnosis Chart by Symptom	79	HAZARD SWITCH	119
Lighting Switch Inspection	79	Removal and Installation (M/T)	119
Optical sensor System Inspection	80	REMOVAL	119
FRONT FOG LAMP	83	INSTALLATION	119
System Description	83	Removal and Installation (A/T)	119
OUTLINE	83	REMOVAL	119
COMBINATION SWITCH READING FUNCTION..	84	INSTALLATION	119
EXTERIOR LAMP BATTERY SAVER CONTROL..	84	COMBINATION SWITCH	120
CAN Communication System Description	84		
CAN Communication Unit	84		
TYPE 1	85		
TYPE 2	86		
Wiring Diagram — F/FOG —	88		
FOR USA	88		
FOR CANADA	90		
Terminals and Reference Value for BCM	92		

Combination Switch Reading Function	120	TAIL LAMP	154
CONSULT-II Function	122	Removal and Installation	154
CONSULT-II BASIC OPERATION	122	FRONT SIDE MARKER LAMP	154
DATA MONITOR	122	LICENSE PLATE LAMP	154
Wiring Diagram—COMBSW—	124	FRONT TURN SIGNAL (PARKING) LAMP	154
Combination Switch Inspection According to Self-Diagnostic Results	125	TAIL LAMP	154
Malfunctioning Operation of Lamps and Wipers ..	129	REAR COMBINATION LAMP	155
Removal and Installation	131	Bulb Replacement	155
STOP LAMP	132	REAR FENDER SIDE (REAR TURN SIGNAL LAMP BULB)	155
Wiring Diagram — STOP/L —	132	TRUNK LID SIDE (BACK-UP LAMP)	155
Bulb Replacement for High-mounted Stop Lamp ..	133	Removal and Installation	155
WITH REAR SPOILER	133	REMOVAL	155
WITHOUT REAR SPOILER	133	INSTALLATION	156
Bulb Replacement for Rear Combination Lamp (Stop Lamp)	133	VANITY MIRROR LAMP	157
Removal and Installation for High-Mounted Stop Lamp	133	Bulb Replacement	157
WITH REAR SPOILER	133	MAP LAMP	158
WITHOUT SPOILER	133	Bulb Replacement of Map Lamp	158
Removal and Installation for Rear Combination Lamp (Stop Lamp)	133	Removal and Installation of Map Lamp	158
STEP LAMP	134	TRUNK ROOM LAMP	159
Bulb Replacement	134	Wiring Diagram — INT/L —	159
Removal and Installation	134	Bulb Replacement, Removal and Installation of Trunk Room Lamp	160
REMOVAL	134	PERSONAL LAMP	161
INSTALLATION	134	Bulb Replacement	161
BACK-UP LAMP	135	Removal and Installation	161
Wiring Diagram — BACK/L —	135	IGNITION KEY HOLE ILLUMINATION	162
A/T	135	Removal and Installation	162
M/T	136	GLOVE BOX LAMP	163
Bulb Replacement	137	Removal and Installation	163
Removal and Installation	137	ASHTRAY ILLUMINATION	164
PARKING, LICENSE PLATE AND TAIL LAMPS ..	138	Bulb Replacement, Removal and Installation (M/T) ..	164
System Description	138	Bulb Replacement, Removal and Installation (A/T) ..	164
OPERATION BY LIGHTING SWITCH	138	CIGARETTE LIGHTER ILLUMINATION	165
COMBINATION SWITCH READING FUNCTION ..	139	Removal and Installation	165
EXTERIOR LAMP BATTERY SAVER CONTROL ..	139	INTERIOR ROOM LAMP	166
CAN Communication System Description	139	System Description	166
CAN Communication Unit	139	POWER SUPPLY AND GROUND	166
TYPE 1	140	SWITCH OPERATION	167
TYPE 2	141	MAP LAMP TIMER OPERATION	167
Schematic	143	INTERIOR LAMP BATTERY SAVER CONTROL ..	168
Wiring Diagram — TAIL/L —	144	Component Parts and Harness Connector Location ..	168
Terminals and Reference Value for BCM	147	Schematic	169
Terminals and Reference Values for IPDM E/R ..	147	Wiring Diagram — ROOM/L —	170
How to Proceed With Trouble Diagnosis	147	Terminals and Reference Value for BCM	176
Preliminary Inspection	148	How to Proceed With Trouble Diagnosis	176
CHECK POWER SUPPLY AND GROUND CIRCUIT	148	Preliminary Inspection	177
CONSULT-II Function	148	CHECK POWER SUPPLY AND GROUND CIRCUIT	177
Parking, License Plate and Tail Lamps Do Not Illuminate	149	CONSULT-II Function	178
Parking, License Plate and Tail Lamps Do Not Turn OFF (After Approx. 10 Minutes)	153	CONSULT-II BASIC OPERATION	178
Bulb Replacement	153	WORK SUPPORT	179
FRONT SIDE MARKER LAMP	153	DATA MONITOR	179
LICENSE PLATE LAMP	153	ACTIVE TEST	180
FRONT TURN SIGNAL (PARKING) LAMP	154	MAP Lamp Control Does Not Operate	180
		Ignition Key Hole Illumination Control Does Not Operate	181
		Step Lamp Does Not Operate	183
		All Interior Room Lamps Do Not Operate	184

A
B
C
D
E
F
G
H
I
J
LT
L
M

Bulb Replacement	185	CAN Communication Unit	188
MAP LAMP	185	TYPE 1	188
Removal and Installation	185	TYPE 2	190
MAP LAMP	185	Schematic	192
IGNITION KEY HOLE ILLUMINATION LAMP ..	185	Wiring Diagram — ILL —	193
ILLUMINATION	186	Removal and Installation	201
System Description	186	GLOVE BOX LAMP	201
ILLUMINATION OPERATION BY LIGHTING		BULB SPECIFICATIONS	202
SWITCH	186	Headlamp	202
EXTERIOR LAMP BATTERY SAVER CONTROL	187	Exterior Lamp	202
CAN Communication System Description	188	Interior Lamp/Illumination	202

PRECAUTIONS

PRECAUTIONS

PFP:00011

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

AKS008YH

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.

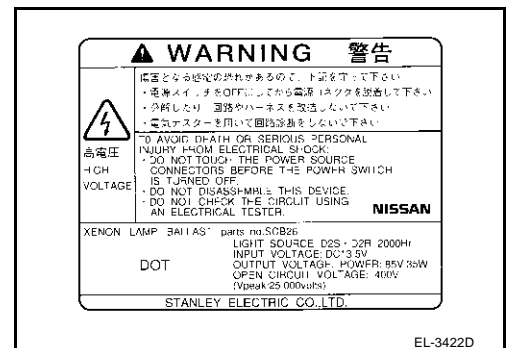
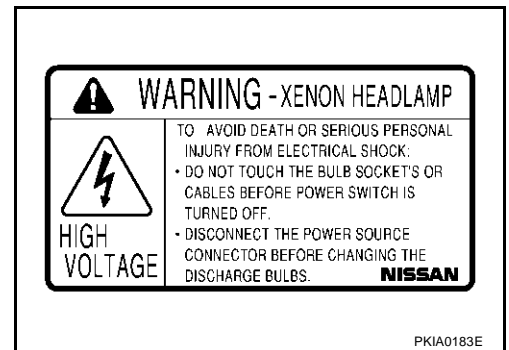
WARNING:

- 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.

General precautions for service operations

AKS0005S

- Never work with wet hands.
- Xenon headlamp includes high voltage generating part. Be sure to disconnect battery negative cable (negative terminal) or power fuse before removing, installing, or touching the xenon headlamp (including lamp bulb).
- Turn the lighting switch OFF before disconnecting and connecting the connector.
- When turning the xenon headlamp on and while it is illuminated, never touch the harness, bulb, and socket of the headlamp.
- When checking the headlamp on/off operation, check it on vehicle and with the power connected to the vehicle-side connector.
- Do not touch the headlamp bulb glass surface with bare hands or allow oil or grease to get on it. Do not touch the headlamp bulb just after the headlamp is turned off, because it is very hot.
- Install the xenon headlamp bulb socket correctly. If it is installed improperly, high-voltage leak or corona discharge may occur that can melt the bulb, connector, and housing. Do not illuminate the xenon headlamp bulb out of the headlamp housing. Doing so can cause fire and harm your eyes.
- When the bulb has burned out, wrap it in a thick vinyl bag and discard. Do not break the bulb.
- Leaving the bulb removed from the headlamp housing for a long period of time can deteriorate the performance of the lens and reflector (dirt, clouding). Always prepare a new bulb and have it on hand when replacing the bulb.
- When adjusting the headlamp aiming, turn the aiming adjustment screw only in the tightening direction. (If it is necessary to loosen the screw, first fully loosen the screw, and then turn it in the tightening direction.)
- Do not use organic solvent (paint thinner or gasoline) to clean lamps and to remove old sealant.



Wiring Diagrams and Trouble Diagnosis

AKS0005T

When you read wiring diagrams, refer to the following:

- Refer to [GI-14, "How to Read Wiring Diagrams"](#) in GI section.
- Refer to [PG-3, "POWER SUPPLY ROUTING CIRCUIT"](#) for power distribution in PG section.

PRECAUTIONS

When you perform trouble diagnosis, refer to the following:

- Refer to [GI-10, "HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSES"](#) in GI section.
- Refer to [GI-26, "How to Perform Efficient Diagnosis for an Electrical Incident"](#) in GI section.

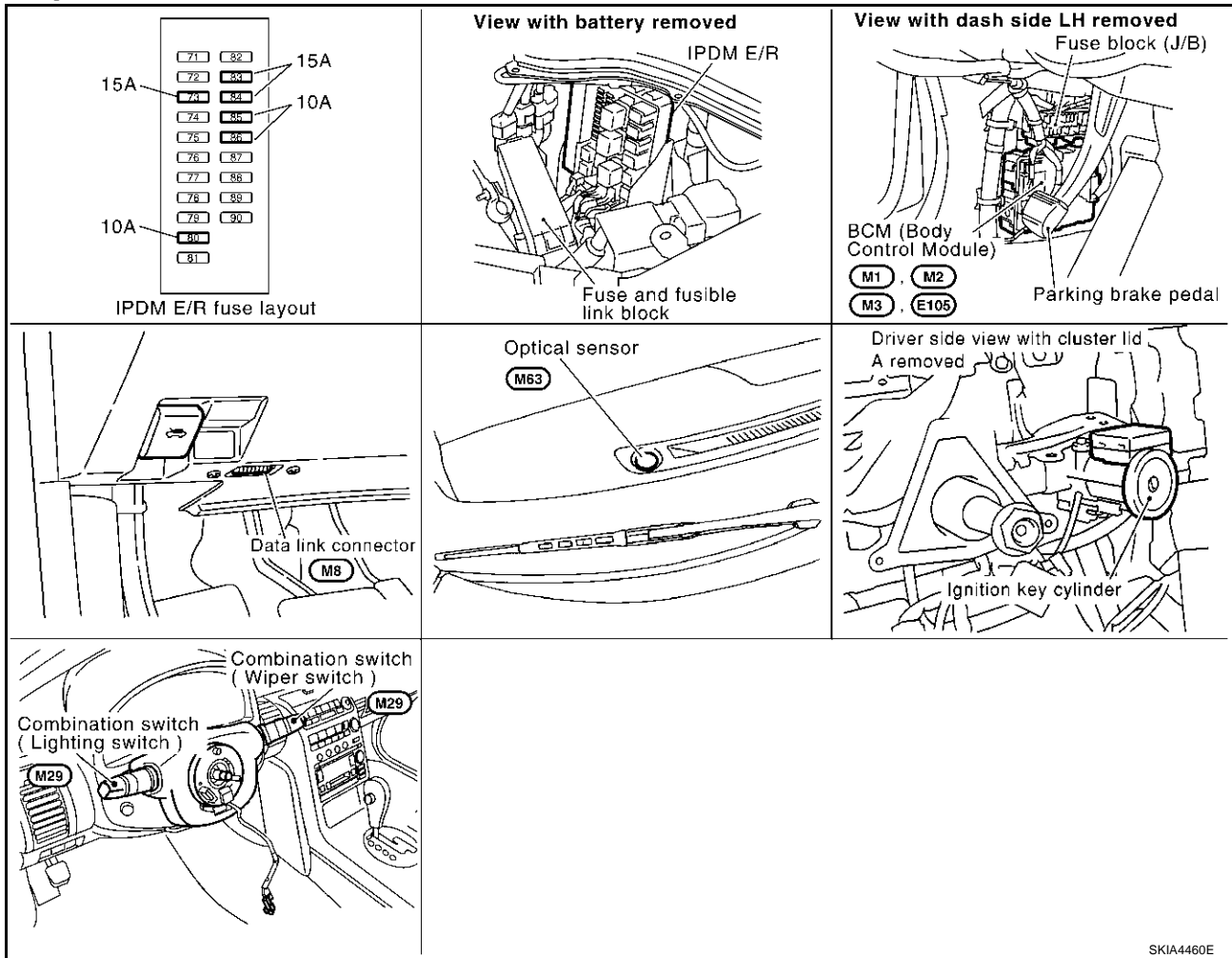
HEADLAMP (FOR USA)

HEADLAMP (FOR USA)

PFP:26010

Component Parts and Harness Connector Location

AKS005HI



System Description

AKS005HJ

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

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

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

A
B
C
D
E
F
G
H
I
J

LT

L
M

HEADLAMP (FOR USA)

- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)].

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

- to BCM (body control module) terminal 36
- through 10A fuse [No. 6, located in 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 receives input signal requesting the headlamps to illuminate. This input signal is communicated to the IPDM E/R across the CAN communication lines. The CPU in the IPDM E/R controls the headlamp low relay coil, which when energized, directs power

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

Ground is supplied at all times

- to headlamp RH terminal 5
- through grounds E17 and E43, and
- to headlamp LH terminal 5
- 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 receives input signal requesting the headlamp high beams to illuminate. This input signal is communicated to the IPDM E/R across the CAN communication lines. The CPU in the IPDM E/R controls the headlamp high relay coil, which when energized, directs power

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

Ground is supplied

- to headlamp RH terminal 8
- through grounds E17 and E43, and
- to headlamp LH terminal 8
- 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-120, "Combination Switch Reading Function"](#)

HEADLAMP (FOR USA)

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-64, "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-97, "VEHICLE SECURITY \(THEFT WARNING\) SYSTEM"](#).

XENON HEADLAMP (IF EQUIPPED)

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

AKS005HK

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

AKS00C43

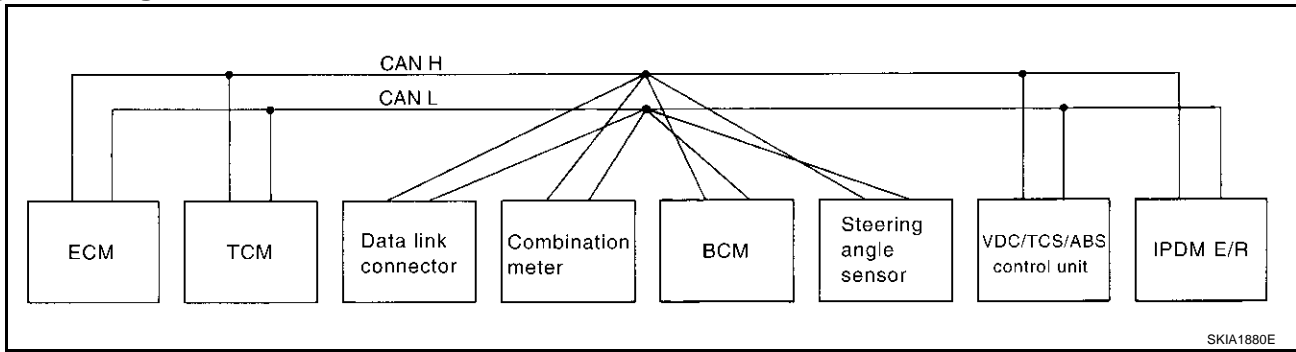
Body type	Sedan	
Axle	2WD	
Engine	VQ35DE	
Transmission	A/T	M/T
Brake control	VDC	
CAN communication unit		
ECM	×	×
TCM	×	
Data link connector	×	×
Combination meter	×	×
BCM	×	×
Steering angle sensor	×	×
VDC/TCS/ABS control unit	×	×
IPDM E/R	×	×
CAN communication type	LT-10, "TYPE 1"	LT-11, "TYPE 2"

×: Applicable

HEADLAMP (FOR USA)

TYPE 1

System diagram



Input/output Signal Chart

T: Transmit R: Receive

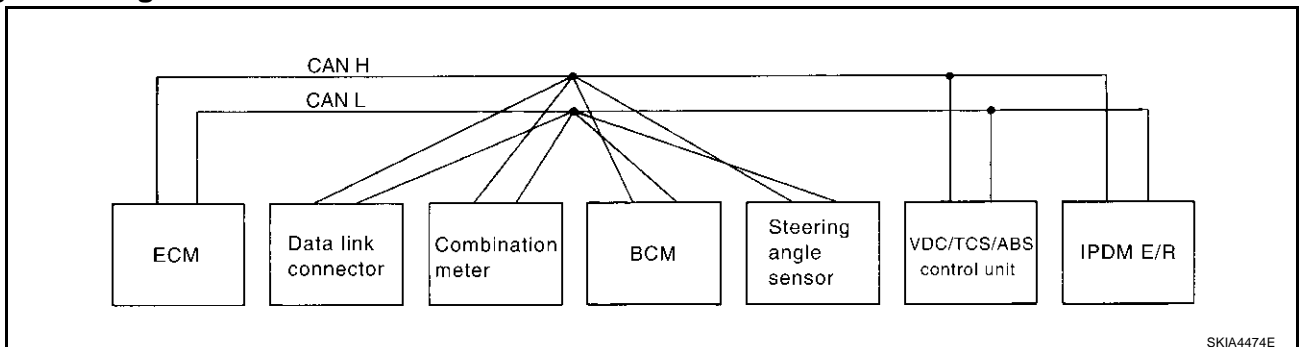
Signals	ECM	TCM	Combina- tion meter	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R
Engine torque signal	T	R					
Engine speed signal	T	R	R			R	
Engine coolant temperature signal	T	R	R				
Accelerator pedal position signal	T	R				R	
Closed throttle position signal	T	R					
Wide open throttle position signal	T	R					
Battery voltage signal	T	R					
Stop lamp switch signal		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	
A/C 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	R						T
Position lights request signal			R	T			R
Low beam request signal				T			R
Low beam status signal	R						T
High beam request signal			R	T			R
High beam status signal	R						T
Front fog lights request signal				T			R
Vehicle speed signal	R	R	R	R		T	
Sleep request 1 signal			R	T			
Sleep request 2 signal				T			R
Wake up request 1 signal			R	T			R

HEADLAMP (FOR USA)

Signals	ECM	TCM	Combina- tion meter	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R
Wake up request 2 signal			R	T			R
Door switch signal (without naviga- tion 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			
ASCD SET lamp signal	T		R				
ASCD CRUISE lamp signal	T		R				
ASCD OD cancel request signal	T	R					
ASCD operation signal	T	R					
Output shaft 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 sig- nal	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	

TYPE 2

System diagram



HEADLAMP (FOR USA)

Input/output Signal Chart

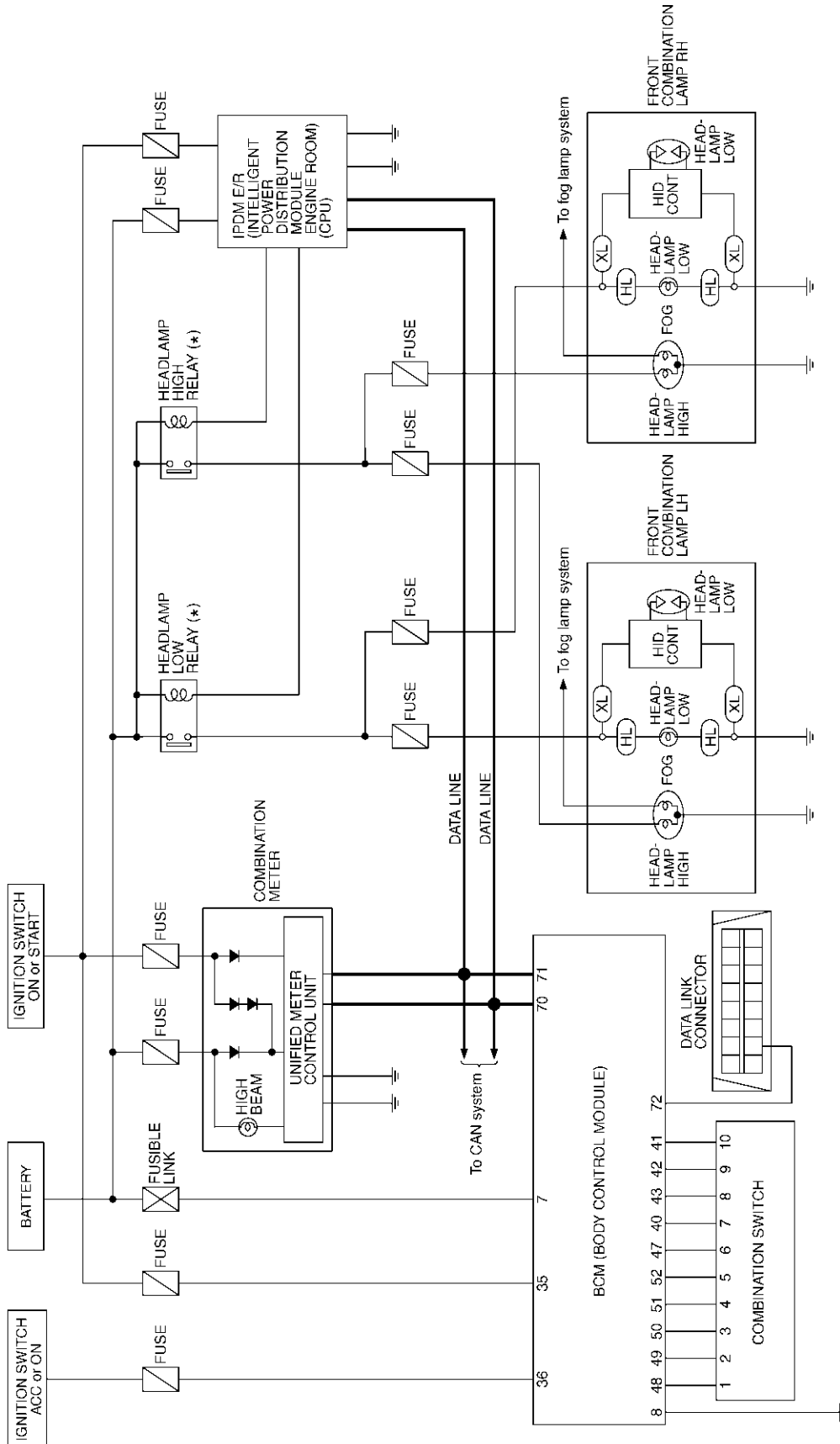
T: Transmit R: Receive

Signals	ECM	Combina- tion 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				
A/C 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			
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	

HEADLAMP (FOR USA)

Schematic

AKS005HM



(HL) : With halogen bulb headlamp
 (XL) : With xenon bulb headlamp

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

A
B
C
D
E
F
G
H
I
J
LT
L
M

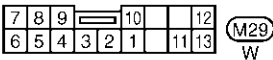
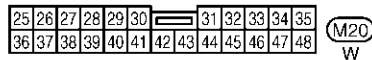
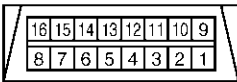
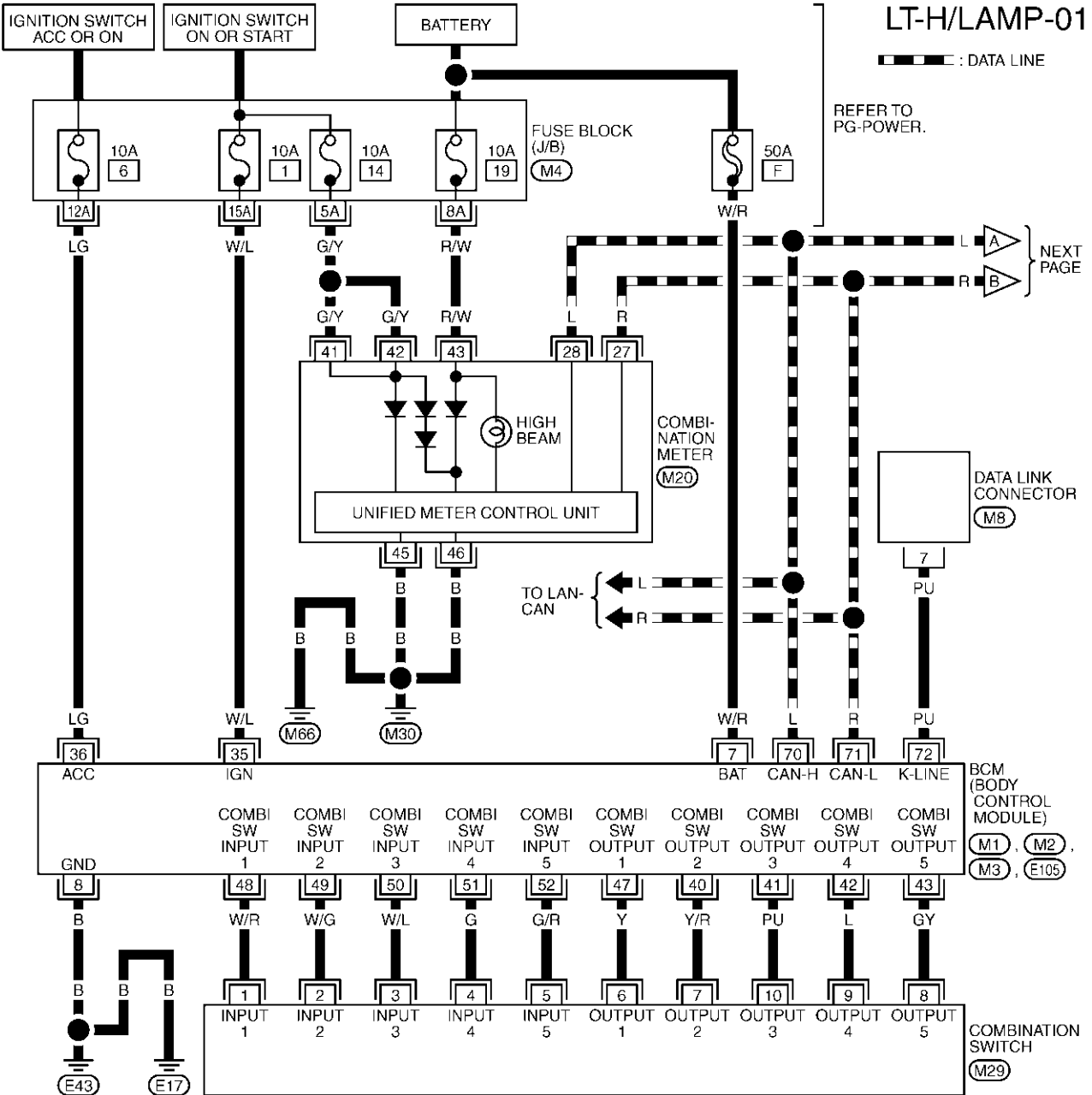
HEADLAMP (FOR USA)

AKS005HN

Wiring Diagram — H/LAMP —

LT-H/LAMP-01

— : DATA LINE



REFER TO THE FOLLOWING.

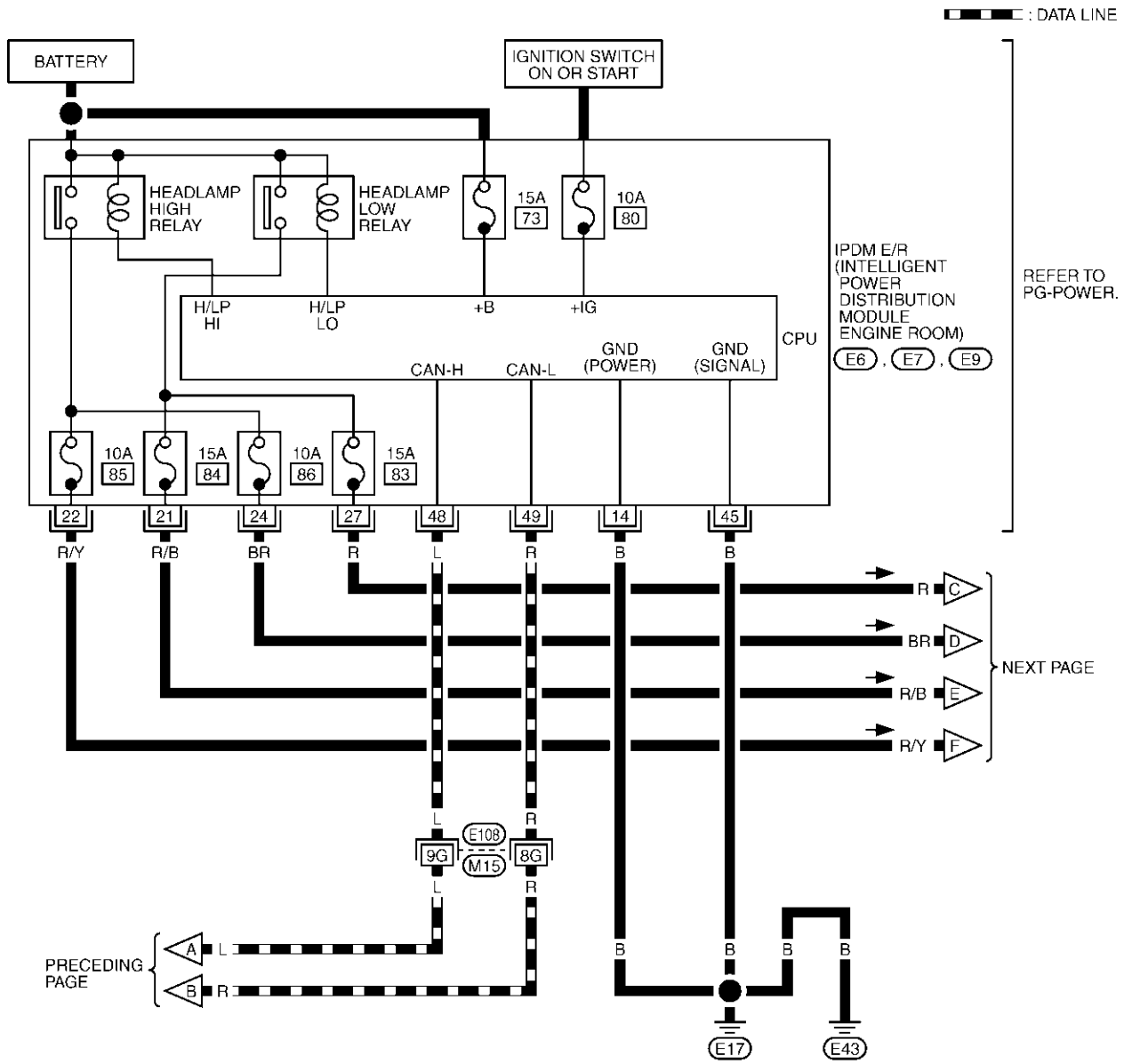
(M4) - FUSE BLOCK-JUNCTION BOX (J/B)

(M1), (M2), (M3), (E105) - ELECTRICAL UNITS

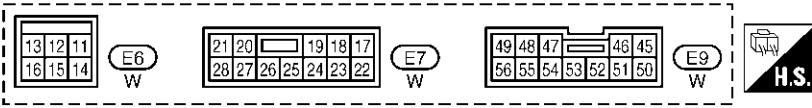
TKWT0298E

HEADLAMP (FOR USA)

LT-H/LAMP-02

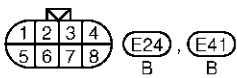
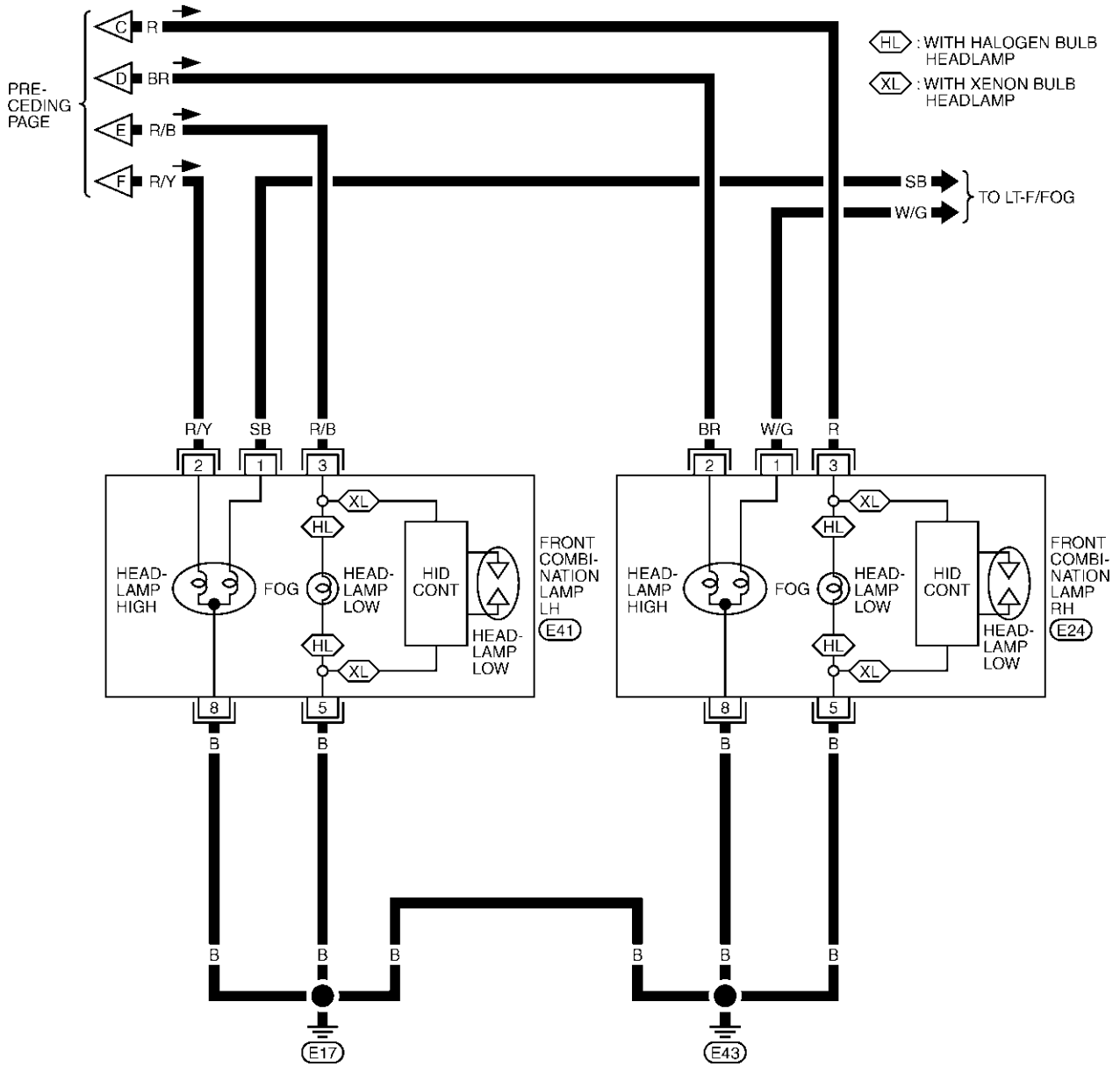


A
B
C
D
E
F
G
H
I
J
K
L
M



HEADLAMP (FOR USA)

LT-H/LAMP-03

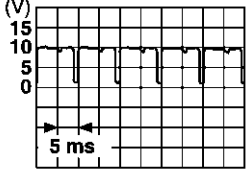


TKWT0688E

HEADLAMP (FOR USA)

Terminals and Reference Value for BCM

AKS005HO

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	
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	—	—	—

SKIA1119J

Terminals and Reference Values for IPDM E/R

AKS005HP

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	—	—	—	

HEADLAMP (FOR USA)

AKS005HQ

How to Proceed With Trouble Diagnosis

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

AKS005HR

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown fuses.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	F
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
IPDM E/R	Battery	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-3, "POWER SUPPLY ROUTING CIRCUIT"](#) .

2. CHECK POWER SUPPLY CIRCUIT

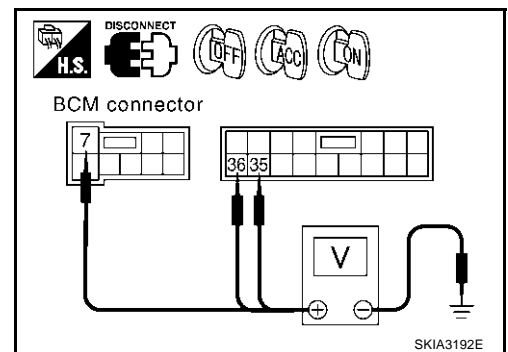
1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check voltage between BCM harness connector and ground.

Terminals		(-)	Ignition switch position		
Connector	Terminal (Wire color)		OFF	ACC	ON
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.



HEADLAMP (FOR USA)

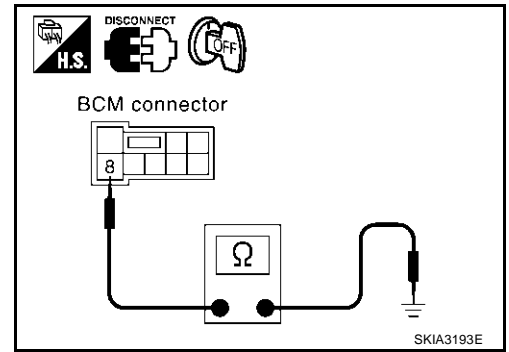
3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

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

OK or NG

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



AKS005HS

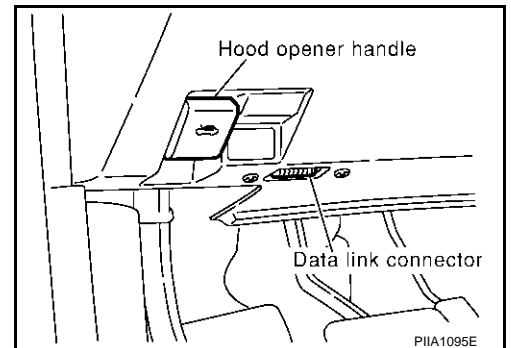
CONSULT-II Function

CONSULT-II performs the following functions communicating with BCM.

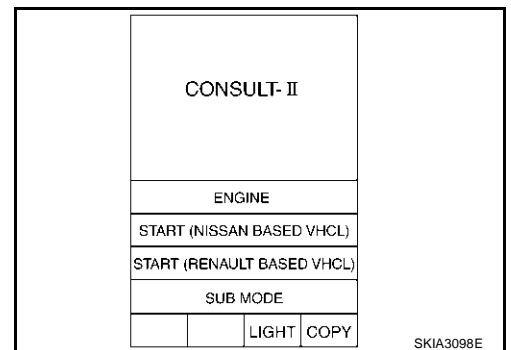
BCM diagnosis part	Check item, diagnosis mode	Description
HEAD LAMP	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
BCM C/U	CAN DIAG SUPPORT MNTR	The result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

CONSULT-II BASIC OPERATION

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

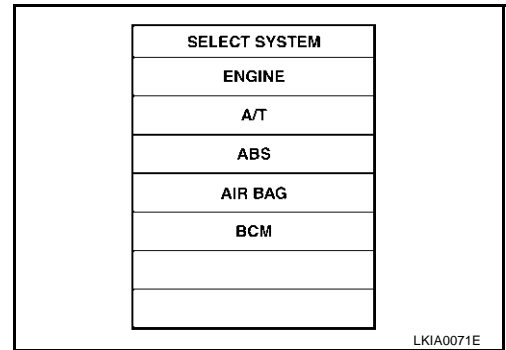


- Touch "START (NISSAN BASED VHCL)".

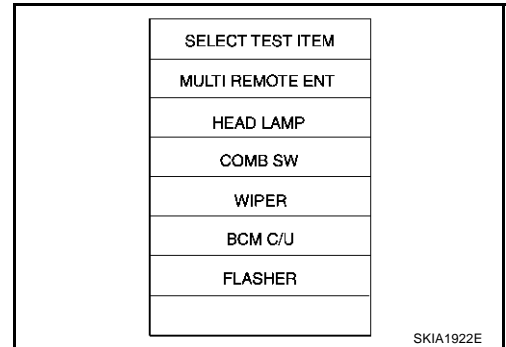


HEADLAMP (FOR USA)

3. Touch "BCM" on "SELECT SYSTEM" screen.
If "BCM" is not indicated, refer to [GI-38, "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".

HEADLAMP (FOR USA)

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}	"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: ON/Others 1: 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	"ON/OFF" Displays status of the rear doors as judged from the rear door switch signal. (Door is open: ON/Door is closed: 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:

Vehicles without auto light system display this item, 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)

AKS005HT

1. INSPECTION 1: IPDM E/R AND HEADLAMPS

1. Start auto active test. Refer to [PG-21, "Auto Active Test"](#).
2. Check whether headlamp HI operates.

OK or NG

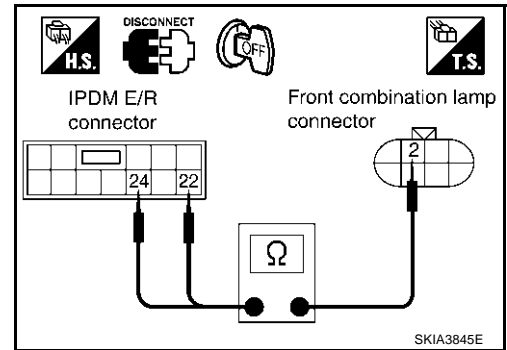
- OK >> GO TO 5.
NG >> GO TO 2.

HEADLAMP (FOR USA)

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)	



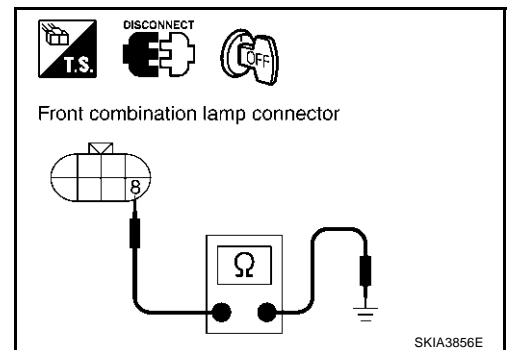
OK or NG

- 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	8 (B)		Yes
LH	E41			



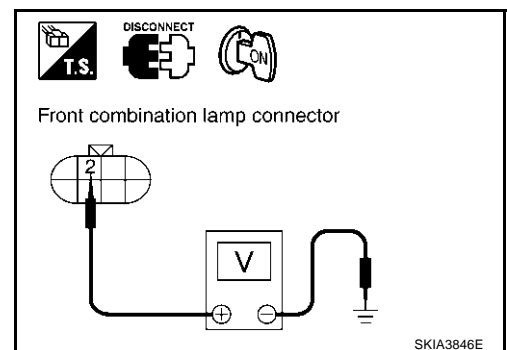
OK or NG

- 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-21, "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 (+)			(-)	
Connector	Terminal (Wire color)			
RH	E24	2 (BR)		Ground
LH	E41	2 (R/Y)		



OK or NG

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

HEADLAMP (FOR USA)

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-16, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#).

OPEN DETECT 1 - 5 >> Combination switch system malfunction. Refer to [LT-125, "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-23, "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)

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

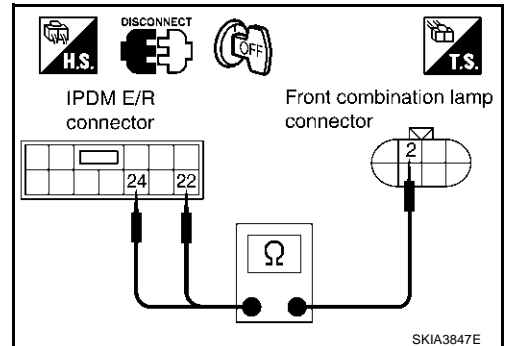
1. Disconnect IPDM E/R connector and front combination lamp connector.
2. Check continuity between harness connector of IPDM E/R and harness connector of front combination lamp.

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)	

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.



HEADLAMP (FOR USA)

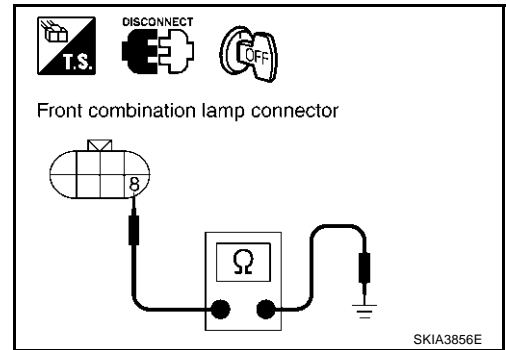
3. INSPECTION: HEADLAMPS AND GROUND

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

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

OK or NG

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



High Beam Indicator Lamp Does Not Illuminate

AKS005HV

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)

AKS005HW

1. INSPECTION 1: IPDM E/R AND HEADLAMPS

1. Start auto active test. Refer to [PG-21, "Auto Active Test"](#).
2. Check whether headlamp LO operates.

OK or NG

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

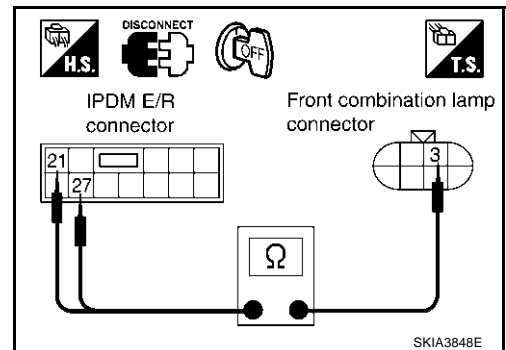
2. INSPECTION: IPDM E/R AND HEADLAMPS

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.



HEADLAMP (FOR USA)

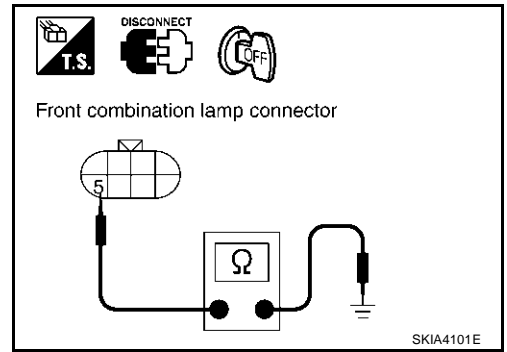
3. INSPECTION: HEADLAMPS AND GROUND

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

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

OK or NG

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



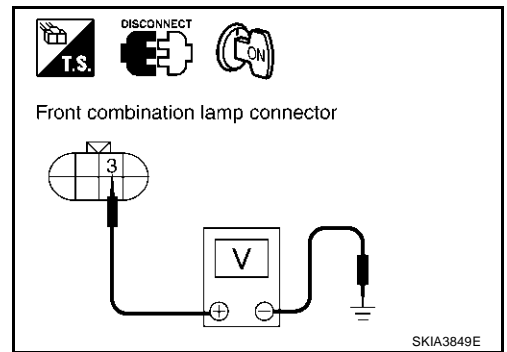
4. CHECK IPDM E/R

1. Connect IPDM E/R connector.
2. Start auto active test. Refer to [PG-21, "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 (+)				
Connector	Terminal (Wire color)		Ground	Battery voltage
RH	E24			
LH	E41			

OK or NG

- OK >>
 - Inspect headlamp bulbs. (Standard models)
 - Inspect headlamp harness and connectors, ballasts (HID control unit), and xenon bulbs. (Xenon models)
- 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-16, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#).
- OPEN DETECT 1 - 5 >> Combination Switch System malfunction. Refer to [LT-125, "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	

HEADLAMP (FOR USA)

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 to [BCS-23, "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-23, "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

Headlamp LO Does Not Illuminate (One Side)

AKS005HX

1. CHECK BULB

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

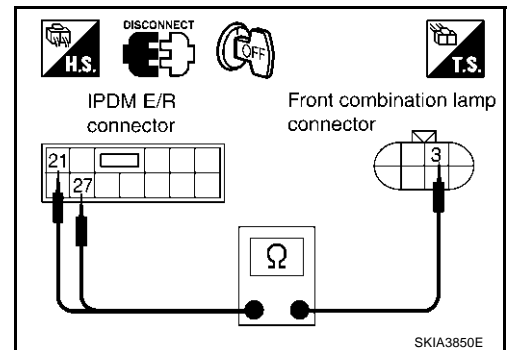
OK or NG

- OK >> GO TO 2.
- NG >> ● Standard models: Replace bulb of lamp.
- Xenon models:
 - (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)	Terminal (Wire color)	Yes
E7	27 (R)	RH	E24	3 (R)	
	21 (R/B)	LH	E41	3 (R/B)	



OK or NG

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

HEADLAMP (FOR USA)

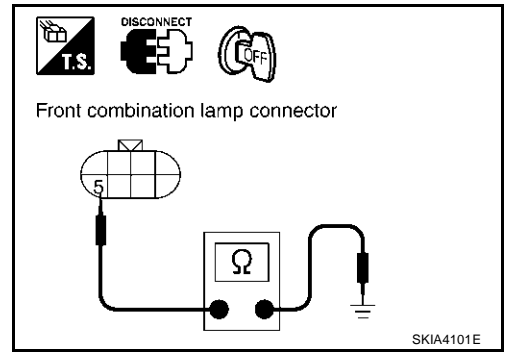
3. INSPECTION: HEADLAMP AND GROUND

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

Terminals		Ground	Continuity
Front combination lamp			
Connector	Terminal (Wire color)	5 (B)	Yes
RH	E24		
LH	E41		

OK or NG

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



Headlamps Do Not Turn OFF

AKS005HY

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

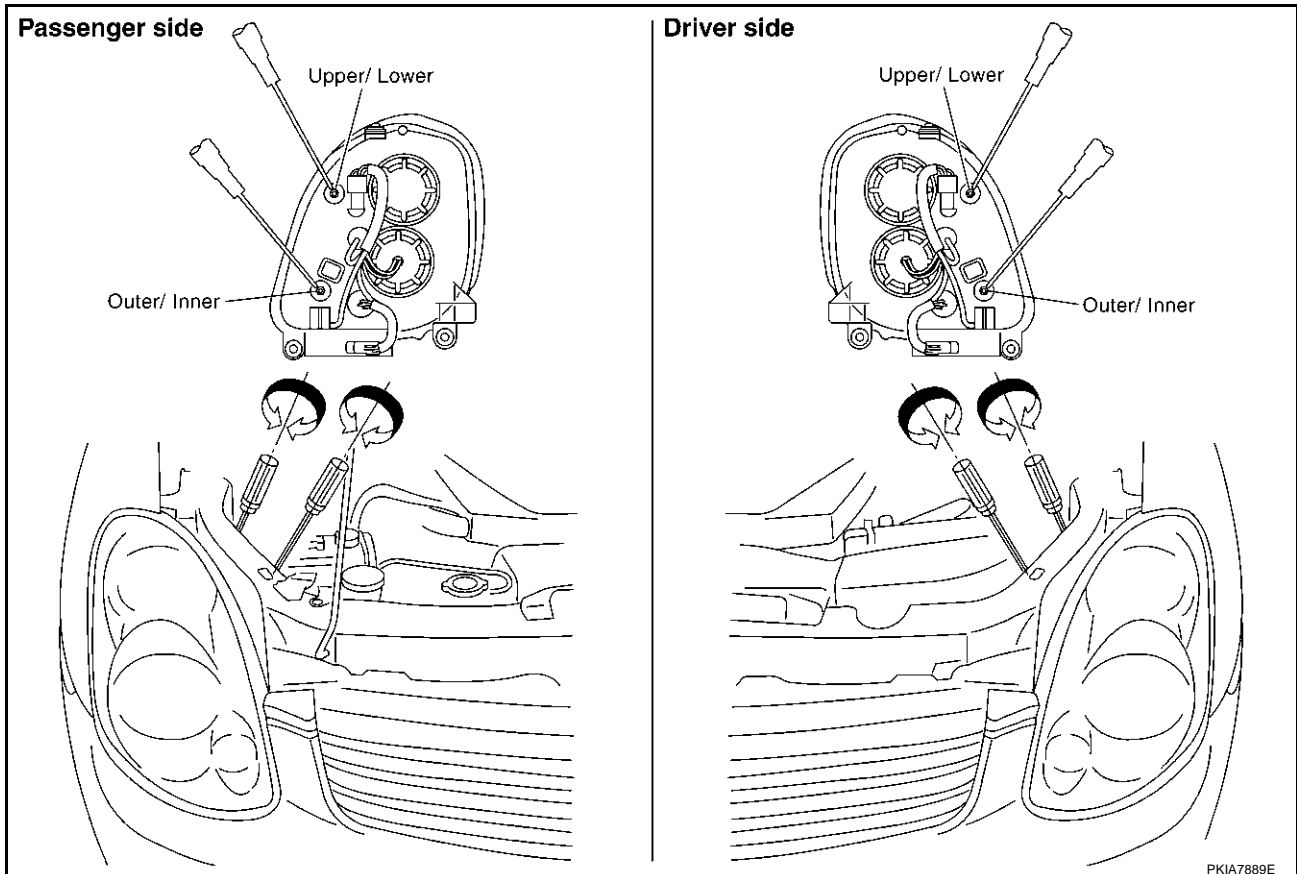
IPDM E/R detects CAN communication malfunction and activates fail-safe operation. Refer to [BCS-16, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#) and inspect CAN system.

OK or NG

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

Aiming Adjustment

AKS005I7



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.

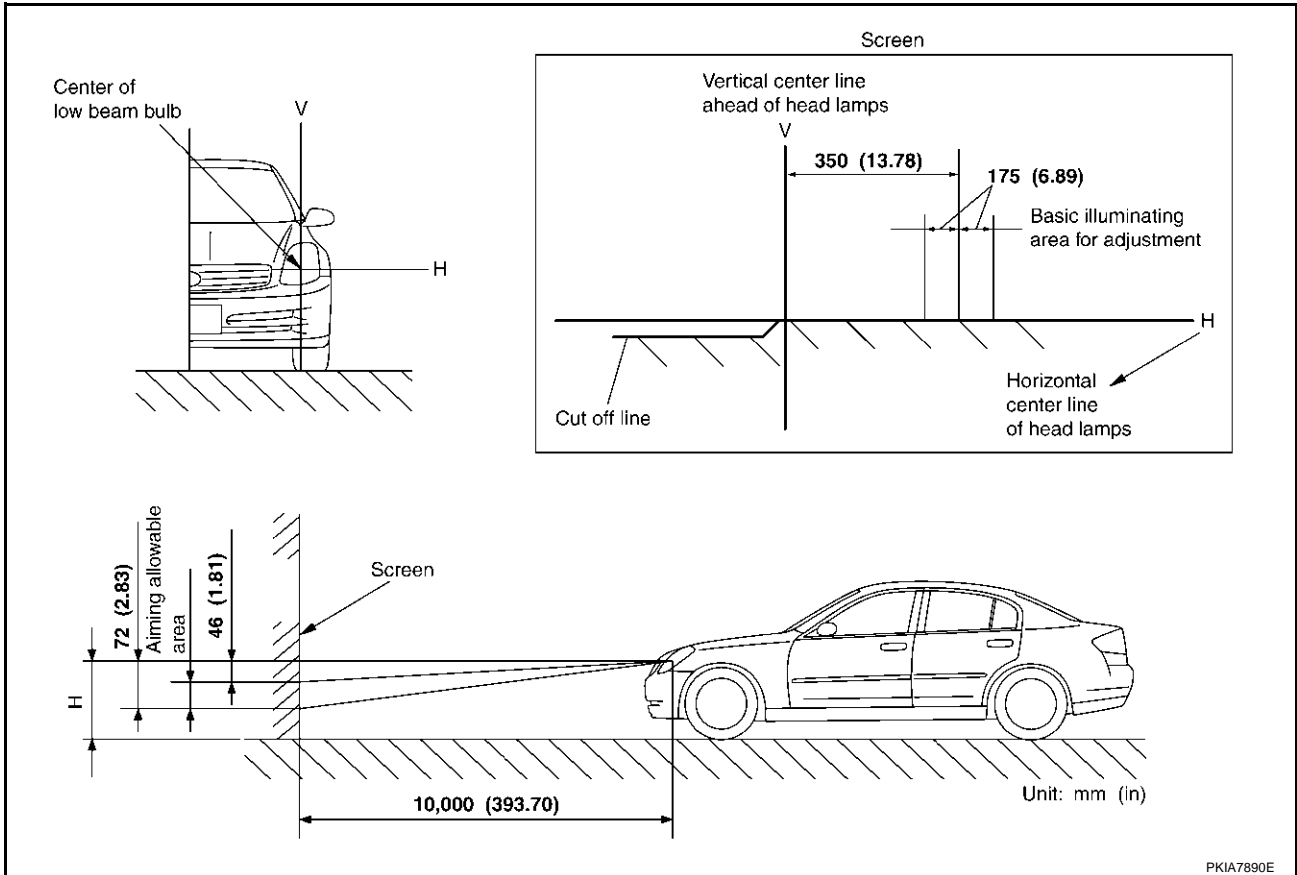
HEADLAMP (FOR USA)

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

LOW BEAM AND HIGH BEAM

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

ADJUSTMENT USING AN ADJUSTMENT SCREEN (LIGHT/DARK BORDERLINE)

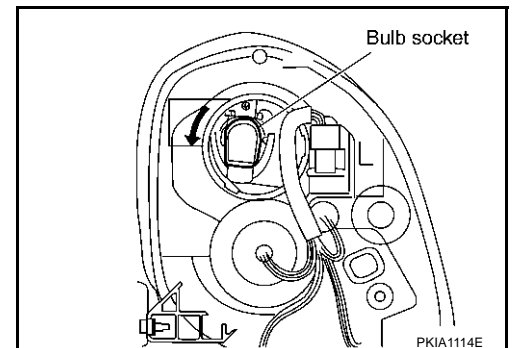


If the vehicle front body has been repaired and/or the headlamp assembly has been replaced, check aiming. Use the aiming chart shown in the figure.

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

Bulb Replacement HEADLAMP (UPPER) LOW BEAM (XENON)

- Turn lighting switch OFF.
- Disconnect negative battery cable or remove power fuse.
- Remove headlamp. Refer to [LT-30, "Removal and Installation"](#).
- Turn plastic cap counterclockwise and unlock it.
- Turn bulb socket counterclockwise and unlock it.
- Unlock retaining spring and remove bulb from headlamp.
- Install in reverse order of removal.



HEADLAMP (UPPER) LOW BEAM (HALOGEN)

- Turn lighting switch OFF.
- Remove fender protector (front). Refer to [EI-22, "FENDER PROTECTOR"](#) in "EI" section.
- Turn plastic cap counterclockwise and unlock it.

HEADLAMP (FOR USA)

4. Disconnect bulb terminal.
5. Unlock retaining spring and remove bulb from headlamp.
6. Install in reverse order of removal.

A

B

C

D

E

F

G

H

I

J

LT

L

M

HEADLAMP (FOR USA)

HEADLAMP (LOWER) HIGH BEAM/FOG LAMP

1. Turn lighting switch OFF.
2. Disconnect negative battery cable or remove power fuse.
3. Remove fender protector (front). Refer to [EI-22, "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.

PARKING LAMPS (CLEARANCE LAMPS)

1. Turn lighting switch OFF.
2. Remove fender protector (front). Refer to [EI-22, "FENDER PROTECTOR"](#) in "EI" section.
3. Turn bulb socket counterclockwise and unlock it.
4. Remove bulb from its socket.

FRONT TURN SIGNAL LAMP

1. Turn lighting switch OFF.
2. Remove fender protector (front). Refer to [EI-22, "FENDER PROTECTOR"](#) in "EI" section.
3. Turn bulb socket counterclockwise and unlock it.
4. Remove bulb from its socket.

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

Headlamp (upper) low beam (Halogen) : 12V - 55W (H1)

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

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

Front turn signal lamp : 12V - 21W

CAUTION:

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

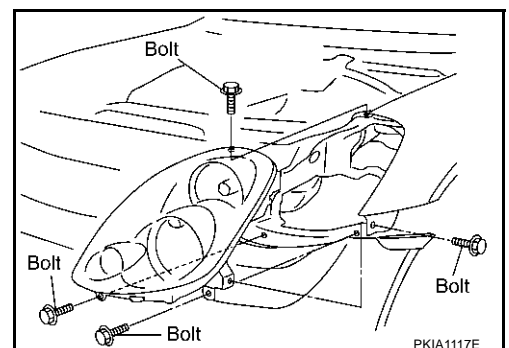
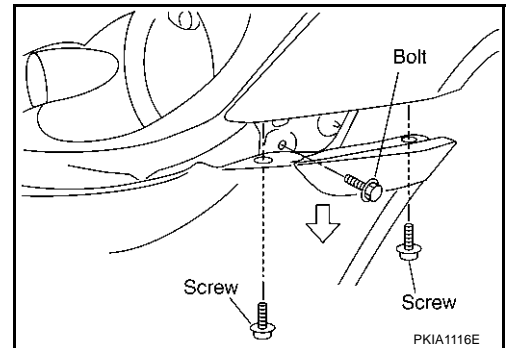
Removal and Installation

REMOVAL

1. Remove front grille. Refer to [EI-20, "FRONT GRILLE"](#) in "EI" section.
2. Remove front undercover and fender protector. Refer to [EI-22, "FENDER PROTECTOR"](#) in "EI" section.
3. Remove mounting clip on top of front bumper and screws on side of front bumper. Refer to [EI-14, "FRONT BUMPER"](#) in "EI" section.
4. Pull side of the front bumper toward the vehicle front and disengage it from clips on the body.
5. Remove headlamp mounting bolts.
6. 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.



HEADLAMP (FOR USA)

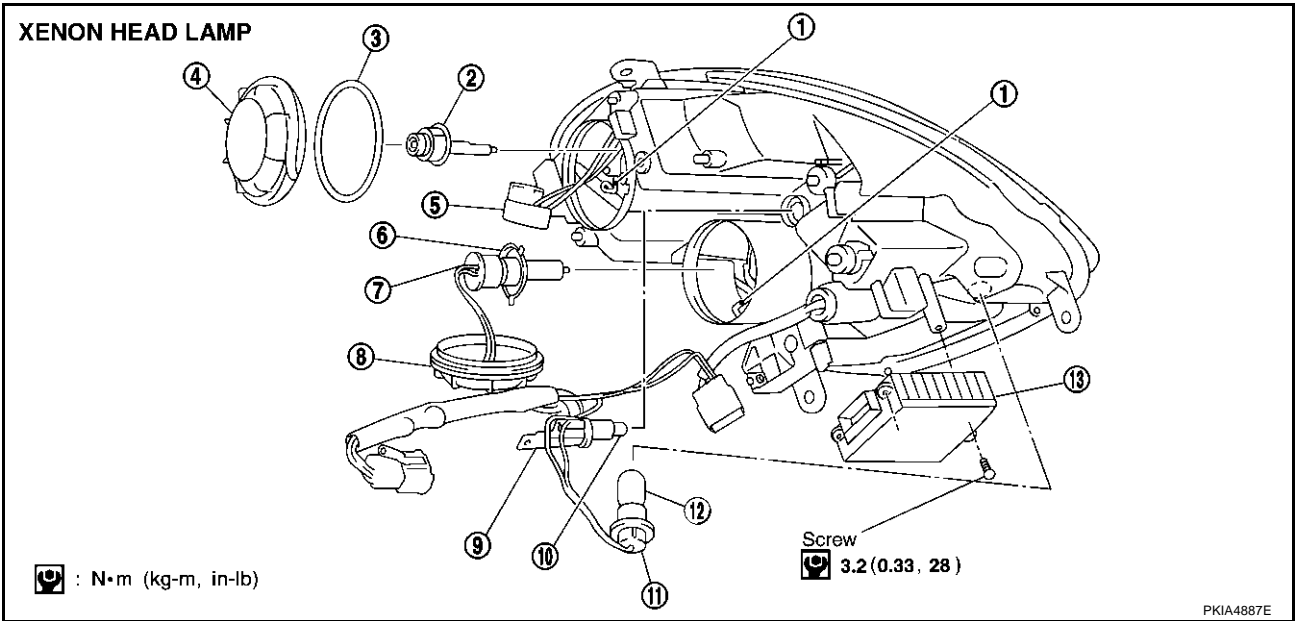
INSTALLATION

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

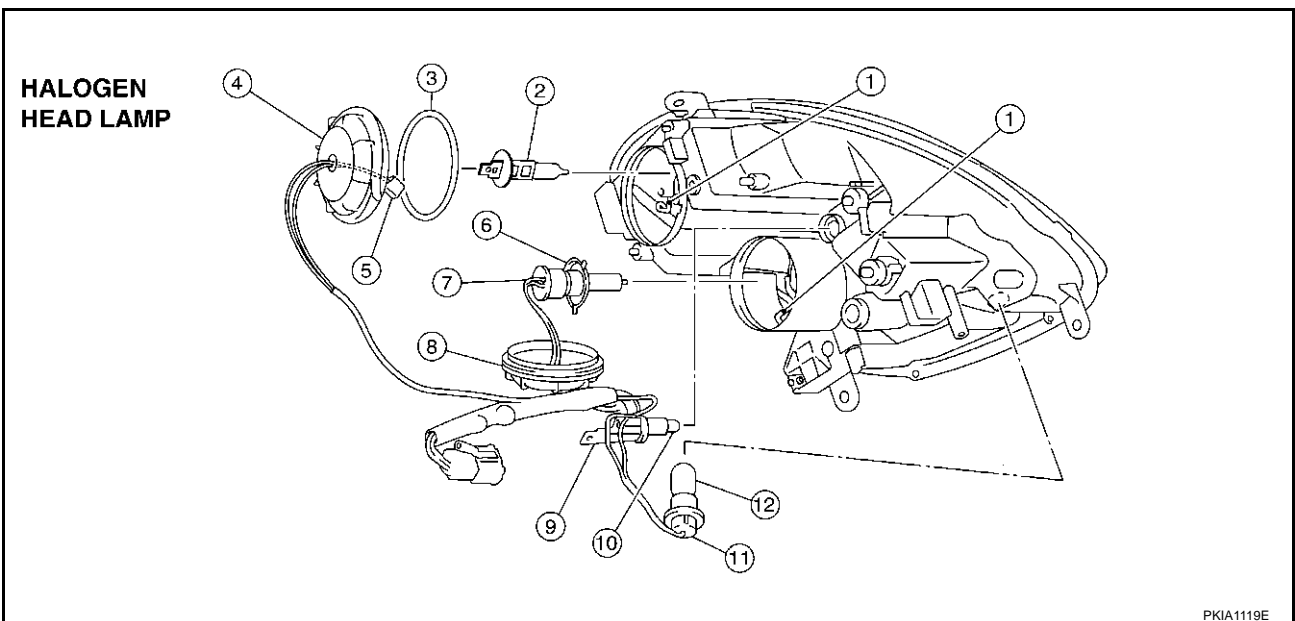
Headlamp mounting bolt  : 5.5 N·m (0.56 kg-m, 49 in-lb)

Disassembly

AKS0051A



- | | | |
|--|--|--|
| 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. Parking lamp (Clearance lamp) bulb socket |
| 10. Parking lamp (Clearance lamp) bulb | 11. Front turn signal lamp bulb socket | 12. Front turn signal lamp bulb |
| 13. HID C/U | | |



- | | | |
|-------------------------|--|---------------------------------|
| 1. Retaining spring | 2. Halogen bulb | 3. Seal rubber |
| 4. Plastic cap (low) | 5. Halogen bulb socket | 6. Halogen bulb (high/fog) |
| 7. Halogen bulb socket | 8. Resin cap (high/fog) | 9. Clearance lamp bulb socket |
| 10. Clearance lamp bulb | 11. Front turn signal lamp bulb socket | 12. Front turn signal lamp bulb |

1. Turn plastic cap (low) counterclockwise and unlock it.

HEADLAMP (FOR USA)

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

AKS0051B

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

HID control unit  : 3.2 N·m (0.33 kg·m, 28 in·lb)

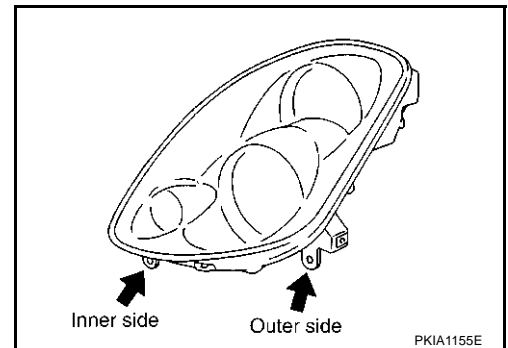
CAUTION:

- 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

AKS0051C

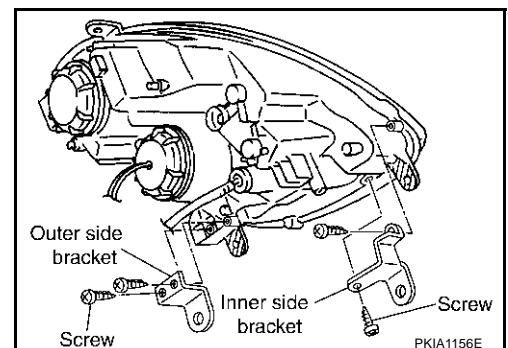
If only installation part as shown in the figure is damaged, and headlamp housing itself is not damaged, repair can be completed easily by installing correction brackets.



REMOVAL AND INSTALLATION

1. Remove headlamps. Refer to [LT-30, "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	Outer side	26040 AL510
	Inner side	26040 AL500
LH headlamp	Outer side	26040 AL510
	Inner side	26090 AL500



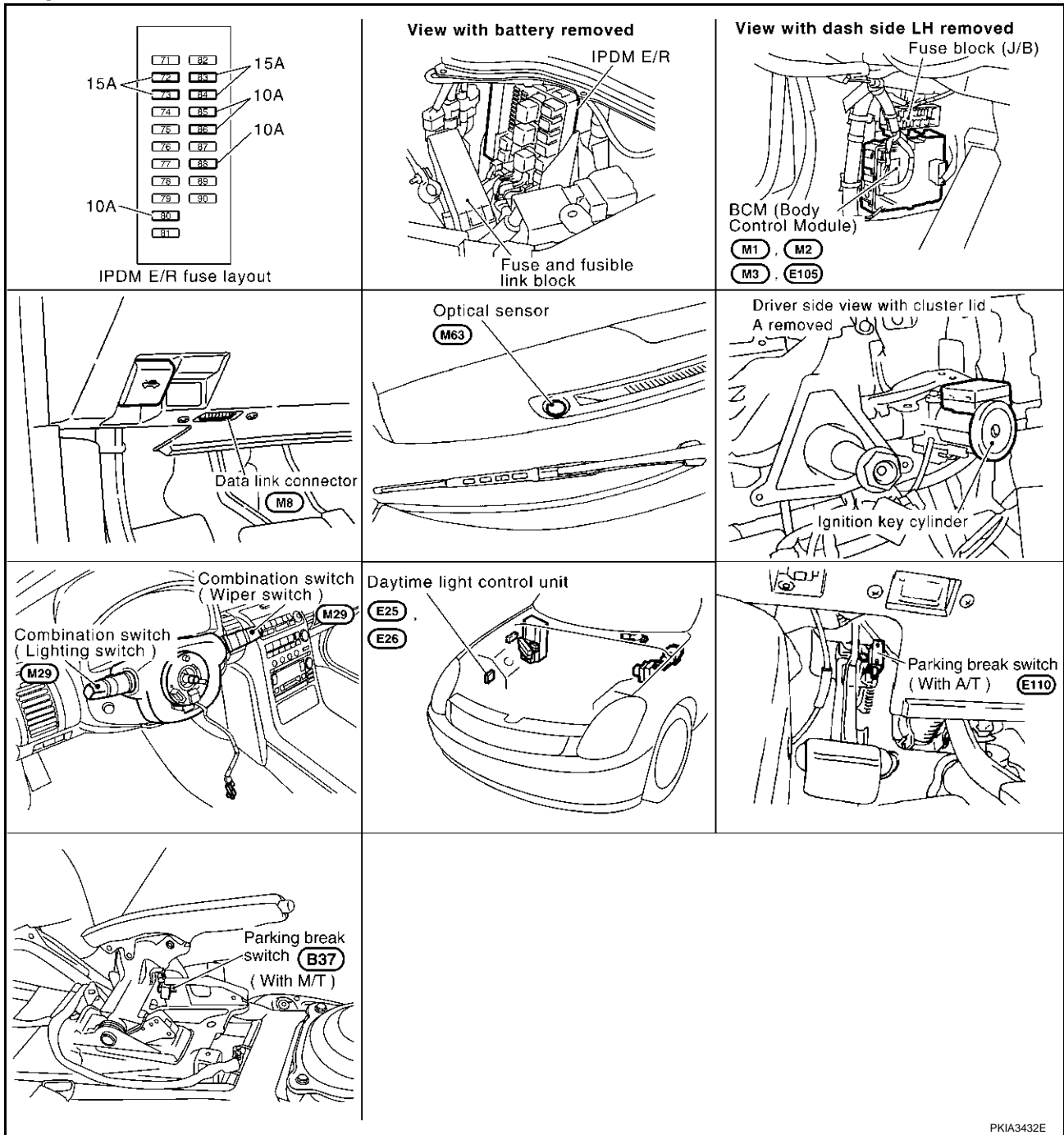
HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

PFP:26010

Component Parts and Harness Connector Location

AKS004Q2



PKIA3432E

System Description

AKS004Q3

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

A
B
C
D
E
F
G
H
I
J
LT
L
M

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

- through 15A fuse [No. 73, located in IPDM E/R (intelligent power distribution module engine room)]
- to daytime light control unit terminals 2 and 3
- through 10A fuse [No. 21, located in fuse block (J/B)].

Power is also supplied at all times

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

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

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

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

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

With ignition switch in START position, power is supplied

- to daytime light control unit terminal 1
- through 10A fuse [No. 9, located in 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 receives input signal requesting the headlamps to illuminate. This input signal is communicated to the IPDM E/R across the CAN communication lines. The CPU in the IPDM E/R controls the headlamp low relay coil, which when energized, directs power

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

Ground is supplied at all times

- to headlamp RH terminal 5
- through grounds E17 and E43, and
- to headlamp LH terminal 5
- 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 receives input signal requesting the headlamp high beams to illuminate. This input signal is communicated to the IPDM E/R across the CAN communication lines. The CPU 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 IPDM E/R]

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

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

Ground is supplied

- to daytime light relay-2 terminal 1
- through grounds E17 and E43
- to headlamp RH terminal 8
- through grounds E17 and E43
- to headlamp RH terminal 5
- through grounds E17 and E43
- to headlamp LH terminal 5
- through grounds E17 and E43
- to headlamp LH terminal 8
- through daytime light control unit terminal 7
- to daytime light control unit terminal 9
- 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-120, "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-64, "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 headlamp LH terminal 2
- through headlamp LH terminal 8
- to daytime light control unit terminal 7
- through daytime light control unit terminal 8
- to headlamp RH terminal 2.

Ground is supplied

- to headlamp RH terminal 8

A

B

C

D

E

F

G

H

I

J

LT

L

M

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

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

Daytime light control unit is canceled power supplying from headlamp RH terminal 8 to terminal 2 (series power supplying 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											
		OFF				1ST				2ND				OFF				1ST				2ND			
Lighting switch		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	-	-	x	-	-	-	x	-	x	-	x	-	● *	● *	x	-	● *	● *	x	-	x	-	x
Low beam		-	-	x	-	-	-	x	-	x	x	x	x	-	-	x	-	-	-	x	-	x	x	x	x
Tail lamp		-	-	-	-	x	x	x	x	x	x	x	x	-	-	-	-	x	x	x	x	x	x	x	x
License plate and instrument illumination lamp		-	-	-	-	x	x	x	x	x	x	x	x	-	-	-	-	x	x	x	x	x	x	x	x

- Hi: "HIGH BEAM" position
- Lo: "LOW BEAM" position
- P: "FLASH TO PASS" position
- F: "FOG LAMP" SW is ON
- x: 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 (IF EQUIPPED)

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

AKS004Q4

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

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

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

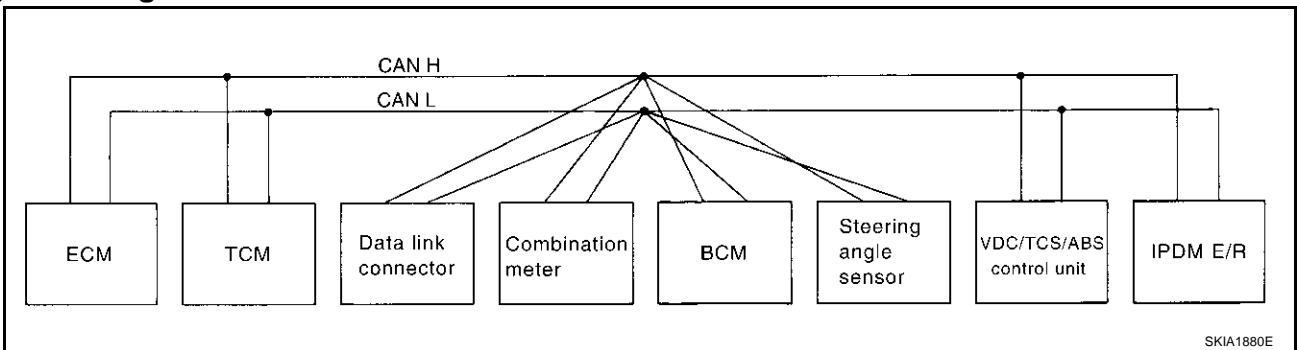
AKS00C4G

Body type	Sedan	
Axle	2WD	
Engine	VQ35DE	
Transmission	A/T	M/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	<u>LT-37. "TYPE 1"</u>	<u>LT-39. "TYPE 2"</u>

×: Applicable

TYPE 1

System Diagram



Input/Output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Combina- tion meter	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R
Engine torque signal	T	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 signal		R	T				
Fuel consumption monitor signal	T		R				
A/T self-diagnosis signal	R	T					
A/T CHECK indicator lamp signal		T	R				

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

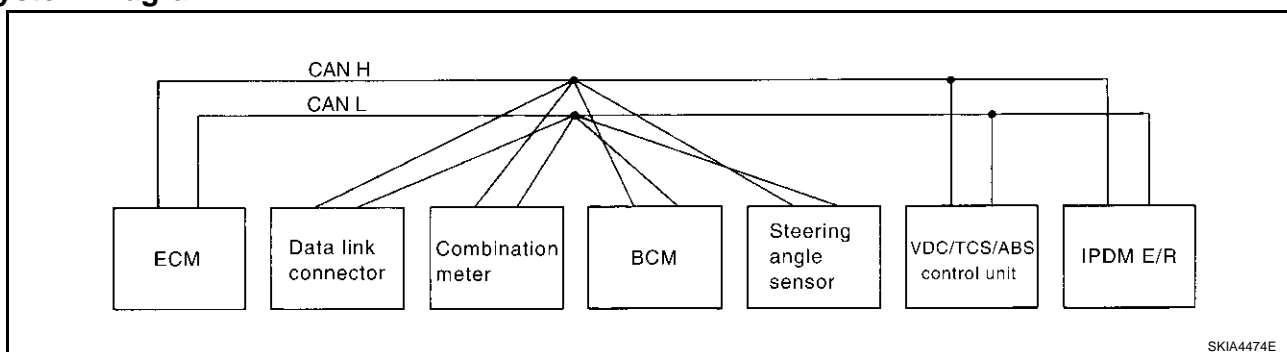
Signals	ECM	TCM	Combina- tion meter	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R
A/T position indicator signal		T	R			R	
ABS operation signal		R				T	
A/T shift schedule change demand signal		R				T	
A/C switch signal	R			T			
A/C compressor request signal	T						R
A/C compressor feedback signal	T		R				
Blower fan motor switch signal	R			T			
Cooling fan motor operation signal	R						T
Position lights request signal			R	T			R
Low beam request signal				T			R
Low beam status signal	R						T
High beam request signal			R	T			R
High beam status signal	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			R
Wake up request 2 signal			R	T			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			
ASCD SET lamp signal	T		R				
ASCD CRUISE lamp signal	T		R				
ASCD OD cancel request signal	T	R					
ASCD operation signal	T	R					
Output shaft 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						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				

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

Signals	ECM	TCM	Combina- tion meter	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R
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	Combina- tion 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				
A/C 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			

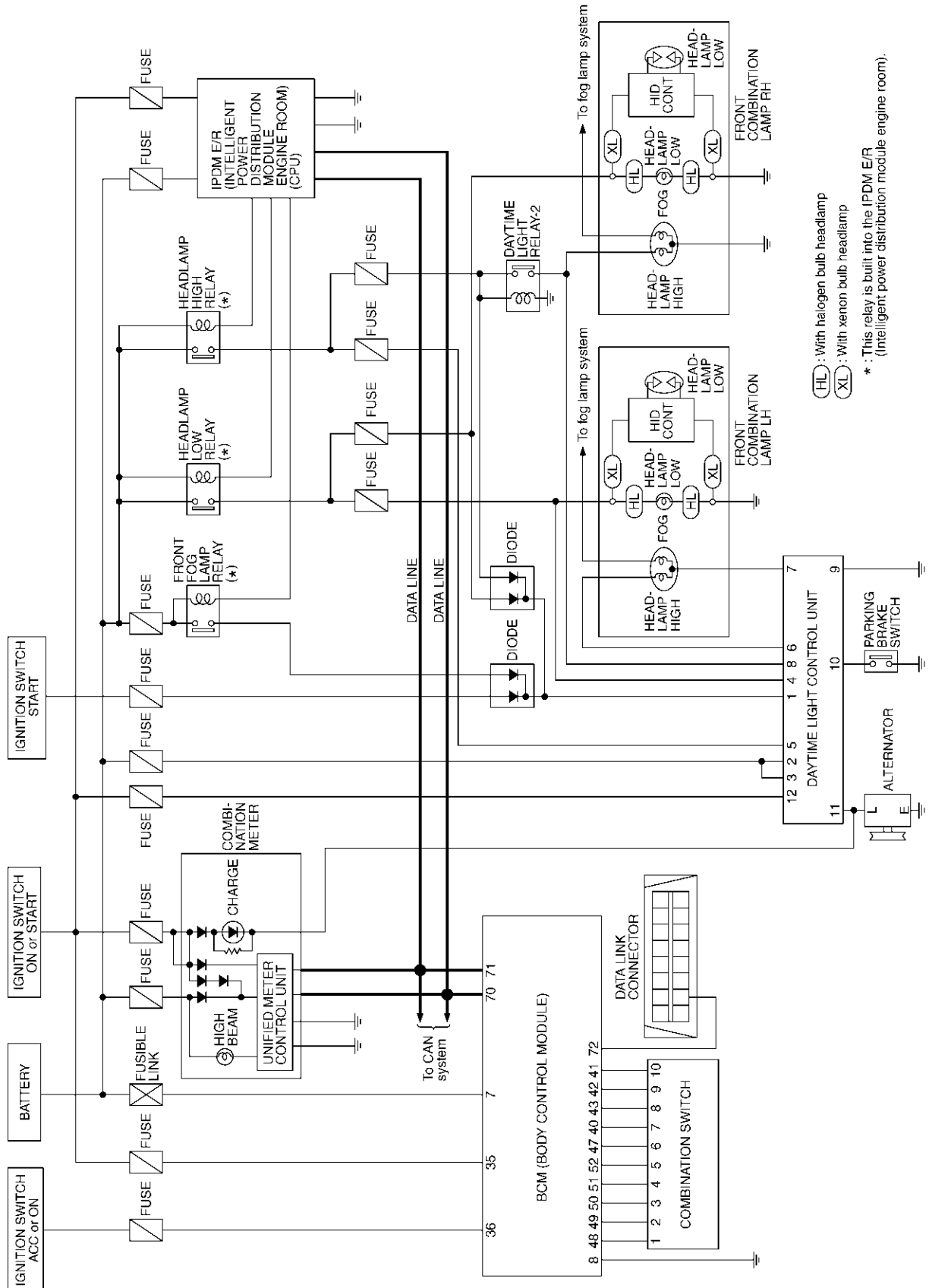
HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

Signals	ECM	Combina- tion meter	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R
Seat belt buckle switch signal		T	R			
Oil pressure switch signal		R				T
Buzzer output 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	

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

Schematic

AKS004Q6



(HL) : With halogen bulb headlamp
 (XL) : With xenon bulb headlamp
 * : This relay is built into the IPDM E/R (Intelligent power distribution module engine room).

A
B
C
D
E
F
G
H
I
J
K
L
M

LT

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

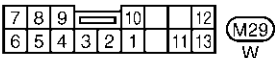
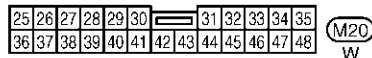
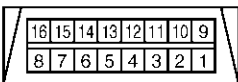
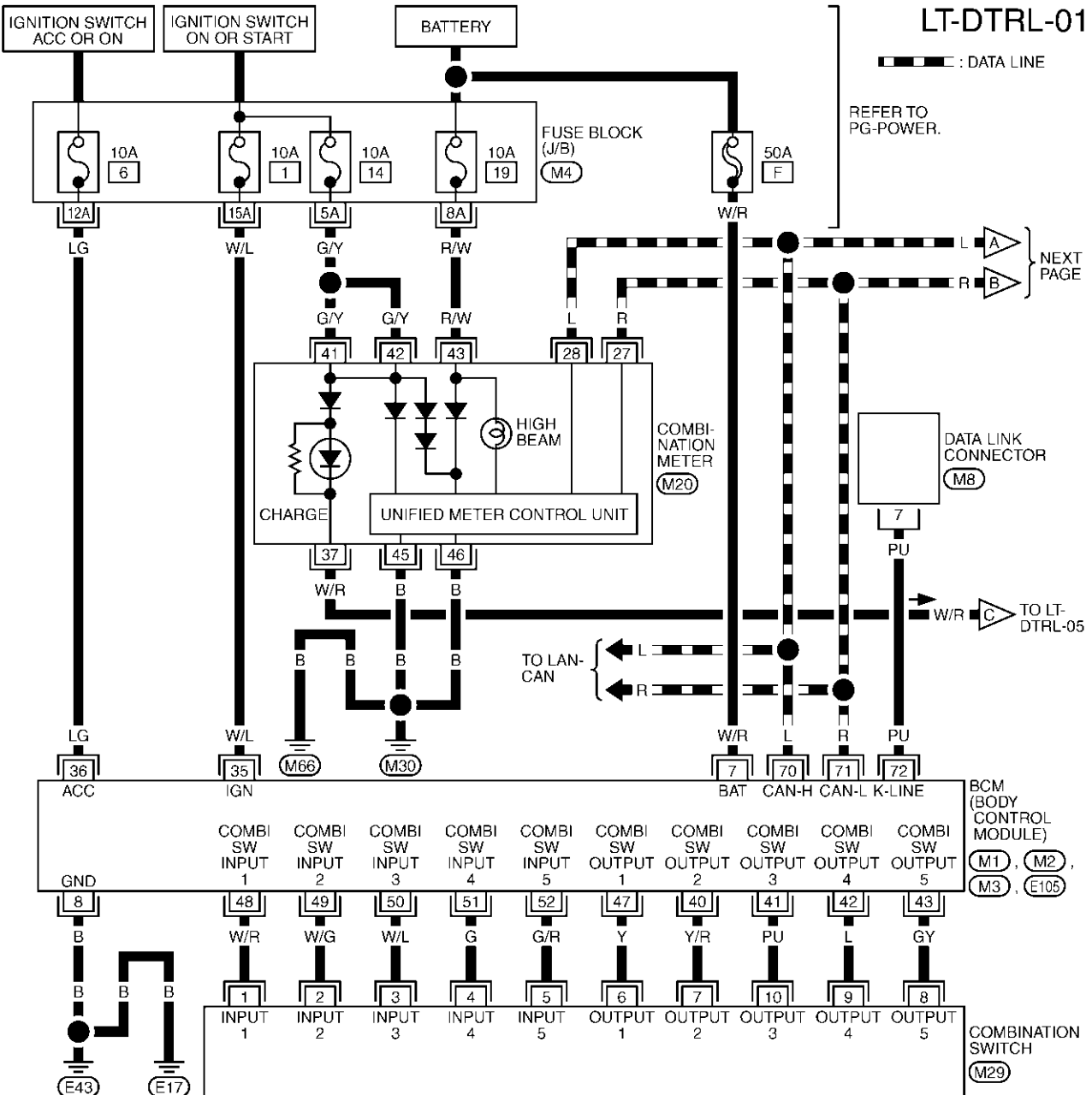
Wiring Diagram — DTRL —

AKS0091T

LT-DTRL-01

— : DATA LINE

REFER TO PG-POWER.



REFER TO THE FOLLOWING.

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

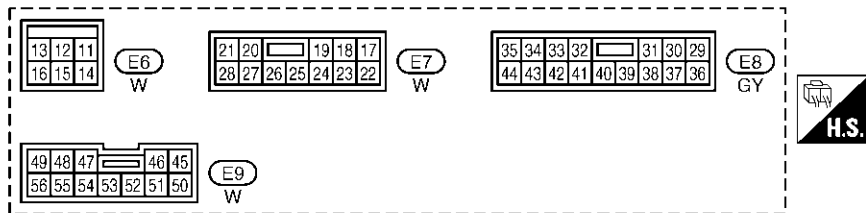
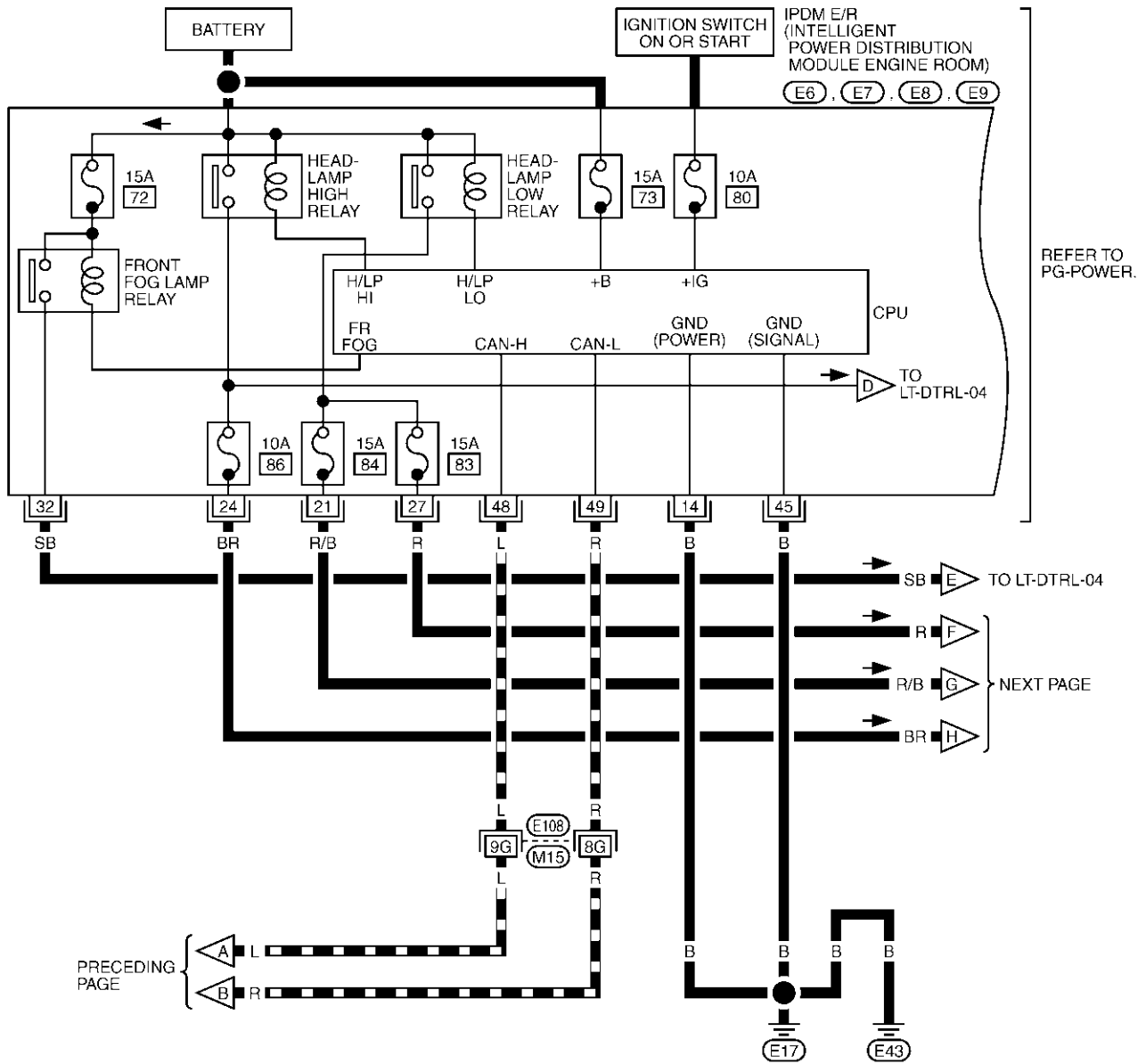
(M1), (M2), (M3), (E105) - ELECTRICAL UNITS

TKWT0302E

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

LT-DTRL-02

▬ : DATA LINE



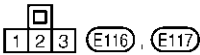
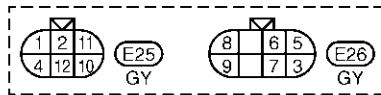
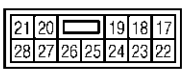
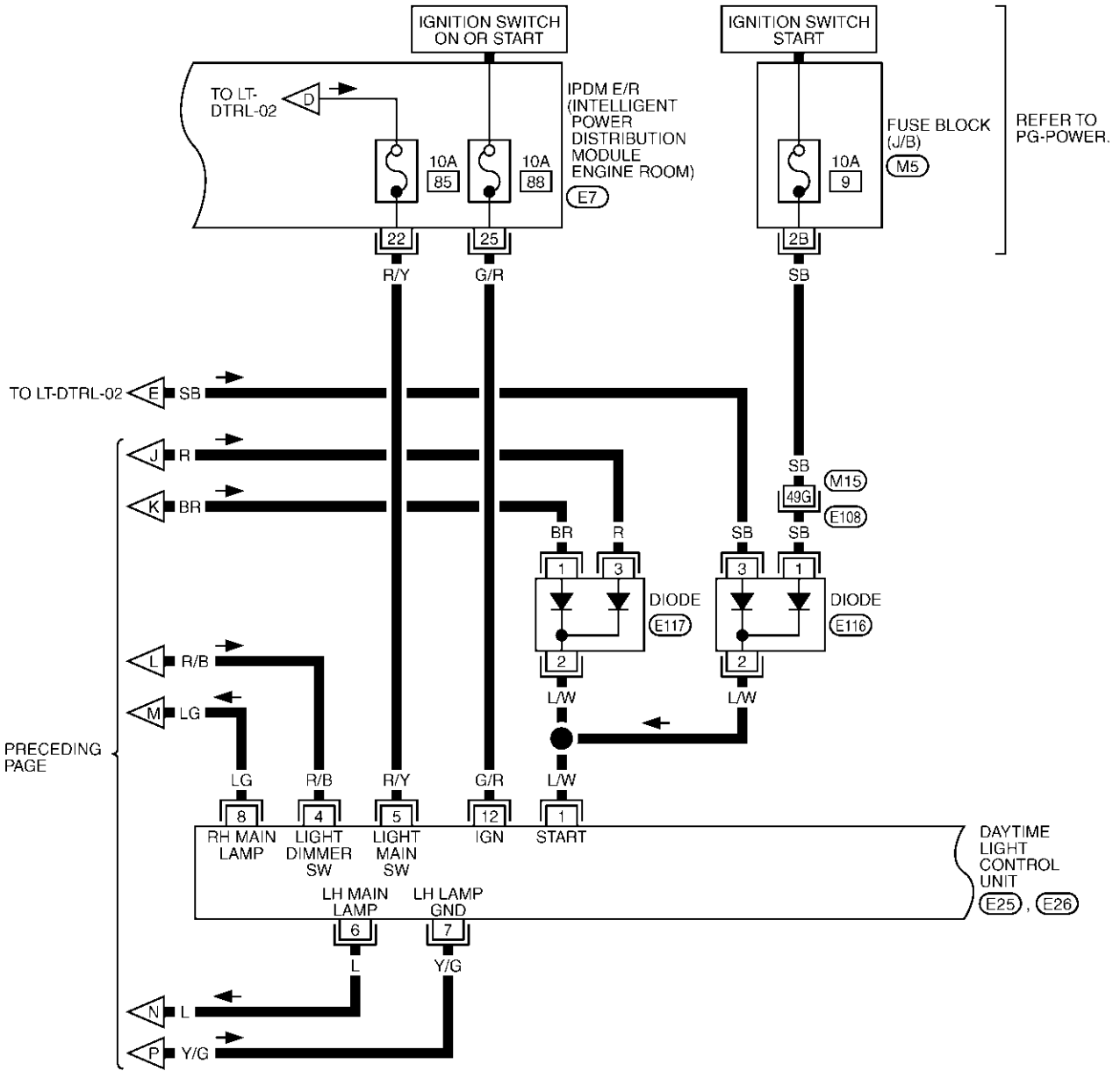
REFER TO THE FOLLOWING.
 (E108) -SUPER MULTIPLE JUNCTION (SMJ)

A
B
C
D
E
F
G
H
I
J
K
L
M

LT

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

LT-DTRL-04



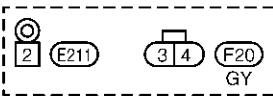
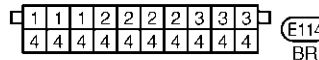
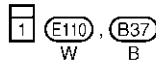
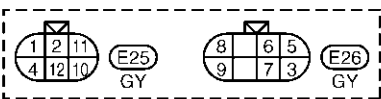
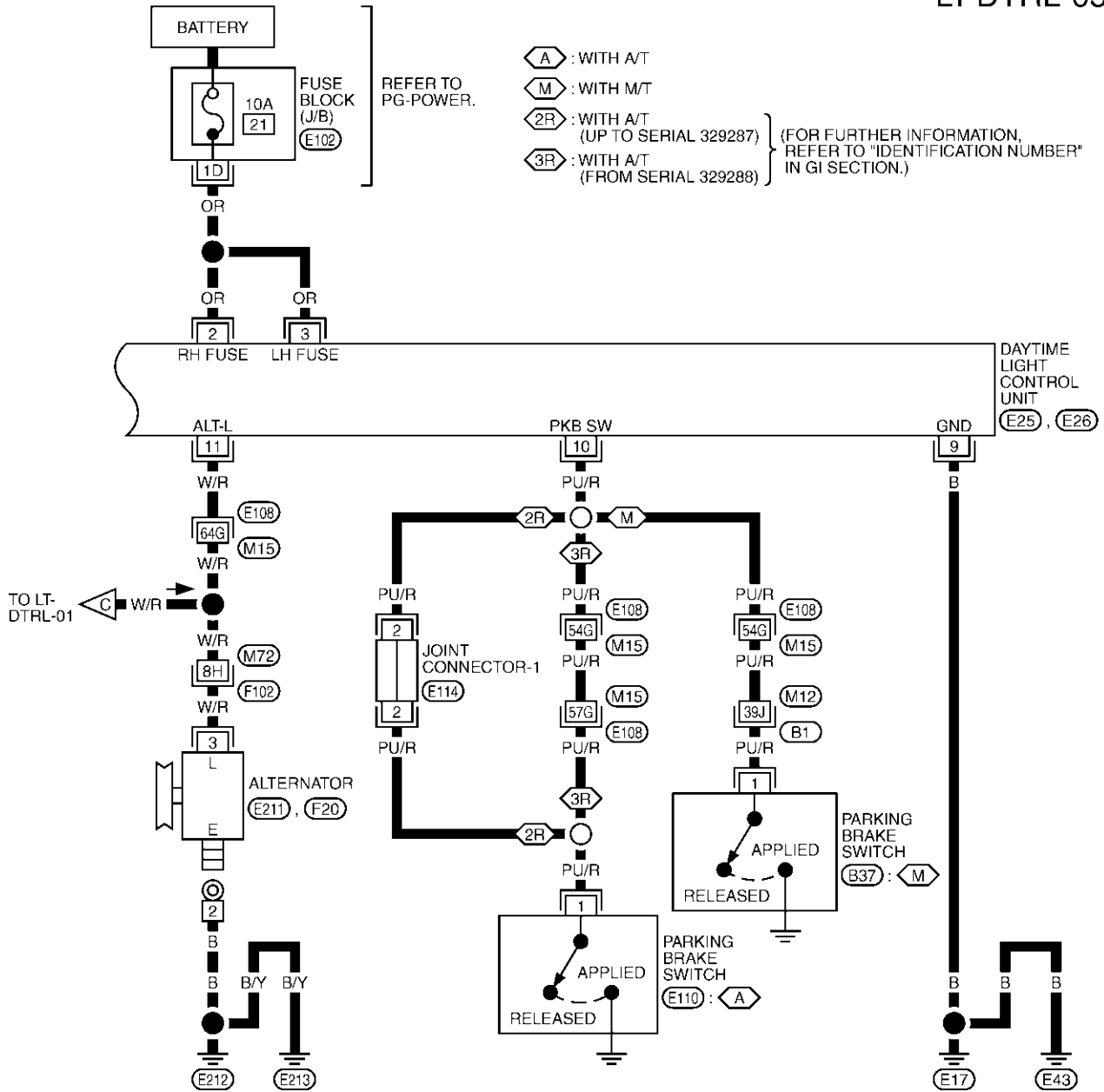
REFER TO THE FOLLOWING.

- E108 -SUPER MULTIPLE JUNCTION (SMJ)
- M5 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT1008E

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

LT-DTRL-05



REFER TO THE FOLLOWING.
 (E108), (F102), (B1) -SUPER MULTIPLE JUNCTION (SMJ)
 (E102) -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT1009E

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

Terminals and Reference Value for Daytime Light Control Unit

AKS004Q8

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	Ground	—	—
10	PU/R	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

AKS004Q9

Refer to [LT-17, "Terminals and Reference Value for BCM"](#) .

Terminals and Reference Values for IPDM E/R

AKS004V1

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

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
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

AKS004QB

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-33, "System Description"](#) .
3. Carry out the Preliminary Inspection. Refer to [LT-48, "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

AKS004QC

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown fuses.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	F
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
IPDM E/R	Battery	83
		84
		85
		86
DAYTIME LIGHT CONTROL UNIT	Ignition switch START position	9
	Ignition switch ON or START position	88

Refer to [LT-42, "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-3, "POWER SUPPLY ROUTING CIRCUIT"](#) .

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

2. CHECK POWER SUPPLY CIRCUIT

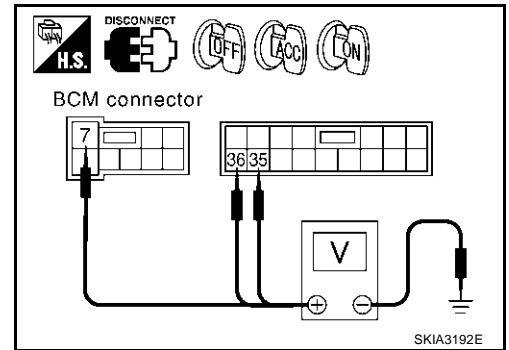
1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check voltage between BCM harness connector and ground.

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

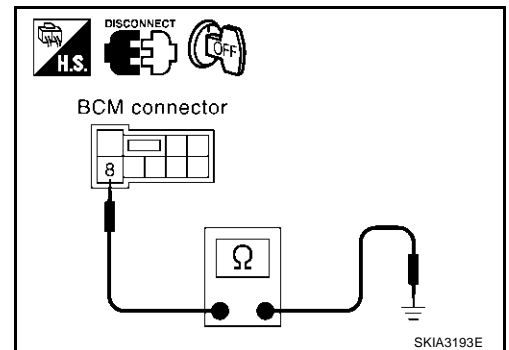
Check continuity between BCM harness connector and ground.

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

OK or NG

OK >> INSPECTION END

NG >> Check harness ground circuit.



A
B
C
D
E
F
G
H
I
J
LT
L
M

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

CONSULT-II Function

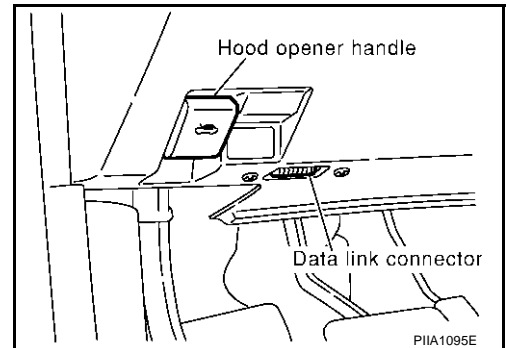
AKS004QD

CONSULT-II performs the following functions communicating with BCM.

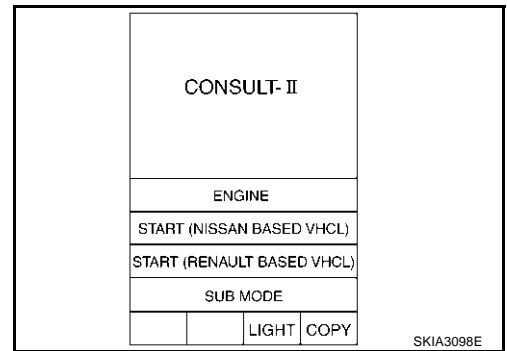
BCM diagnosis part	Check item, diagnosis mode	Description
HEAD LAMP	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
BCM C/U	CAN DIAG SUPPORT MNTR	The result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

CONSULT-II BASIC OPERATION

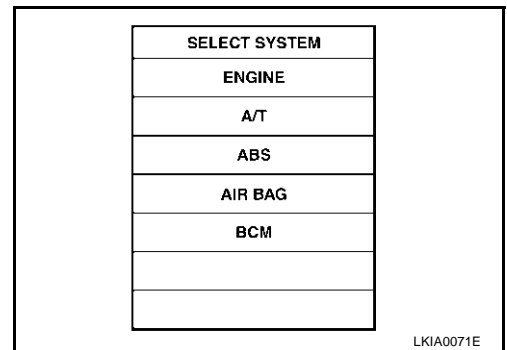
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



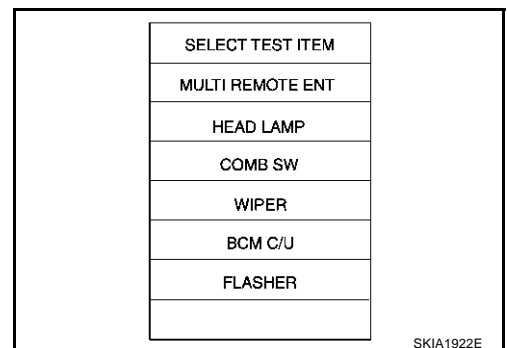
2. Touch "START (NISSAN BASED VHCL)".



3. Touch "BCM" on "SELECT SYSTEM" screen. If "BCM" is not indicated, refer to [GI-38, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



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



HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

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}	"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	"ON/OFF" Displays status of the rear doors as judged from the rear door switch signal. (Door is open: ON/Door is closed: OFF)

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

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:

Vehicles without auto light system display this item, 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.

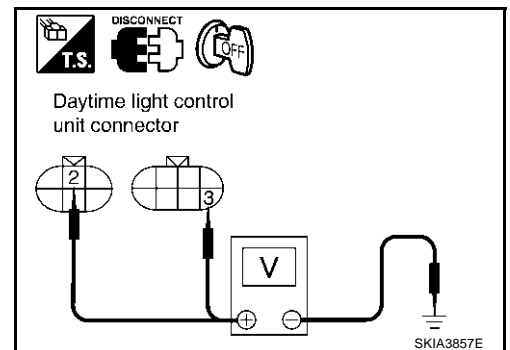
Daytime Light Control Does Not Operate Properly

AKS004QE

1. CHECK DAYTIME LIGHT CONTROL UNIT

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

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



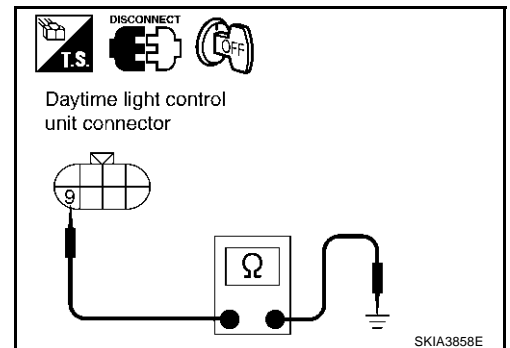
OK or NG

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



OK or NG

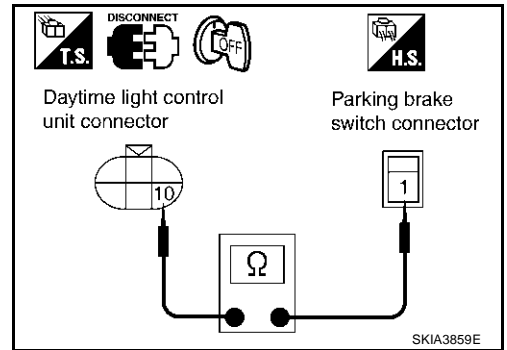
- OK >> GO TO 3.
- NG >> Repair harness or connector.

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

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 (PU/R)	E110 (WITH A/T)	1 (PU/R)	Yes
		B37 (WITH M/T)		



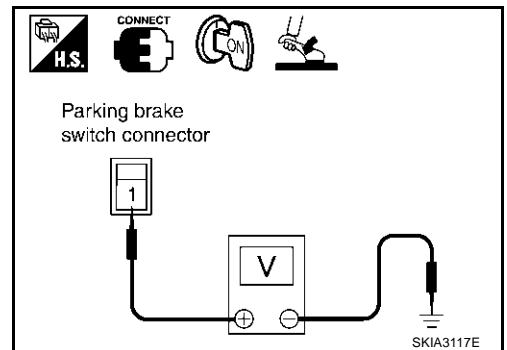
OK or NG

- 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 (+)		(-)		
Connector	Terminal (Wire color)			
E110 (WITH A/T) B37 (WITH M/T)	1 (PU/R)	Ground	Not released	Approx. 0V
			Released	Battery voltage



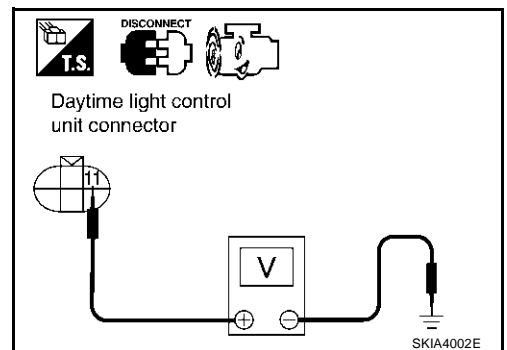
OK or NG

- 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 (+)		(-)		
Connector	Terminal (Wire color)			
E25	11 (W/R)	Ground	Engine stopped	Approx. 0V
			Engine running	Battery voltage



OK or NG

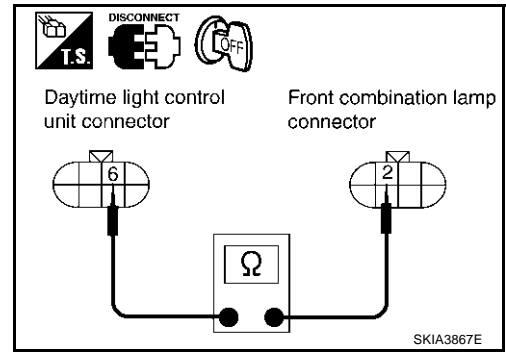
- OK >> GO TO 6.
 NG >> Repair harness or connector.

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

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



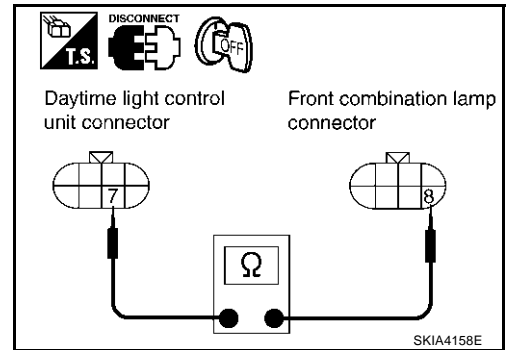
OK or NG

- 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	8 (Y/G)	Yes



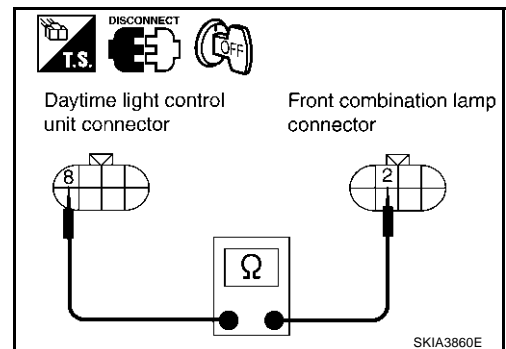
OK or NG

- 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

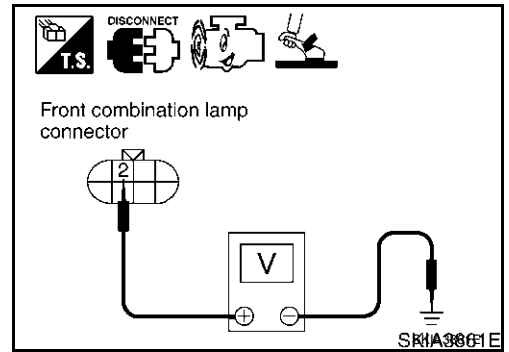
- OK >> GO TO 9.
 NG >> Repair harness or connector.

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

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 (+)			
Connector	Terminal (Wire color)	Ground	Battery voltage
E24	2 (LG)		



OK or NG

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

Headlamp HI Does Not Illuminate (Both Sides)

AKS004QF

1. INSPECTION 1: IPDM E/R AND HEADLAMPS

1. Start auto active test. Refer to [PG-21, "Auto Active Test"](#).
2. Check whether headlamp HI operates.

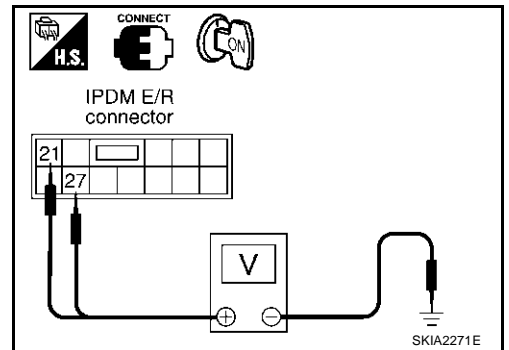
OK or NG

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

2. CHECK IPDM E/R

Start auto active test. Refer to [PG-21, "Auto Active Test"](#). When headlamp HI is operating, check voltage between harness connector of IPDM E/R and ground.

Terminals		(-)	Voltage
IPDM E/R (+)			
Connector	Terminal (Wire color)	Ground	Battery voltage
E7	21 (R/B)		
	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-16, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#).
 OPEN DETECT 1 - 5 >> Combination switch system malfunction. Refer to [LT-125, "Combination Switch Inspection According to Self-Diagnostic Results"](#).

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

LKIA0073E

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

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-23, "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

AKS004QG

1. CHECK BULB

Inspect bulb of lamp.

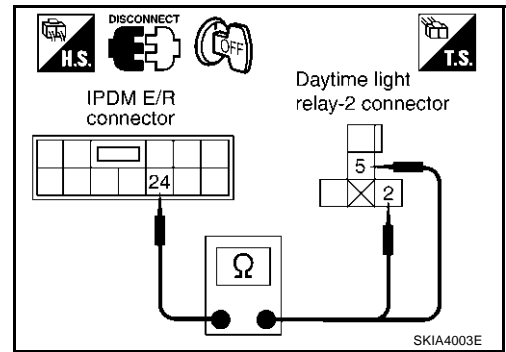
OK or NG

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

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

- Disconnect IPDM E/R connector and daytime light relay-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)	



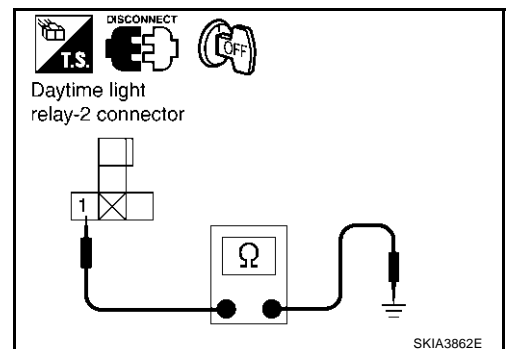
OK or NG

- 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.

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

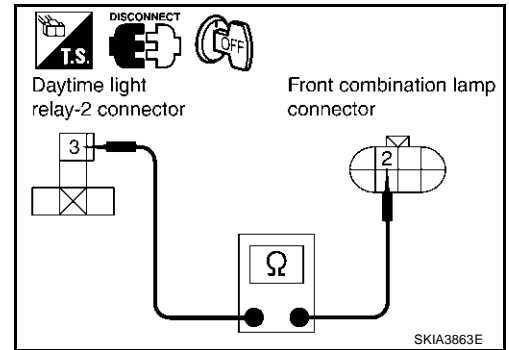
4. INSPECTION: DAYTIME LIGHT RELAY-2 AND HEADLAMP

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.



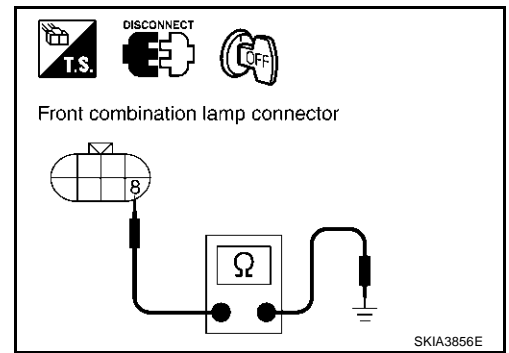
5. INSPECTION: HEADLAMP AND GROUND

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

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

OK or NG

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



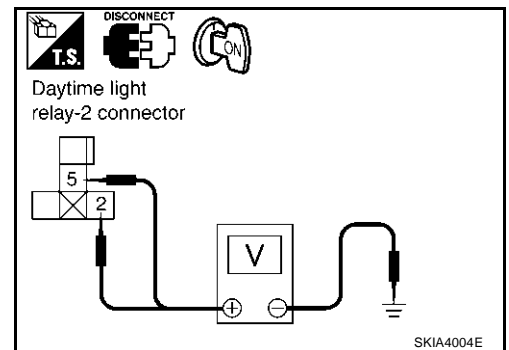
6. CHECK IPDM E/R

1. Connect IPDM E/R connector.
2. Start auto active test. Refer to [PG-21, "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 (+)		(-)	
Connector	Terminal (Wire color)		
E16	5 (BR)	Ground	Battery voltage
	2 (BR)		

OK or NG

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



HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

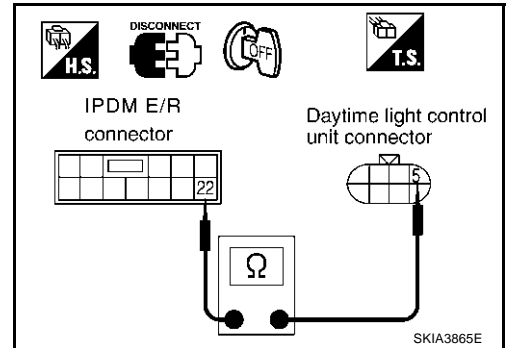
AKS004QH

LH HI Does Not Illuminate But LH LO Illuminates

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



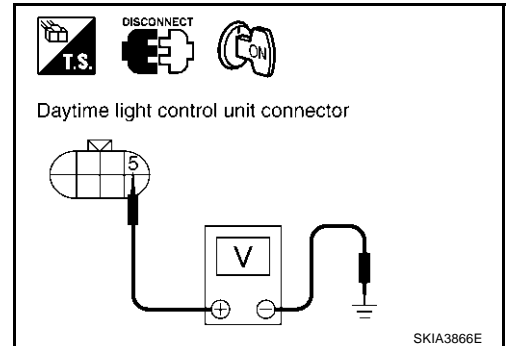
OK or NG

- 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-21, "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 (+)		(-)	
Connector	Terminal (Wire color)		
E26	5 (R/Y)	Ground	Battery voltage



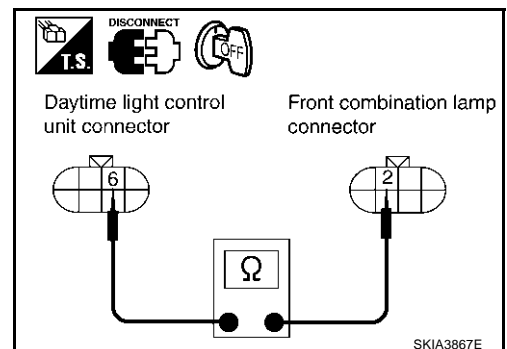
OK or NG

- 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.

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

4. INSPECTION: DAYTIME LIGHT CONTROL UNIT AND HEADLAMP

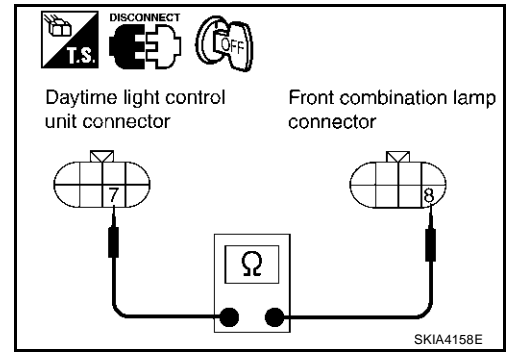
Check continuity between harness connector of daytime light control unit and harness connector of LH front combination lamp.

Terminals				Continuity
Daytime light control unit		Front combination lamp LH		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
E26	7 (Y/G)	E41	8 (Y/G)	Yes

OK or NG

OK >> GO TO 5.

NG >> Repair harness or connector.



5. INSPECTION: DAYTIME LIGHT CONTROL UNIT AND GROUND

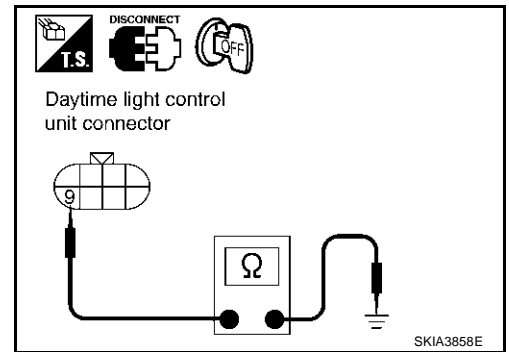
Check continuity between harness connector of daytime light control unit and ground.

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

OK or NG

OK >> GO TO 6.

NG >> Repair harness or connector.



6. CHECK DAYTIME LIGHT CONTROL UNIT

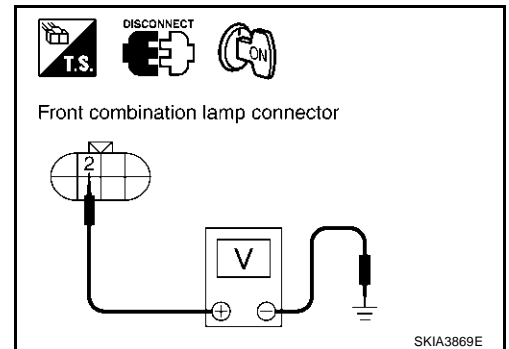
1. Connect daytime light control unit connector.
2. Start auto active test. Refer to [PG-21, "Auto Active Test"](#). When headlamp HI is operating, check voltage between harness connector of LH front combination lamp and ground.

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

OK or NG

OK >> Check headlamp bulb.

NG >> Replace daytime light control unit.



Headlamp LO Does Not Illuminate (Both Sides)

AKS004QI

1. INSPECTION 1: IPDM E/R AND HEADLAMP

1. Start auto active test. Refer to [PG-21, "Auto Active Test"](#).
2. Check whether headlamp LO operates.

OK or NG

OK >> GO TO 4.

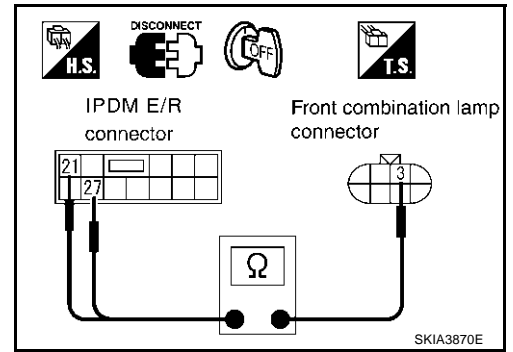
NG >> GO TO 2.

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

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)	



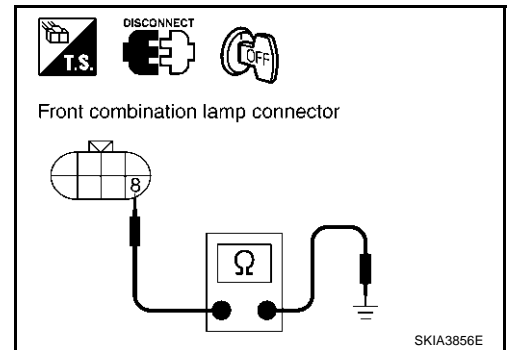
OK or NG

- 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)		Yes
LH	E41	8 (B/W)		



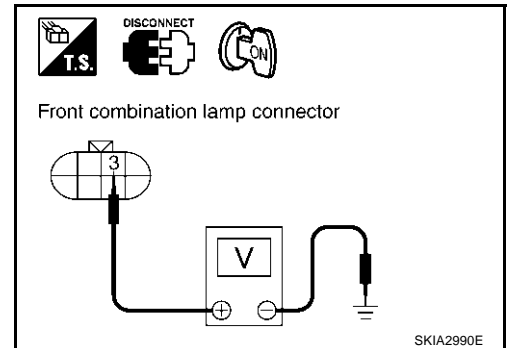
OK or NG

- 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-21, "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 (+)			(-)	
Connector	Terminal (Wire color)			
RH	E24	3 (R)		Ground Battery voltage
LH	E41	3 (R/B)		



OK or NG

- OK >> Inspect headlamp bulbs. (Standard models)
 >> Inspect headlamp harness and connectors, ballasts (HID control unit), and xenon bulbs. (Xenon models)
 NG >> Replace IPDM E/R.

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

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-16, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#).

OPEN DETECT 1 - 5>> Combination Switch System malfunction. Refer to [LT-125, "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 to [BCS-23, "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-23, "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

1. CHECK BULB

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

OK or NG

OK >> GO TO 2.

NG >> ● Standard models: Replace bulb of lamp.

● Xenon models:

- (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)

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

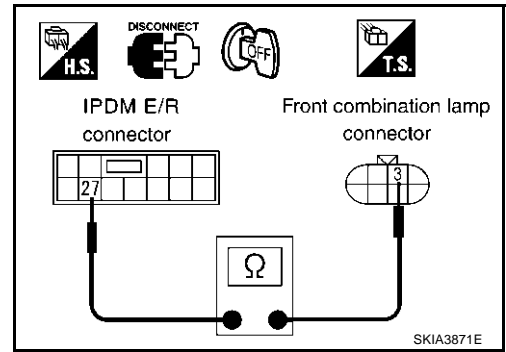
2. INSPECTION: IPDM E/R AND HEADLAMP

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

OK or NG

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



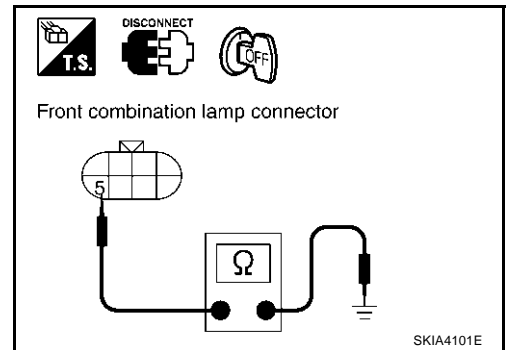
3. INSPECTION: HEADLAMP AND GROUND

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	5 (B)	Yes

OK or NG

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



LH LO Does Not Illuminate But LH HI Illuminates

1. CHECK BULB

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

OK or NG

- OK >> GO TO 2.
 NG >> ● Standard models: Replace bulb of lamp.
- Xenon models:
 - (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)

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

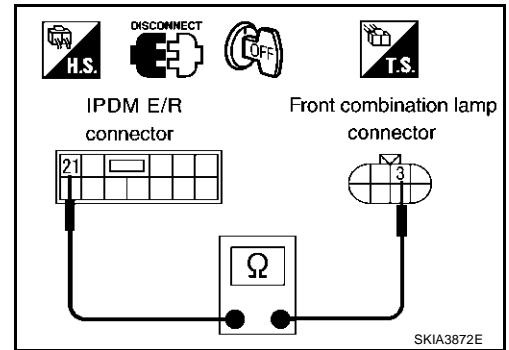
2. INSPECTION: IPDM E/R AND HEADLAMP

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.



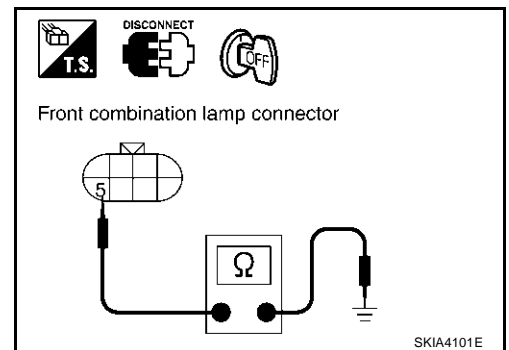
3. INSPECTION: HEADLAMP AND GROUND

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	5 (B)		Yes

OK or NG

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



Aiming Adjustment

Refer to [LT-27, "Aiming Adjustment"](#) in "HEAD LAMP (FOR USA)".

Bulb Replacement

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

Removal and Installation

Refer to [LT-30, "Removal and Installation"](#) in "HEAD LAMP (FOR USA)".

Disassembly and Assembly

Refer to [LT-31, "Disassembly"](#), [LT-32, "Assembly"](#) in "HEAD LAMP (FOR USA)".

A
B
C
D
E
F
G
H
I
J
L
M

LT

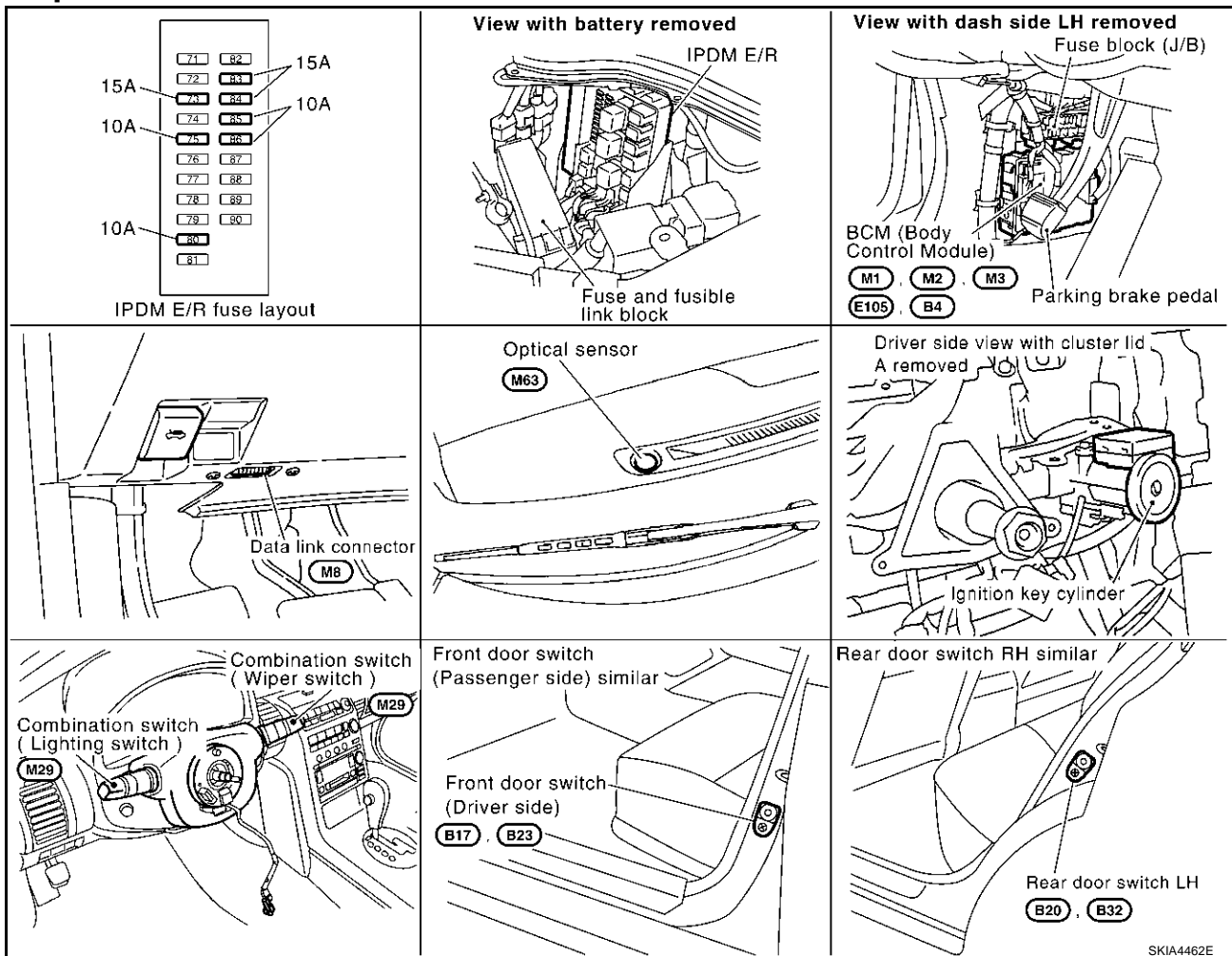
AUTO LIGHT SYSTEM

AUTO LIGHT SYSTEM

PFP:28491

Component Parts and Harness Connector Location

AKS005JE



SKIA4462E

System Description

AKS005JF

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-75, "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-33, "System Description"](#) (with headlamps for Canada).

AUTO LIGHT SYSTEM

COMBINATION SWITCH READING FUNCTION

Refer to [LT-120, "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

AKS005JG

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

AKS00C4H

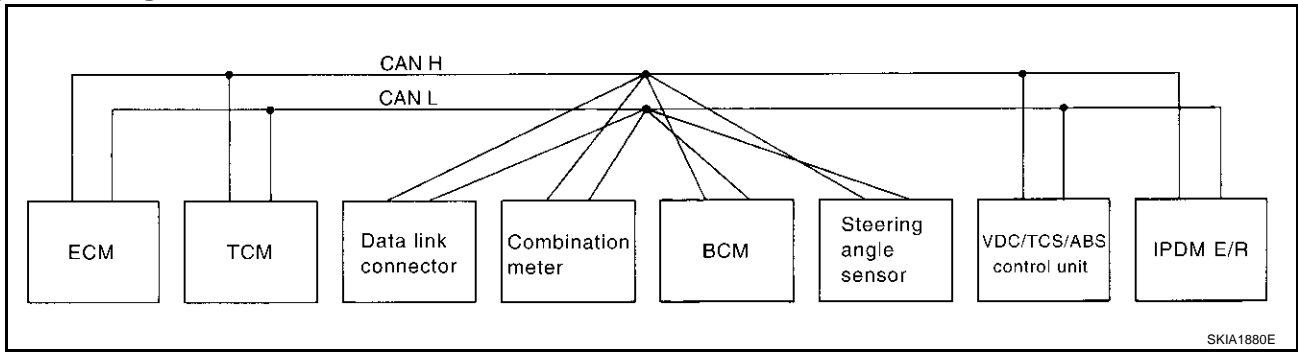
Body type	Sedan	
Axle	2WD	
Engine	VQ35DE	
Transmission	A/T	M/T
Brake control	VDC	
CAN communication unit		
ECM	×	×
TCM	×	
Data link connector	×	×
Combination meter	×	×
BCM	×	×
Steering angle sensor	×	×
VDC/TCS/ABS control unit	×	×
IPDM E/R	×	×
CAN communication type	LT-66, "TYPE 1"	LT-67, "TYPE 2"

×: Applicable

AUTO LIGHT SYSTEM

TYPE 1

System Diagram



Input/Output Signal Chart

T: Transmit R: Receive

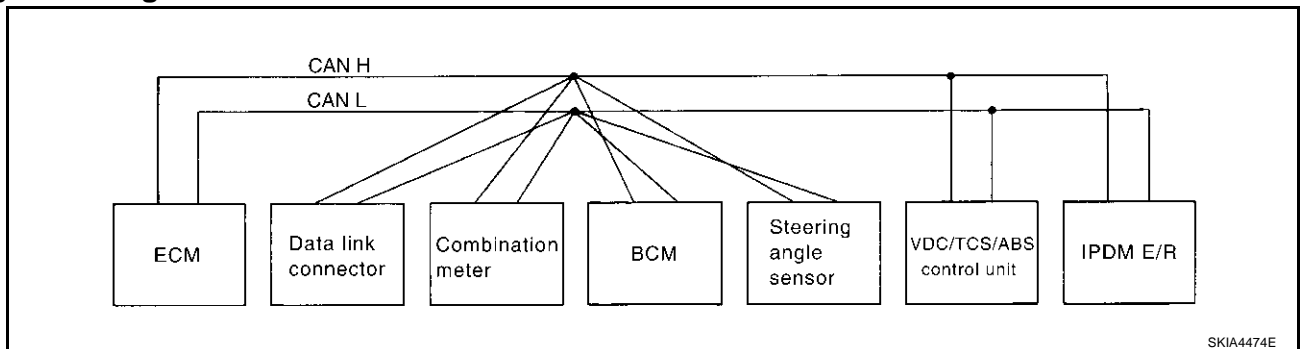
Signals	ECM	TCM	Combina- tion meter	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R
Engine torque signal	T	R					
Engine speed signal	T	R	R			R	
Engine coolant temperature signal	T	R	R				
Accelerator pedal position signal	T	R				R	
Closed throttle position signal	T	R					
Wide open throttle position signal	T	R					
Battery voltage signal	T	R					
Stop lamp switch signal		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	
A/C 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	R						T
Position lights request signal			R	T			R
Low beam request signal				T			R
Low beam status signal	R						T
High beam request signal			R	T			R
High beam status signal	R						T
Front fog lights request signal				T			R
Vehicle speed signal	R	R	R	R		T	
Sleep request 1 signal			R	T			
Sleep request 2 signal				T			R
Wake up request 1 signal			R	T			R

AUTO LIGHT SYSTEM

Signals	ECM	TCM	Combina- tion meter	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R
Wake up request 2 signal			R	T			R
Door switch signal (without naviga- tion 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			
ASCD SET lamp signal	T		R				
ASCD CRUISE lamp signal	T		R				
ASCD OD cancel request signal	T	R					
ASCD operation signal	T	R					
Output shaft 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 sig- nal	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	

TYPE 2

System Diagram



AUTO LIGHT SYSTEM

Input/Output Signal Chart

T: Transmit R: Receive

Signals	ECM	Combina- tion 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				
A/C 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			
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	

AUTO LIGHT SYSTEM

Major Components and Functions

AKS005JI

Components	Functions
BCM	<ul style="list-style-type: none">● 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	<ul style="list-style-type: none">● Converts ambient light (lux) to voltage, and sends it to BCM. (Detects lightness of 50 to 1,300 lux)

A

B

C

D

E

F

G

H

I

J

LT

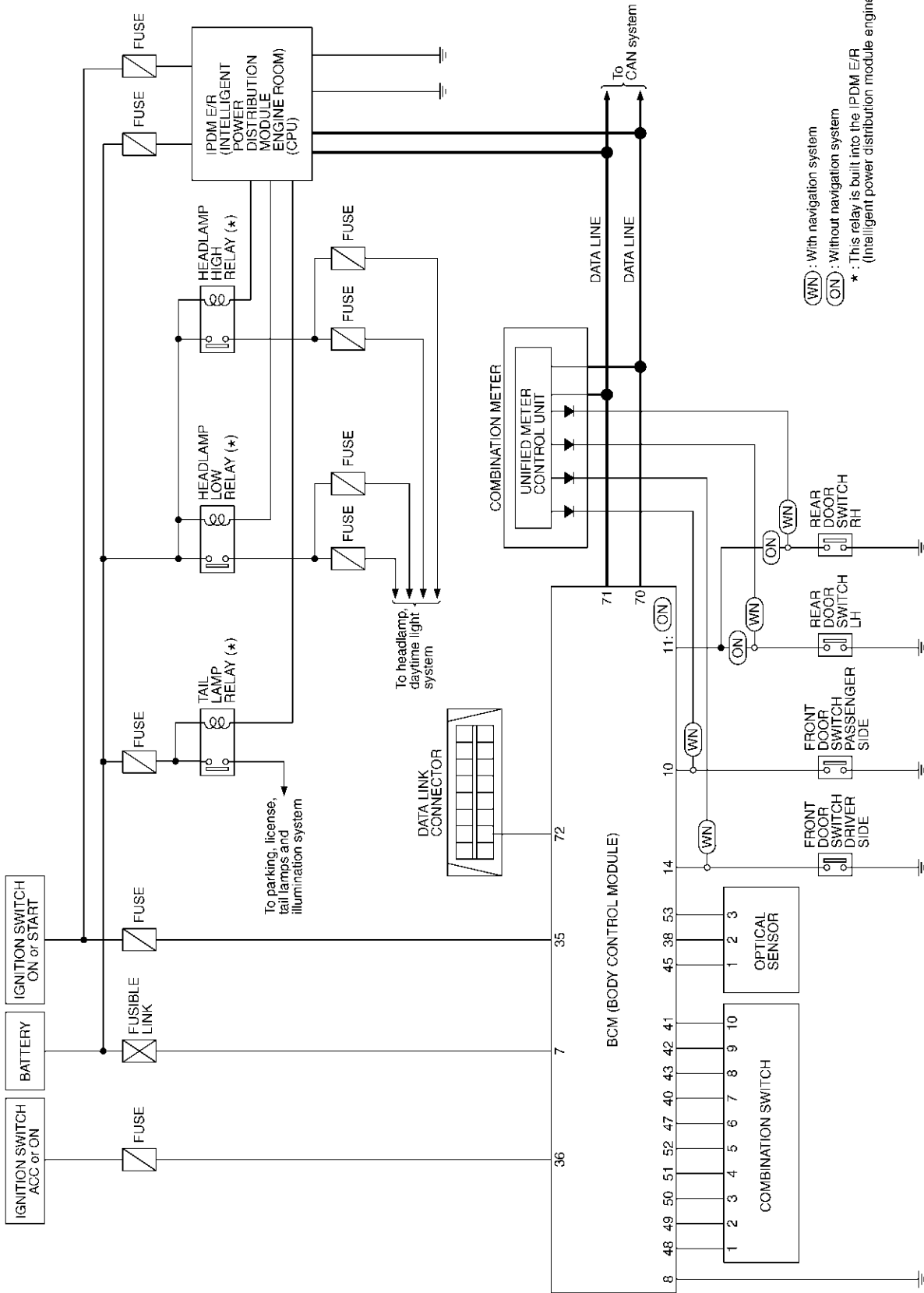
L

M

AUTO LIGHT SYSTEM

Schematic

AKS005JJ



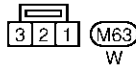
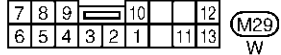
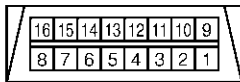
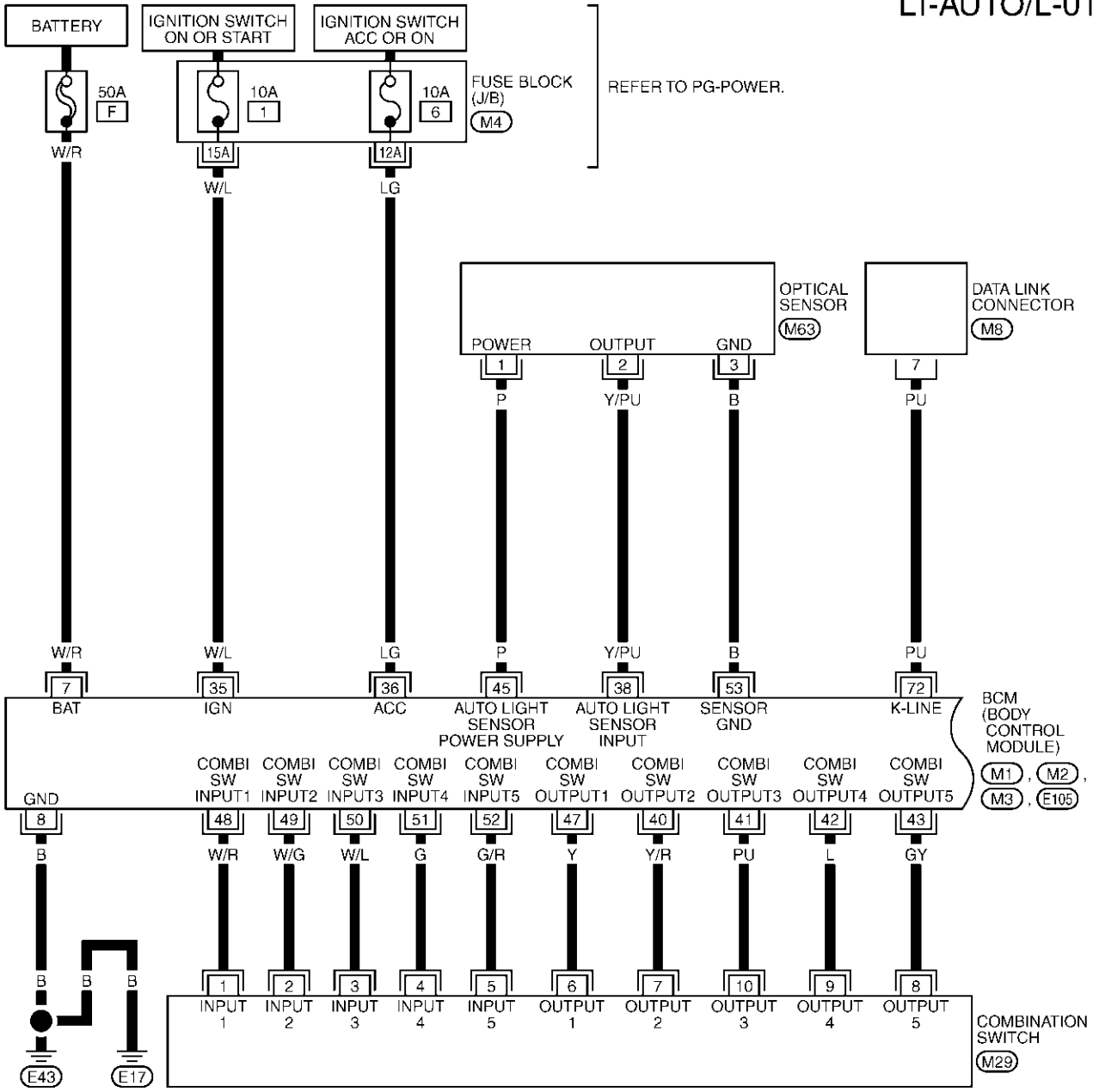
TKWT0293E

AUTO LIGHT SYSTEM

Wiring Diagram — AUTO/L —

AKS005JK

LT-AUTO/L-01



REFER TO THE FOLLOWING.

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

(M1), (M2), (M3), (E105) - ELECTRICAL UNITS

TKWT0691E

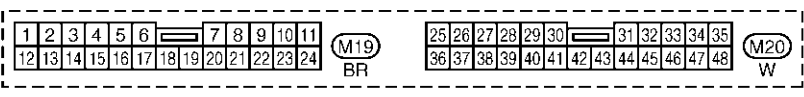
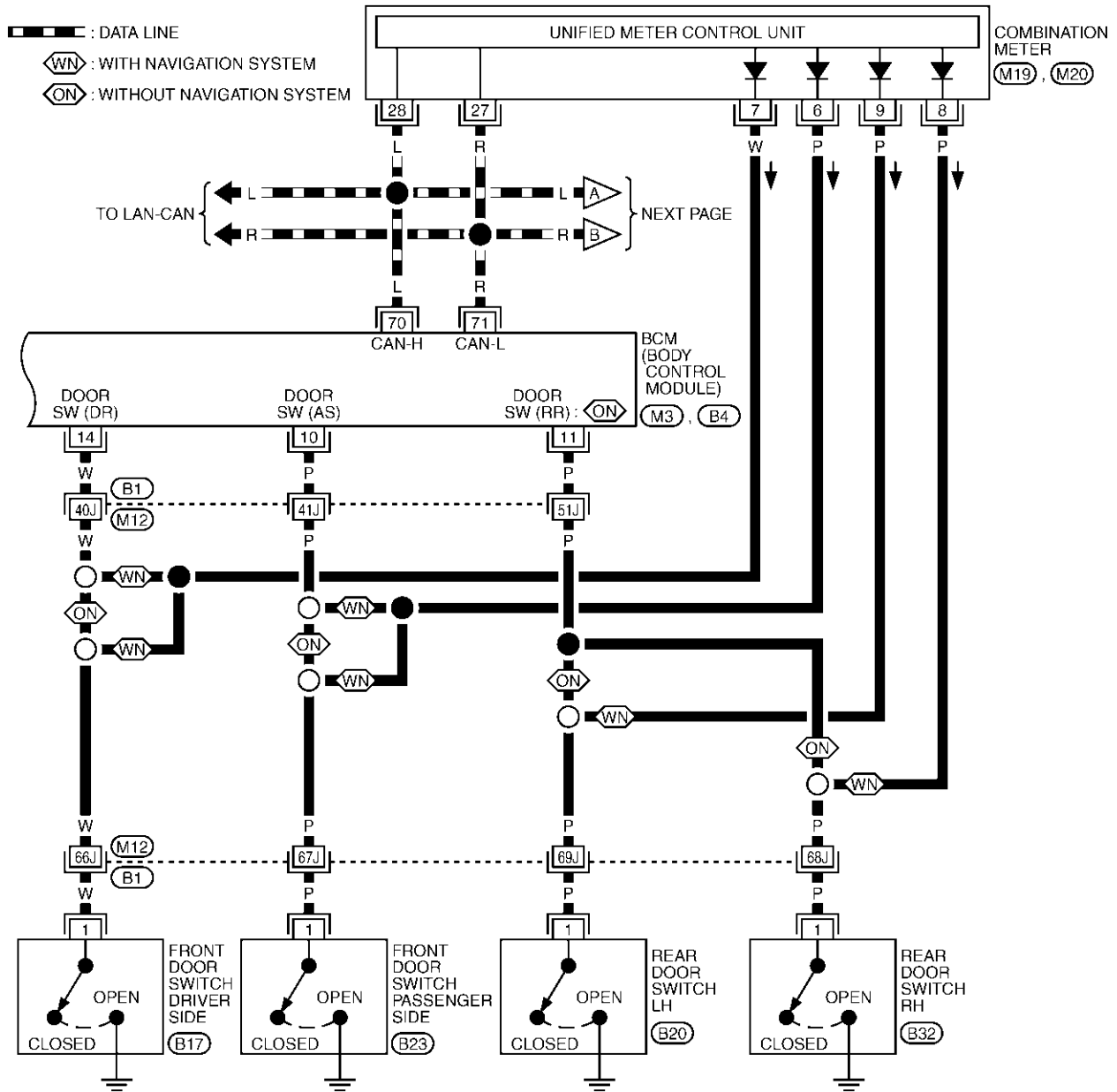
AUTO LIGHT SYSTEM

LT-AUTO/L-02

▬ : DATA LINE

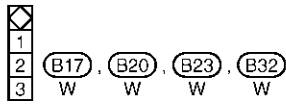
◊WN : WITH NAVIGATION SYSTEM

◊ON : WITHOUT NAVIGATION SYSTEM



REFER TO THE FOLLOWING.

- ◊B1 -SUPER MULTIPLE JUNCTION (SMJ)
- ◊M3, ◊B4 -ELECTRICAL UNITS

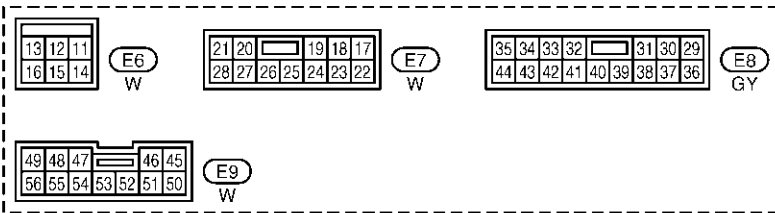
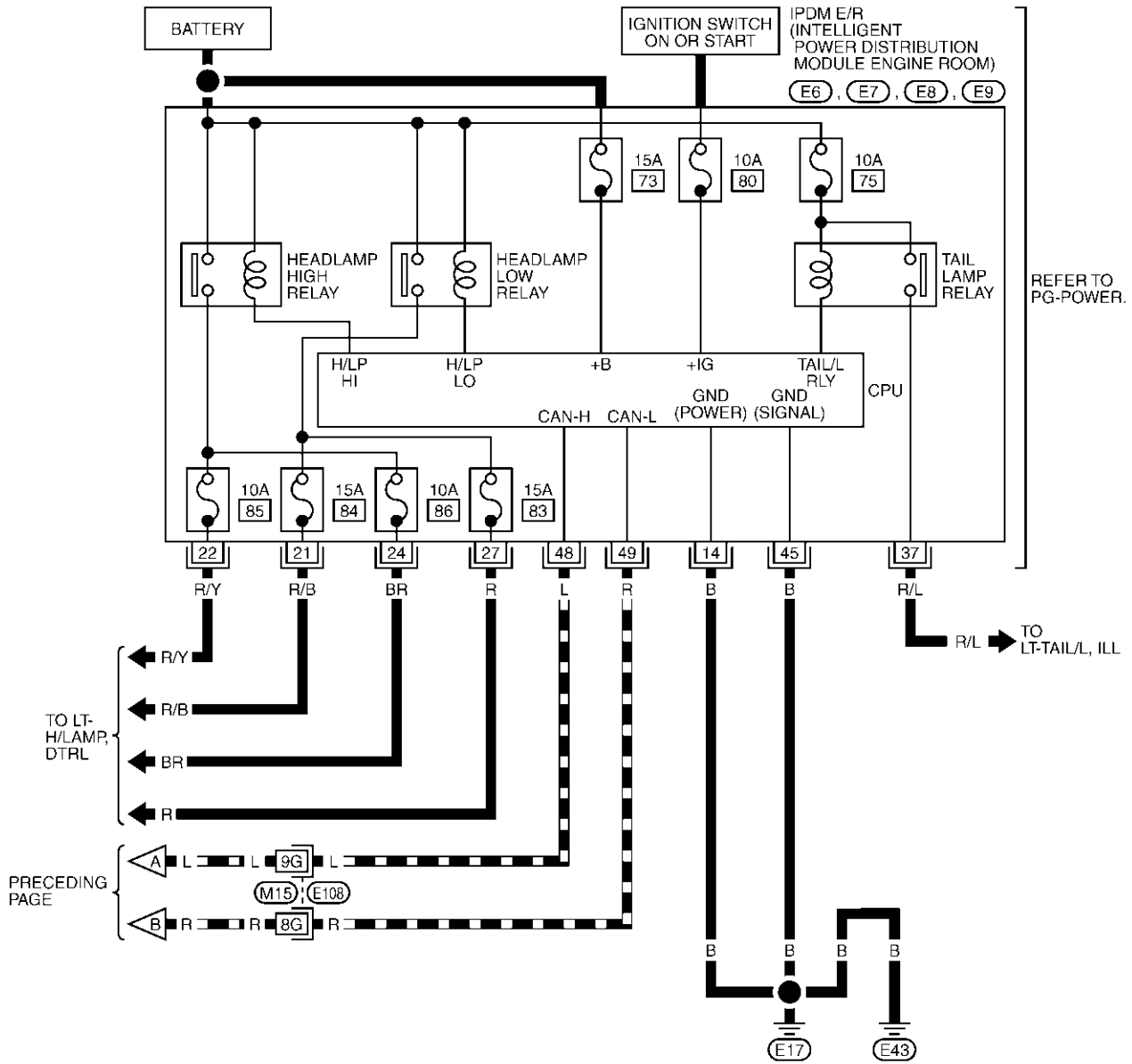


TKWT0692E

AUTO LIGHT SYSTEM

LT-AUTO/L-03

▬ : DATA LINE



REFER TO THE FOLLOWING.

E108 -SUPER MULTIPLE JUNCTION (SMJ)

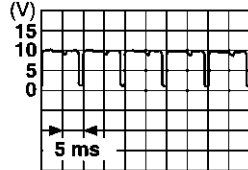
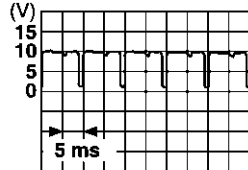


TKWT0693E

AUTO LIGHT SYSTEM

Terminals and Reference Value for BCM

AKS005JL

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	Front door switch Passenger side signal	OFF	Front door switch Passenger side	ON (open)	Approx. 0V
					OFF (closed)	Battery voltage
11	P	Rear door switch signal	OFF	Rear door switch LH or RH	ON (open)	Approx. 0V
					OFF (closed)	Battery voltage
14	W	Front door switch Driver side signal	OFF	Front door switch Driver side	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		
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		
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.

AUTO LIGHT SYSTEM

Terminals and Reference Values for IPDM E/R

AKS005JM

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

AKS005JN

1. Confirm the trouble symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-64, "System Description"](#) .
3. Carry out the Preliminary Check. Refer to [LT-75, "Preliminary Inspection"](#) .
4. Check symptom and repair or replace the cause of malfunction. Refer to [LT-79, "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

AKS005JO

SETTING CHANGE FUNCTIONS

- Sensitivity of automatic light system can be adjusted using CONSULT-II. Refer to [LT-77, "WORK SUPPORT"](#) .

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown fuses.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	F
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
IPDM E/R	Battery	83
		84
		85
		86

Refer to [LT-71, "Wiring Diagram — AUTO/L —"](#) .

OK or NG

OK >> GO TO 2.

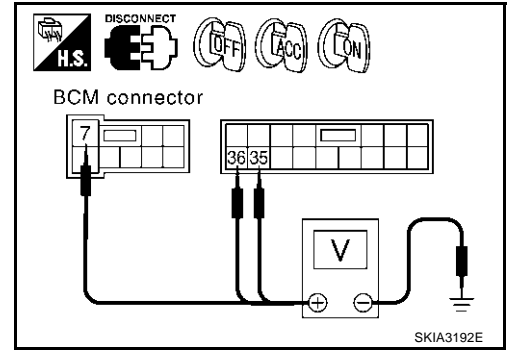
NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to [PG-3, "POWER SUPPLY ROUTING CIRCUIT"](#) .

AUTO LIGHT SYSTEM

2. CHECK POWER SUPPLY CIRCUIT

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

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.

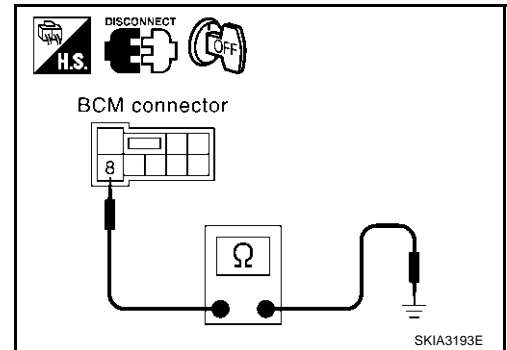
3. CHECK GROUND CIRCUIT

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

CONSULT-II performs the following functions communicating with BCM.

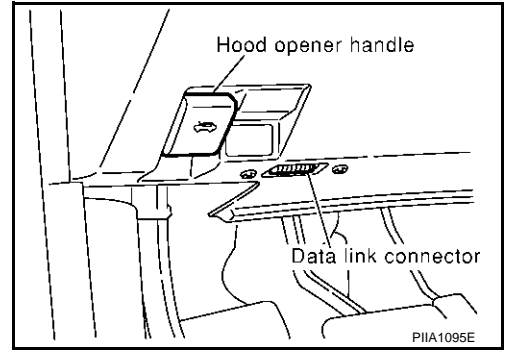
BCM diagnosis part	Check item, diagnosis mode	Description
HEAD LAMP	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending driving signal to them.
BCM	CAN DIAG SUPPORT MNTR	The result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

AKS005JP

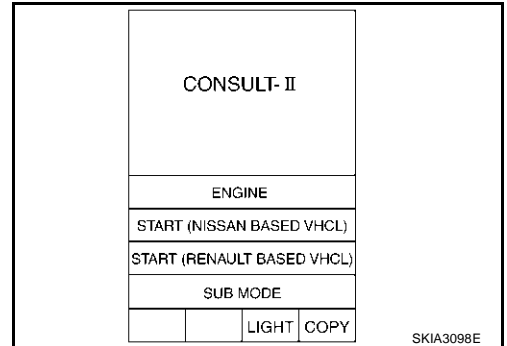
AUTO LIGHT SYSTEM

CONSULT-II BASIC OPERATION

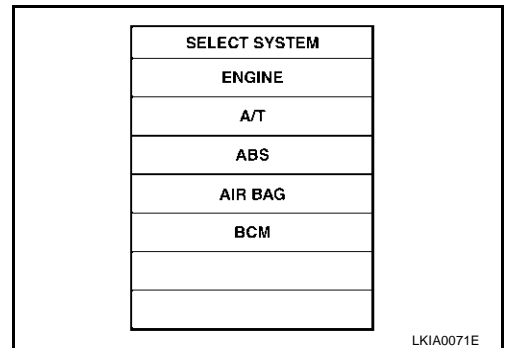
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



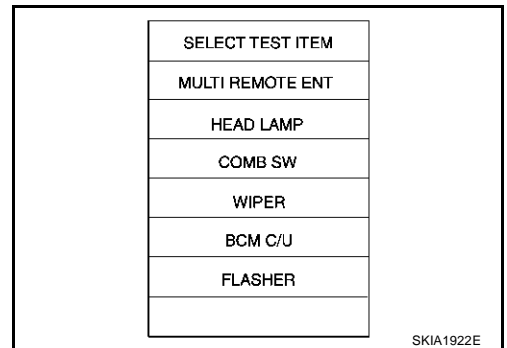
2. Touch "START (NISSAN BASED VHCL)".



3. Touch "BCM" on "SELECT SYSTEM" screen.
If "BCM" is not indicated, refer to [GI-38, "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".

AUTO LIGHT SYSTEM

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: ON/Others: OFF) of headlamp switch 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 "OFF"	Displays status of the rear doors as judged from the rear door switch signal. (Door is open: ON/Door is closed: 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.

AUTO LIGHT SYSTEM

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

AKS005JQ

Trouble phenomenon	Malfunction system and reference
<ul style="list-style-type: none"> ● Parking lamps and headlamps will not illuminate when outside of the vehicle becomes dark. (Lighting switch 1st position and 2nd position operate normally.) ● Parking lamps and headlamp will not go out when outside of the vehicle becomes light. (Lighting switch 1st position and 2nd position operate normally.) ● Headlamps go out when outside of the vehicle becomes light, but parking lamps stay on. 	<ul style="list-style-type: none"> ● Refer to LT-77, "WORK SUPPORT" . ● Refer to LT-79, "Lighting Switch Inspection" . ● Refer to LT-80, "Optical sensor System Inspection" . <p>If above systems are normal, replace BCM.</p>
Parking lamps illuminate when outside of the vehicle becomes dark, but headlamps stay off. (Lighting switch 1st position and 2nd position operate normally.)	<ul style="list-style-type: none"> ● Refer to LT-77, "WORK SUPPORT" . ● Refer to LT-80, "Optical sensor System Inspection" . <p>If above systems are normal, replace BCM.</p>
Auto light adjustment system will not operate. (Lighting switch AUTO, 1st position and 2nd position operate normally.)	<ul style="list-style-type: none"> ● Refer to LT-80, "Optical sensor System Inspection" . <p>If above system is normal, replace BCM.</p>
Auto light adjustment system of combination meter will not operate.	<ul style="list-style-type: none"> ● CAN communication line inspection between BCM and combination meter. Refer to BCS-16, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" .
Shut off delay feature will not operate.	<ul style="list-style-type: none"> ● Refer to BL-35, "Check Door Switch / With Navigation System" or BL-37, "Check Door Switch / Without Navigation System" . <p>If above system is normal, replace BCM.</p>

Lighting Switch Inspection

AKS005JR

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

OK or NG

OK >> INSPECTION END.

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

AUTO LIGHT SYSTEM

AKS005JS

Optical sensor System Inspection

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

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.

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

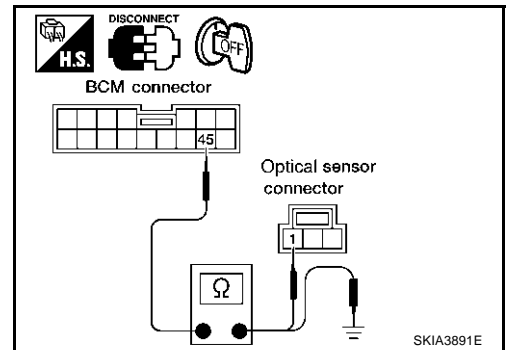
OK >> INSPECTION END.

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.

AUTO LIGHT SYSTEM

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

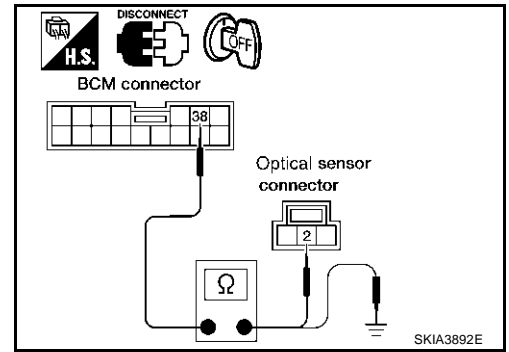
2. Check harness continuity (short circuit) between harness connector of BCM and ground.

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

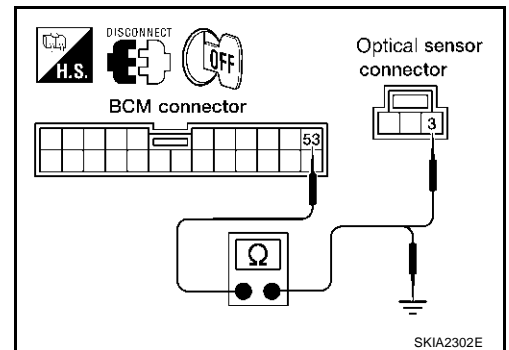
2. Check harness continuity (short circuit) between harness connector of BCM and ground.

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

OK or NG

OK >> GO TO 5.

NG >> Repair harness or connector.



A
B
C
D
E
F
G
H
I
J
LT
L
M

AUTO LIGHT SYSTEM

5. CHECK SENSOR VOLTAGE

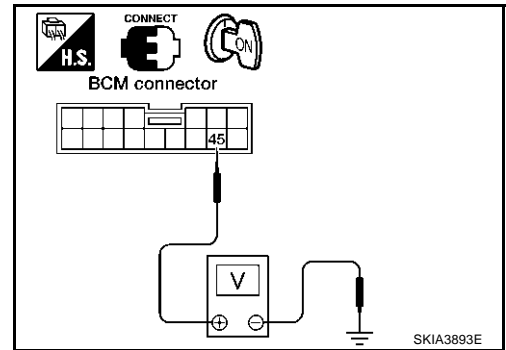
1. Connect BCM connector.
2. Turn ignition switch ON.
3. Check voltage between harness connector of BCM and ground.

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

OK or NG

OK >> Replace the optical sensor.

NG >> Replace BCM. Refer to [BCS-23, "Removal and Installation of BCM"](#) .



FRONT FOG LAMP

FRONT FOG LAMP

PF2:26150

System Description

AKS005JU

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

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

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

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

- to BCM (body control module) terminal 36
- through 10A fuse [No. 6, located in 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.

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 of the IPDM E/R grounds the coil side of the fog lamp relay. The fog lamp relay then directs power

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

Ground is supplied

- 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.

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.

A
B
C
D
E
F
G
H
I
J
LT
L
M

FRONT FOG LAMP

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

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

Ground is supplied

- to front combination lamp LH terminal 8
- through daytime light control unit terminal 7
- to daytime light control unit terminal 9
- through grounds E17 and E43
- to front combination lamp RH terminal 8
- through grounds E17 and E43.

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

COMBINATION SWITCH READING FUNCTION

Refer to [LT-120, "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

AKS005JV

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

AKS00C4I

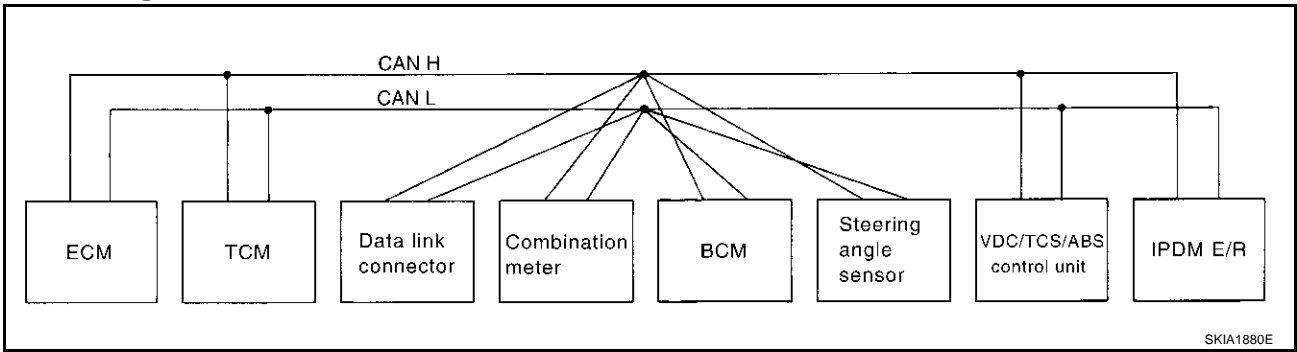
Body type	Sedan	
Axle	2WD	
Engine	VQ35DE	
Transmission	A/T	M/T
Brake control	VDC	
CAN communication unit		
ECM	×	×
TCM	×	
Data link connector	×	×
Combination meter	×	×
BCM	×	×
Steering angle sensor	×	×
VDC/TCS/ABS control unit	×	×
IPDM E/R	×	×
CAN communication type	LT-85, "TYPE 1"	LT-86, "TYPE 2"

×: Applicable

FRONT FOG LAMP

TYPE 1

System Diagram



Input/Output Signal Chart

T: Transmit R: Receive

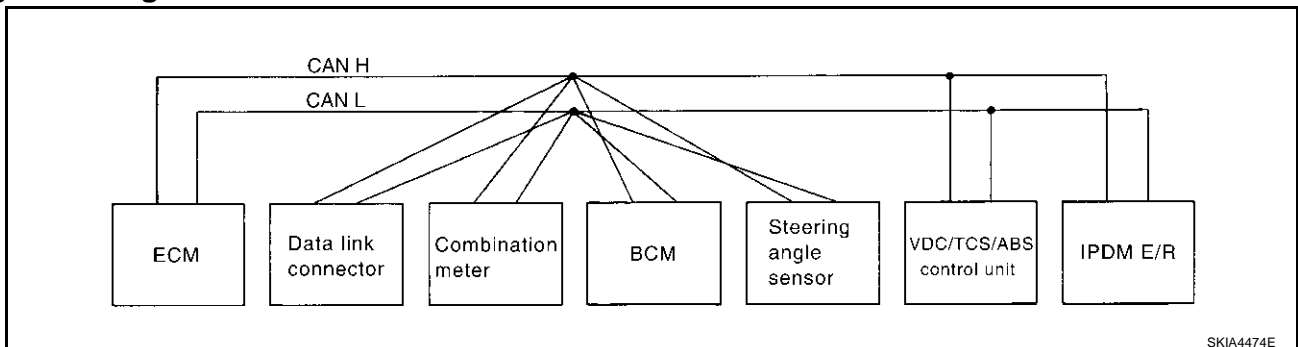
Signals	ECM	TCM	Combina- tion meter	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R
Engine torque signal	T	R					
Engine speed signal	T	R	R			R	
Engine coolant temperature signal	T	R	R				
Accelerator pedal position signal	T	R				R	
Closed throttle position signal	T	R					
Wide open throttle position signal	T	R					
Battery voltage signal	T	R					
Stop lamp switch signal		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	
A/C 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	R						T
Position lights request signal			R	T			R
Low beam request signal				T			R
Low beam status signal	R						T
High beam request signal			R	T			R
High beam status signal	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			R

FRONT FOG LAMP

Signals	ECM	TCM	Combina- tion meter	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R
Wake up request 2 signal			R	T			R
Door switch signal (without naviga- tion 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			
ASCD SET lamp signal	T		R				
ASCD CRUISE lamp signal	T		R				
ASCD OD cancel request signal	T	R					
ASCD operation signal	T	R					
Output shaft 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 sig- nal	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	

TYPE 2

System Diagram



FRONT FOG LAMP

Input/Output Signal Chart

T: Transmit R: Receive

Signals	ECM	Combina- tion 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				
A/C 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			
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	

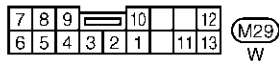
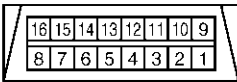
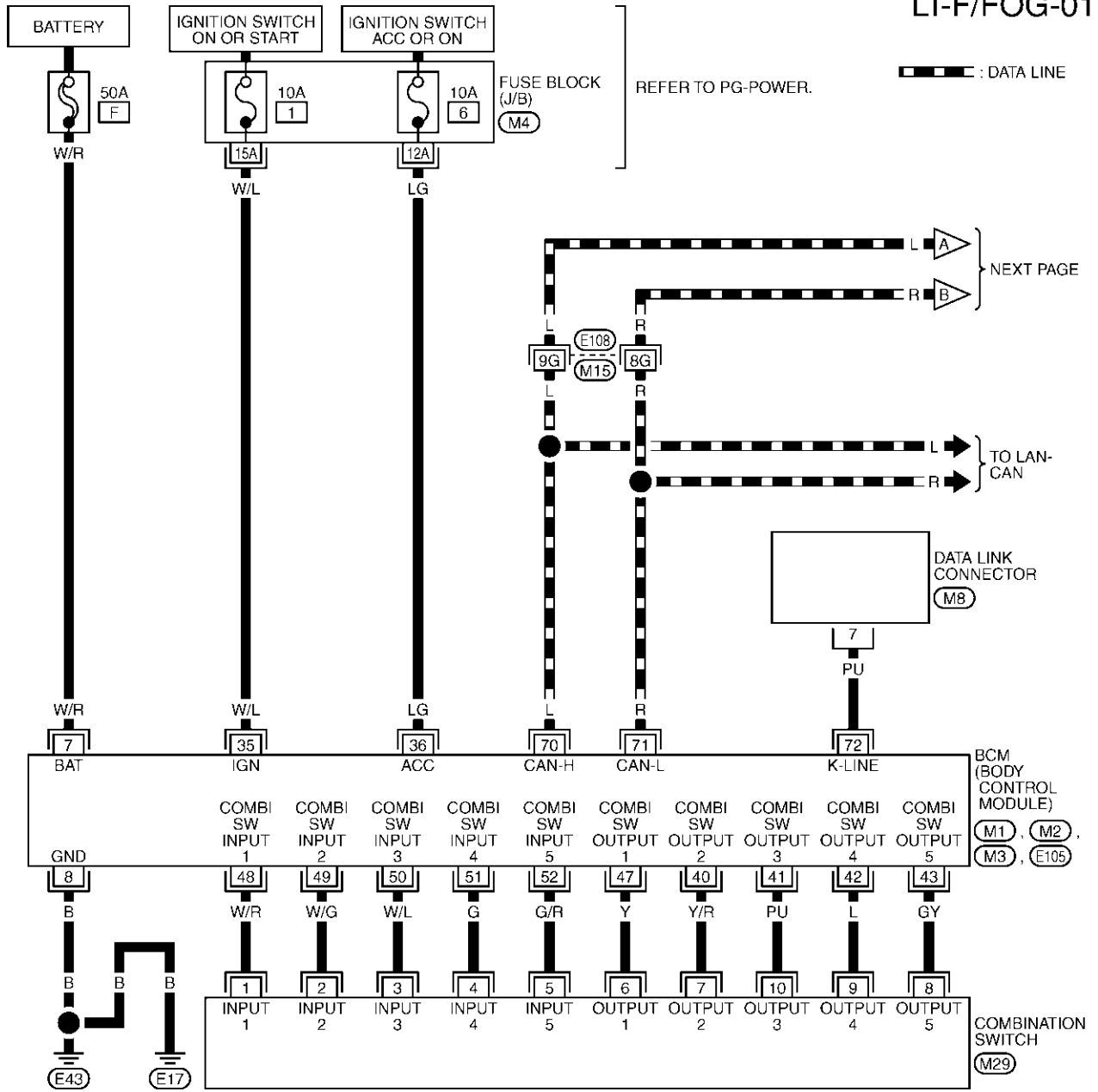
A
B
C
D
E
F
G
H
I
J
LT
L
M

FRONT FOG LAMP

Wiring Diagram — F/FOG — FOR USA

AKS005JX

LT-F/FOG-01

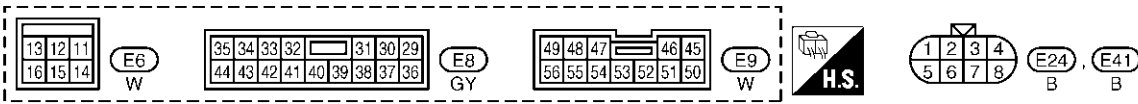
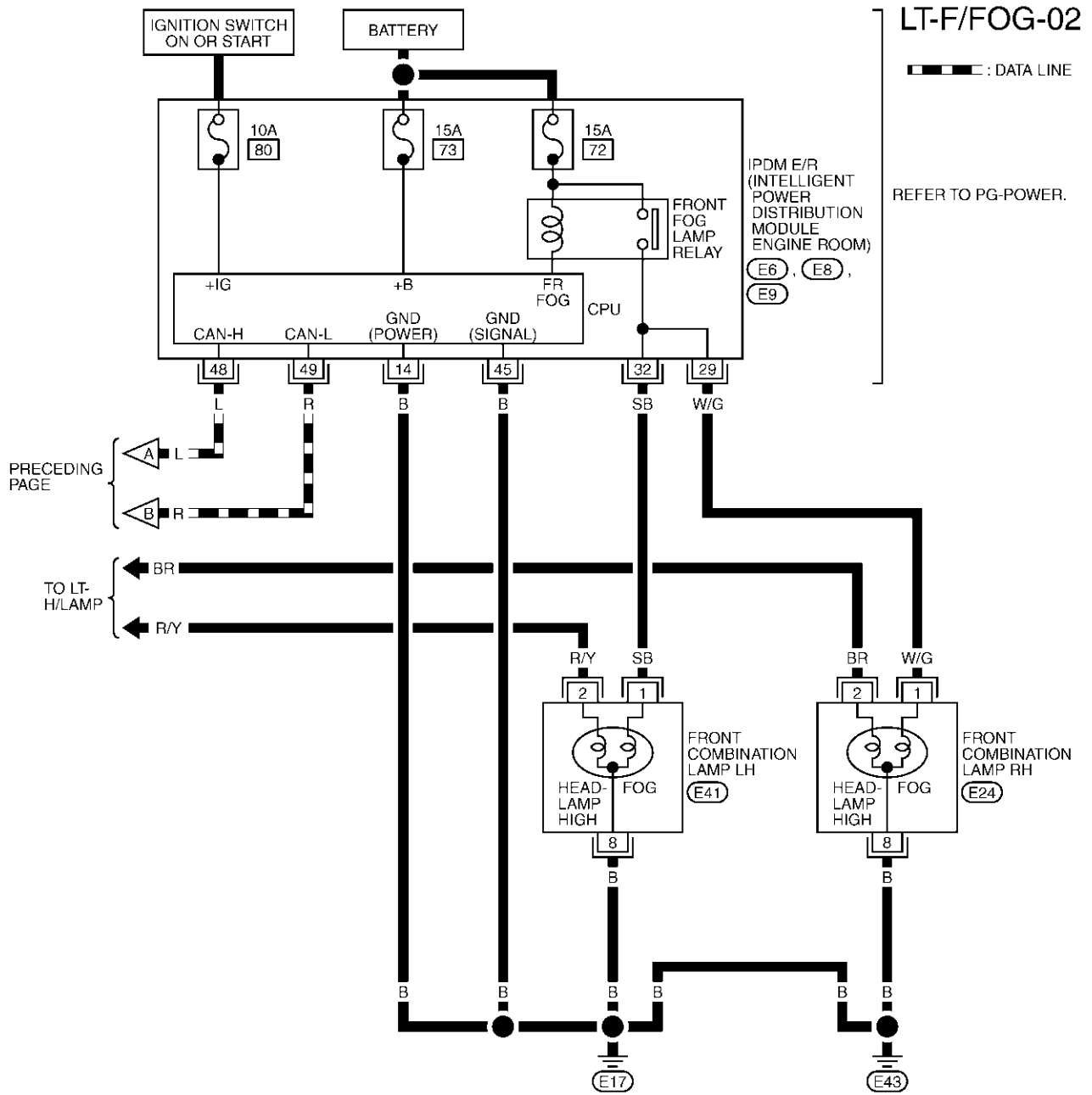


REFER TO THE FOLLOWING.

- (E108) -SUPER MULTIPLE JUNCTION (SMJ)
- (M4) -FUSE BLOCK-JUNCTION BOX (J/B)
- (M1), (M2), (M3), (E105) -ELECTRICAL UNITS

TKWT0318E

FRONT FOG LAMP

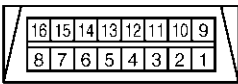
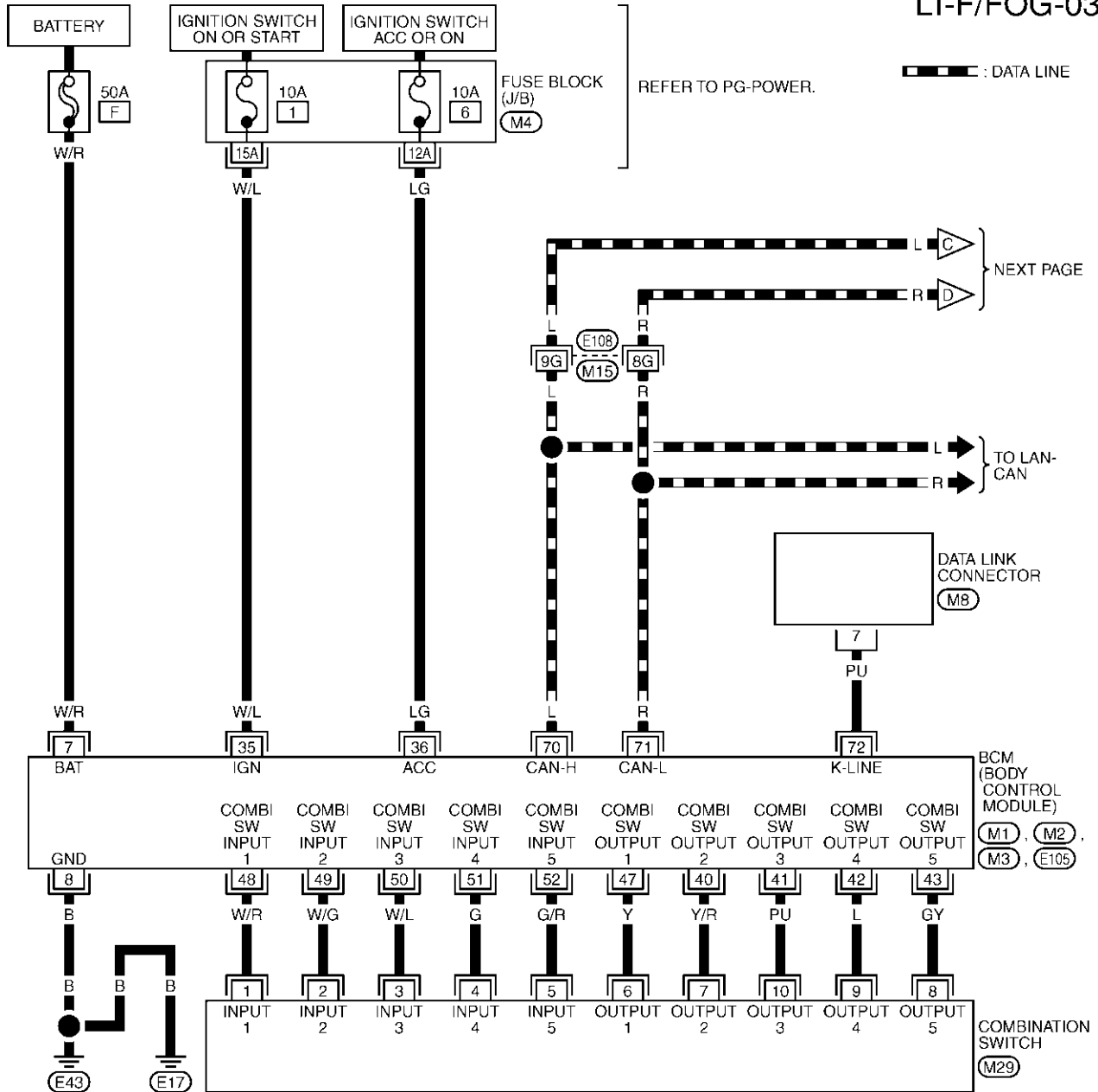


TKWT0694E

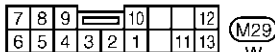
FRONT FOG LAMP

FOR CANADA

LT-F/FOG-03



(M8)
W



(M29)
W

REFER TO THE FOLLOWING.

(E108) -SUPER MULTIPLE JUNCTION (SMJ)

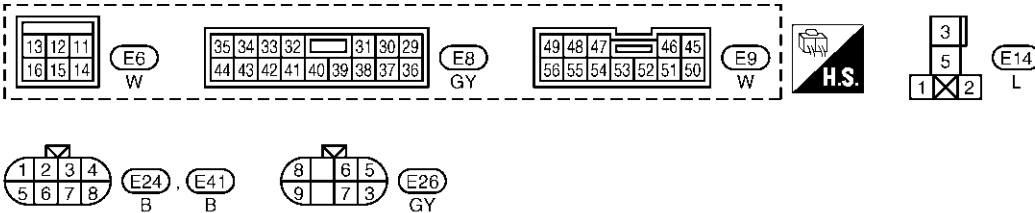
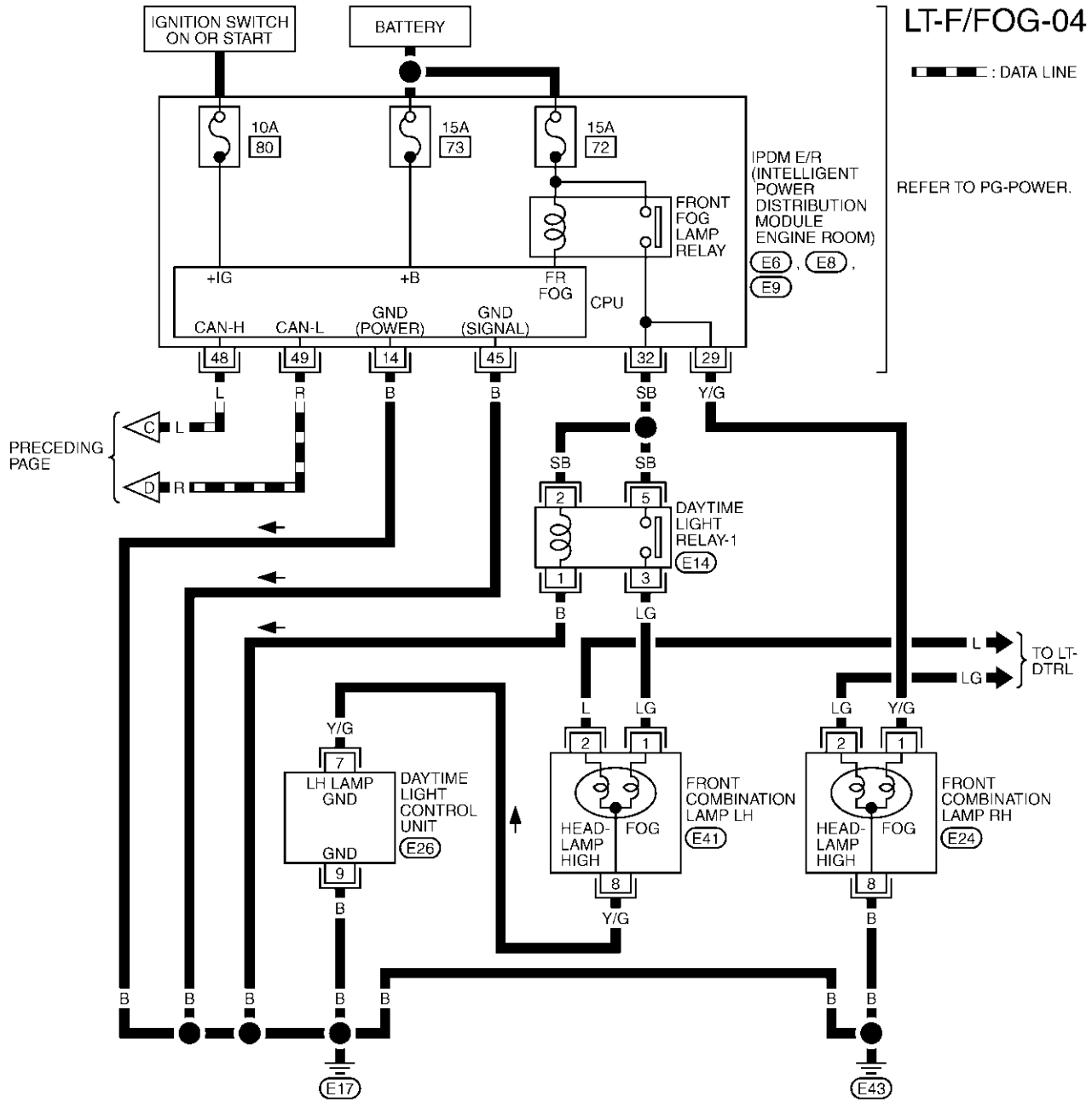
(M4) -FUSE BLOCK-JUNCTION BOX (J/B)

(M1), (M2), (M3), (E105)

-ELECTRICAL UNITS

TKWT0320E

FRONT FOG LAMP

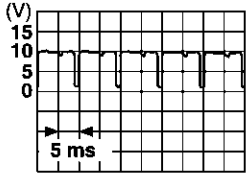


TKWT0695E

FRONT FOG LAMP

Terminals and Reference Value for BCM

AKS005JY

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	
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	—	—	—

SKIA1119J

Terminals and Reference Values for IPDM E/R

AKS005JZ

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

AKS005K0

1. Confirm the trouble symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-83, "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

FRONT FOG LAMP

Preliminary Inspection CHECK POWER SUPPLY AND GROUND CIRCUIT

AKS005K1

1. CHECK FUSES

- Check for blown fuses.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	F
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
IPDM E/R	Battery	72

Refer to [LT-88, "Wiring Diagram — F/FOG —"](#).

OK or NG

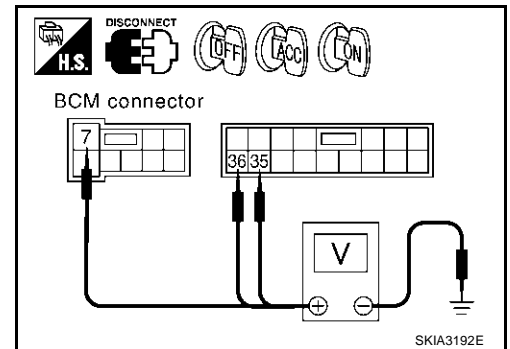
OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of problem before installing new fuse. Refer to [PG-3, "POWER SUPPLY ROUTING CIRCUIT"](#).

2. CHECK POWER SUPPLY CIRCUIT

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

Terminals		(-)	Ignition switch position		
(+)			OFF	ACC	ON
Connector	Terminal (Wire color)	Ground	OFF	ACC	ON
E105	7 (W/R)		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

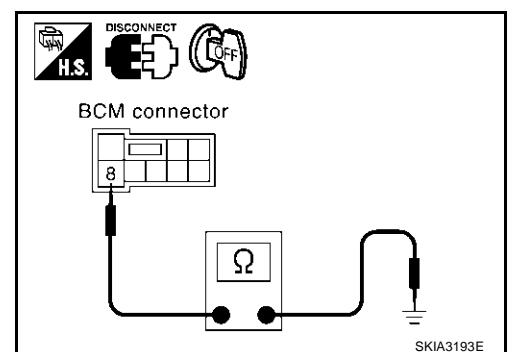
OK >> GO TO 3.

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)	Ground	
E105	8 (B)	Ground	Yes



OK or NG

OK >> INSPECTION END.

NG >> Check harness ground circuit.

CONSULT-II Function

AKS005K2

Refer to [LT-19, "CONSULT-II Function"](#) in HEAD LAMP (FOR USA).

Refer to [LT-50, "CONSULT-II Function"](#) in HEAD LAMP (FOR CANADA).

FRONT FOG LAMP

AKS005K3

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

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

1. Start auto active test. Refer to [PG-21, "Auto Active Test"](#).
2. Check whether front fog lamps operate.

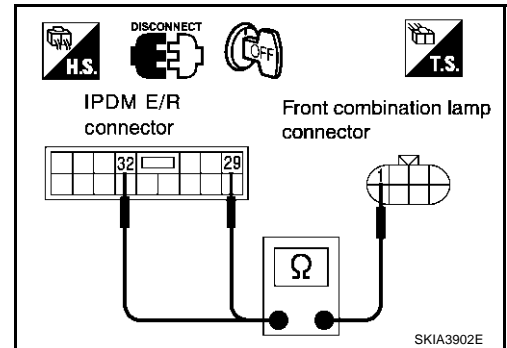
OK or NG

- 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)	



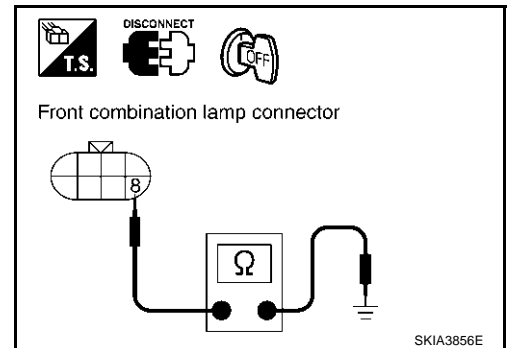
OK or NG

- 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	8 (B)	Ground	Yes
LH	E41			



OK or NG

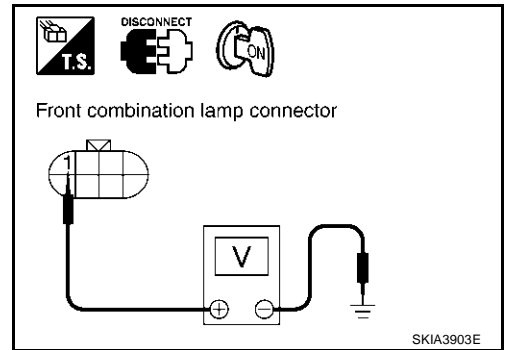
- OK >> GO TO 4.
 NG >> Repair harness or connector.

FRONT FOG LAMP

4. CHECK IPDM E/R

1. Connect IPDM E/R connector.
2. Start auto active test. Refer to [PG-21, "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			(-)	Voltage
Front combination lamp (Front fog lamp) (+)				
Connector	Terminal (Wire color)		Ground	Battery voltage
RH	E24	1 (W/G)		
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-16, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#) .

OPEN DETECT 1 - 5>> Combination switch system malfunction. Refer to [LT-125, "Combination Switch Inspection According to Self-Diagnostic Results"](#) .

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

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-23, "Removal and Installation of BCM"](#) .
- NG >> Replace 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

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

1. CHECK INSPECTION

Inspect bulbs of lamps which do not illuminate.

OK or NG

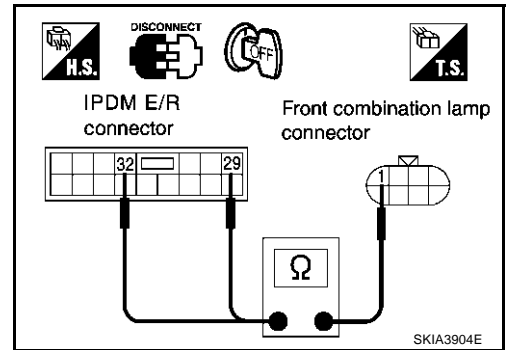
- OK >> GO TO 2.
- NG >> Replace front fog lamp bulb.

FRONT FOG LAMP

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)	



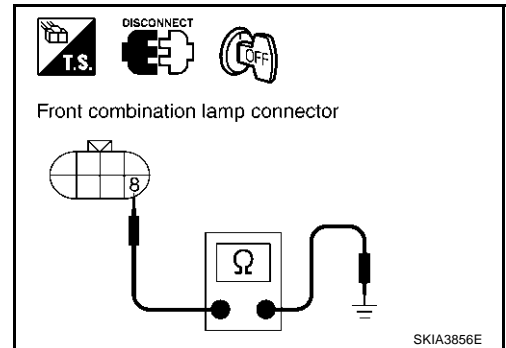
OK or NG

- 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)			8 (B)
RH	E24		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)

AKS005K5

1. INSPECTION: IPDM E/R AND HEADLAMPS

1. Start auto active test. Refer to [PG-21, "Auto Active Test"](#).
2. Check whether headlamp HI operates.

OK or NG

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

FRONT FOG LAMP

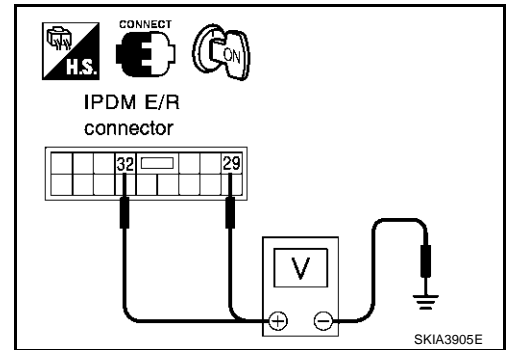
2. CHECK IPDM E/R

Start auto active test. Refer to [PG-21, "Auto Active Test"](#) . When front fog lamp relay is operating, check voltage between harness connector of IPDM E/R and ground.

Terminals		(-)	Voltage
IPDM E/R (+)			
Connector	Terminal (Wire color)		
E8	29 (Y/G)	Ground	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-16, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#) .
- OPEN DETECT 1 - 5>> Combination switch system malfunction. Refer to [LT-125, "Combination Switch Inspection According to Self-Diagnostic Results"](#) .

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

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-23, "Removal and Installation of BCM"](#) .
- NG >> Replace 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

LH Front Fog Lamp Does Not Illuminate (FOR CANADA)

1. CHECK BULB

Inspect bulb of lamps which do not illuminate.

OK or NG

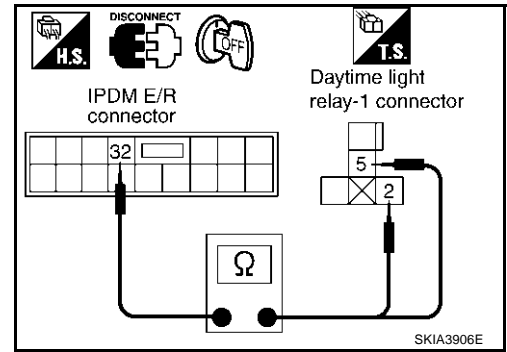
- OK >> GO TO 2.
- NG >> Replace front fog lamp bulb.

FRONT FOG LAMP

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)	



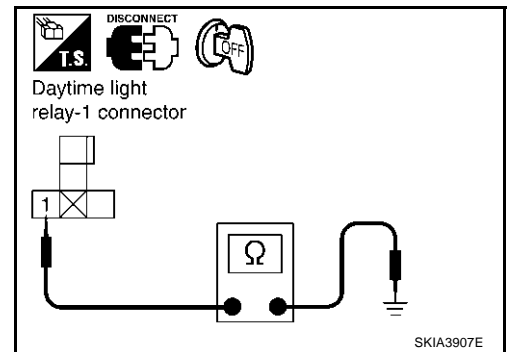
OK or NG

- 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



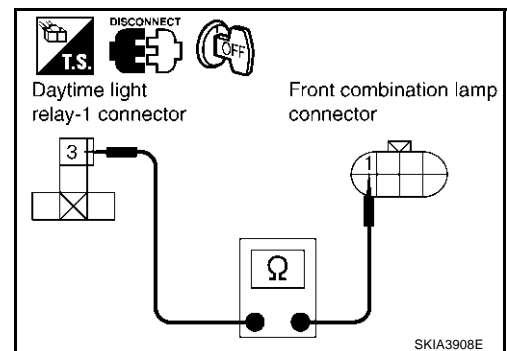
OK or NG

- 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.

FRONT FOG LAMP

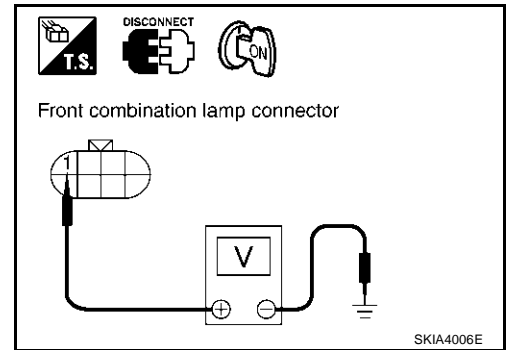
5. CHECK DAYTIME LIGHT RELAY-1

1. Connect IPDM E/R connector and daytime light relay-1.
2. Start auto active test. Refer to [PG-21, "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 (+)			
Connector	Terminal (Wire color)	Ground	Battery voltage
E41	1 (LG)		

OK or NG

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



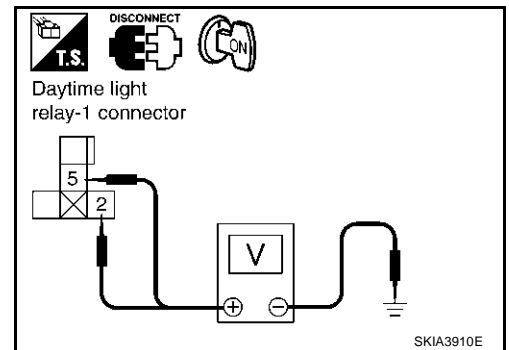
6. CHECK IPDM E/R

1. Turn ignition switch OFF.
2. Disconnect daytime light relay-1
3. Start auto active test. Refer to [PG-21, "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 (+)			
Connector	Terminal (Wire color)	Ground	Battery voltage
E14	5 (SB)		
	2 (SB)		

OK or NG

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



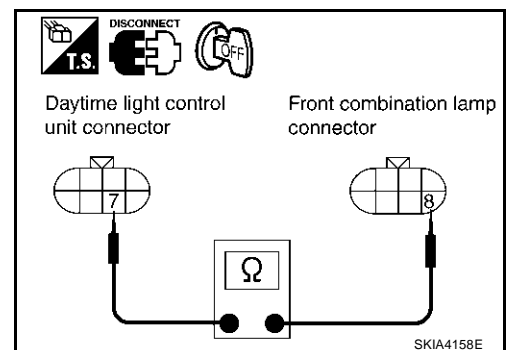
7. INSPECTION: HEADLAMP AND DAYTIME LIGHT CONTROL UNIT

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)	Yes
E26	7 (Y/G)	E41	8 (Y/G)	

OK or NG

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



FRONT FOG LAMP

8. INSPECTION: HEADLAMP AND DAYTIME LIGHT CONTROL UNIT

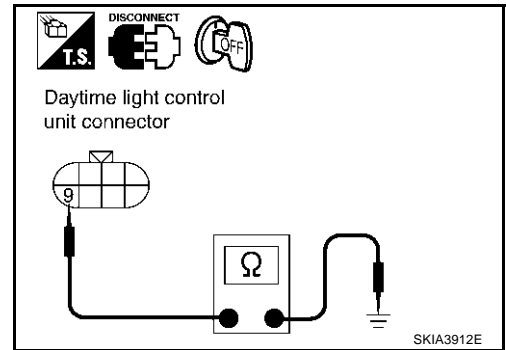
Check continuity between harness connector of daytime light control unit and ground.

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

OK or NG

OK >> Replace daytime light control unit.

NG >> Repair harness or connector.



RH Front Fog Lamp Does Not Illuminate (FOR CANADA)

AKS005K7

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

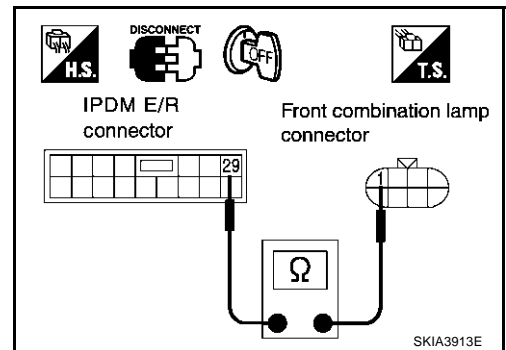
1. Disconnect IPDM E/R connector and RH front combination lamp connector.
2. Check continuity between harness connector of IPDM E/R and harness connector of RH front combination lamp.

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

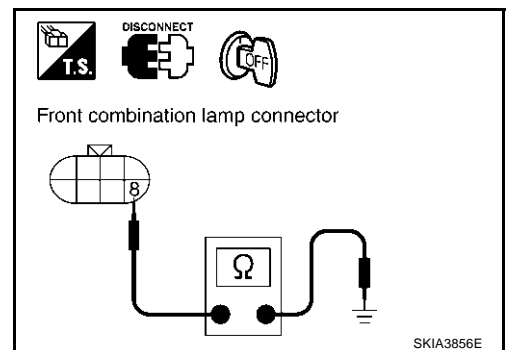
Check continuity between harness connector of RH front combination lamps and ground.

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

OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness or connector.



Bulb Replacement

AKS005K8

Refer to [LT-28, "Bulb Replacement"](#) in "HEAD LAMP".

TURN SIGNAL AND HAZARD WARNING LAMPS

TURN SIGNAL AND HAZARD WARNING LAMPS

PFP:26120

System Description

AKS005KK

TURN SIGNAL OPERATION

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

- to BCM (body control module) terminal 35
- through 10A fuse [No. 1, located in fuse block (J/B)]
- to combination meter terminals 41 and 42
- through 10A fuse [No. 14, located in 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
- to rear combination lamp LH terminal 3.

Ground is supplied to the front combination lamp LH terminal 4 through grounds E17 and E43.

Ground is supplied to the rear combination lamp LH terminal 4 through grounds B103.

The BCM (body control module) 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 (body control module) 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
- to rear combination lamp RH terminal 3.

Ground is supplied to the front combination lamp RH terminal 4 through grounds E17 and E43.

Ground is supplied to the rear combination lamp RH terminal 4 through ground B103.

The BCM (body control module) 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 (body control module) 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 fuse and fusible link block], and
- to combination meter terminal 43
- through 10A fuse [No. 19, located in 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

A
B
C
D
E
F
G
H
I
J
LT
L
M

TURN SIGNAL AND HAZARD WARNING LAMPS

- through grounds M30 and M66.

When 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 3
- through BCM terminal 21
- to front combination lamp RH terminal 6
- to rear combination lamp RH terminal 3.

Ground is supplied

- to front combination lamp LH terminal 4 through grounds E17 and E43
- to front combination lamp RH terminal 4 through grounds E17 and E43
- to rear combination lamp LH terminal 4 through ground B103
- to 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 terminal 7
- through 50A fusible link [letter F, located in fuse and fusible link block], and
- to combination meter terminal 43
- through 10A fuse [No. 19, located in 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 remote keyless entry system is triggered by input from keyfob, BCM supplies power

- through BCM terminal 22
- to front combination lamp LH terminal 6
- to rear combination lamp LH terminal 3
- through BCM terminal 21
- to front combination lamp RH terminal 6
- to rear combination lamp RH terminal 3.

Ground is supplied

- to front combination lamp LH terminal 4 through grounds E17 and E43.
- to front combination lamp RH terminal 4 through grounds E17 and E43.
- to rear combination lamp LH terminal 4 through ground B103.
- to 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-120, "Combination Switch Reading Function"](#)

TURN SIGNAL AND HAZARD WARNING LAMPS

CAN Communication System Description

AKS005KL

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

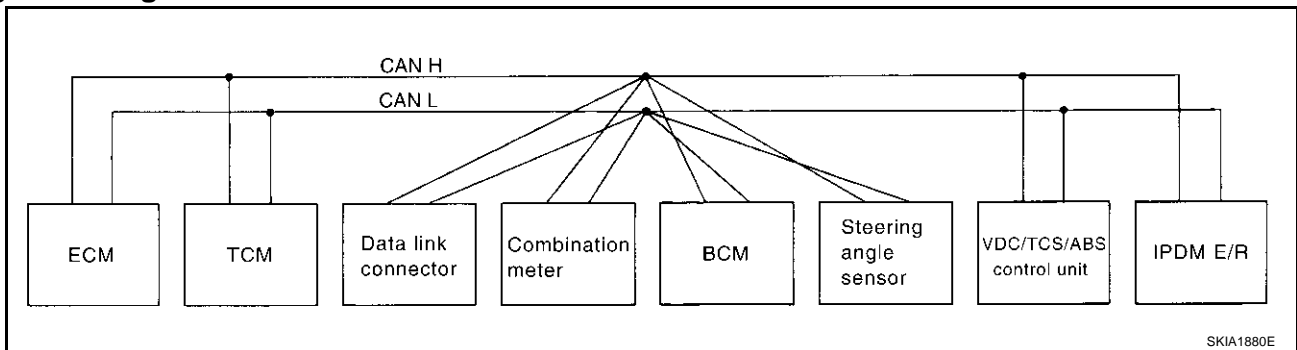
AKS00C4J

Body type	Sedan	
Axle	2WD	
Engine	VQ35DE	
Transmission	A/T	M/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-103, "TYPE 1"	LT-105, "TYPE 2"

×: Applicable

TYPE 1

System Diagram



Input/Output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Combina- tion meter	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R
Engine torque signal	T	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					

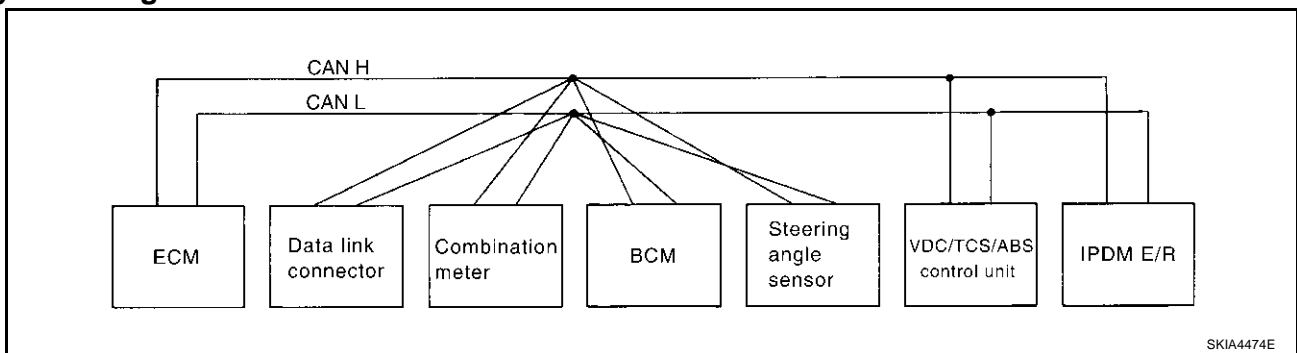
TURN SIGNAL AND HAZARD WARNING LAMPS

Signals	ECM	TCM	Combina- tion meter	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R
Stop lamp switch signal		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	
A/C 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	R						T
Position lights request signal			R	T			R
Low beam request signal				T			R
Low beam status signal	R						T
High beam request signal			R	T			R
High beam status signal	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			R
Wake up request 2 signal			R	T			R
Door switch signal (without naviga- tion 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			
ASCD SET lamp signal	T		R				
ASCD CRUISE lamp signal	T		R				
ASCD OD cancel request signal	T	R					
ASCD operation signal	T	R					
Output shaft 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 sig- nal	R						T
Manual mode signal		R	T				

TURN SIGNAL AND HAZARD WARNING LAMPS

Signals	ECM	TCM	Combina- tion meter	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R
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	

TYPE 2 System Diagram



Input/Output Signal Chart

T: Transmit R: Receive

Signals	ECM	Combina- tion 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				
A/C 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			

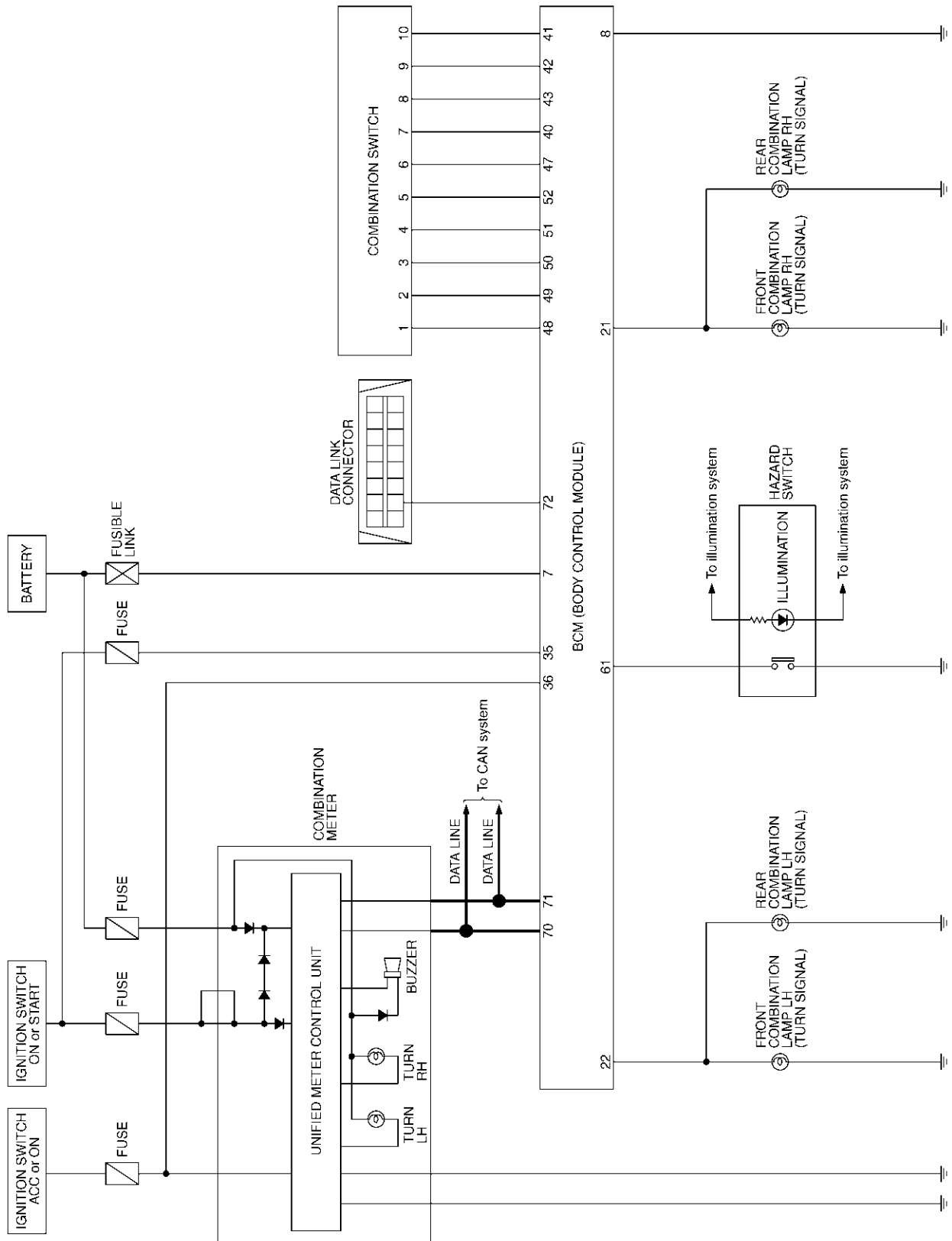
TURN SIGNAL AND HAZARD WARNING LAMPS

Signals	ECM	Combina- tion meter	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R
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			
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	

TURN SIGNAL AND HAZARD WARNING LAMPS

Schematic

AKS005KN



TKWT0696E

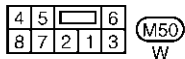
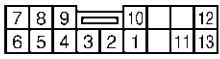
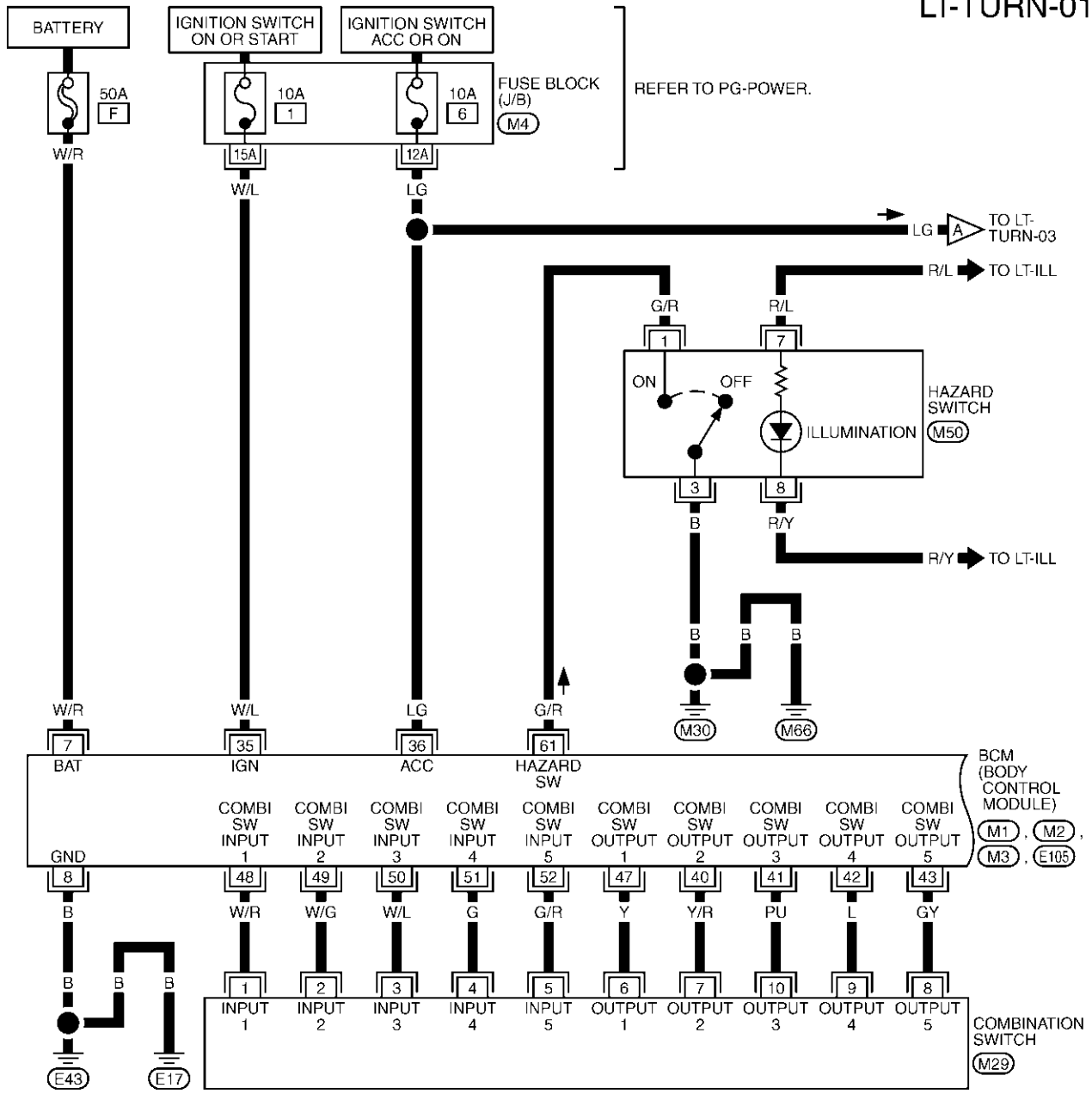
A
B
C
D
E
F
G
H
I
J
LT
L
M

TURN SIGNAL AND HAZARD WARNING LAMPS

AKS005KO

Wiring Diagram — TURN —

LT-TURN-01



REFER TO THE FOLLOWING.

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

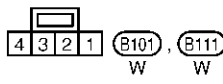
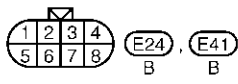
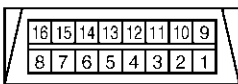
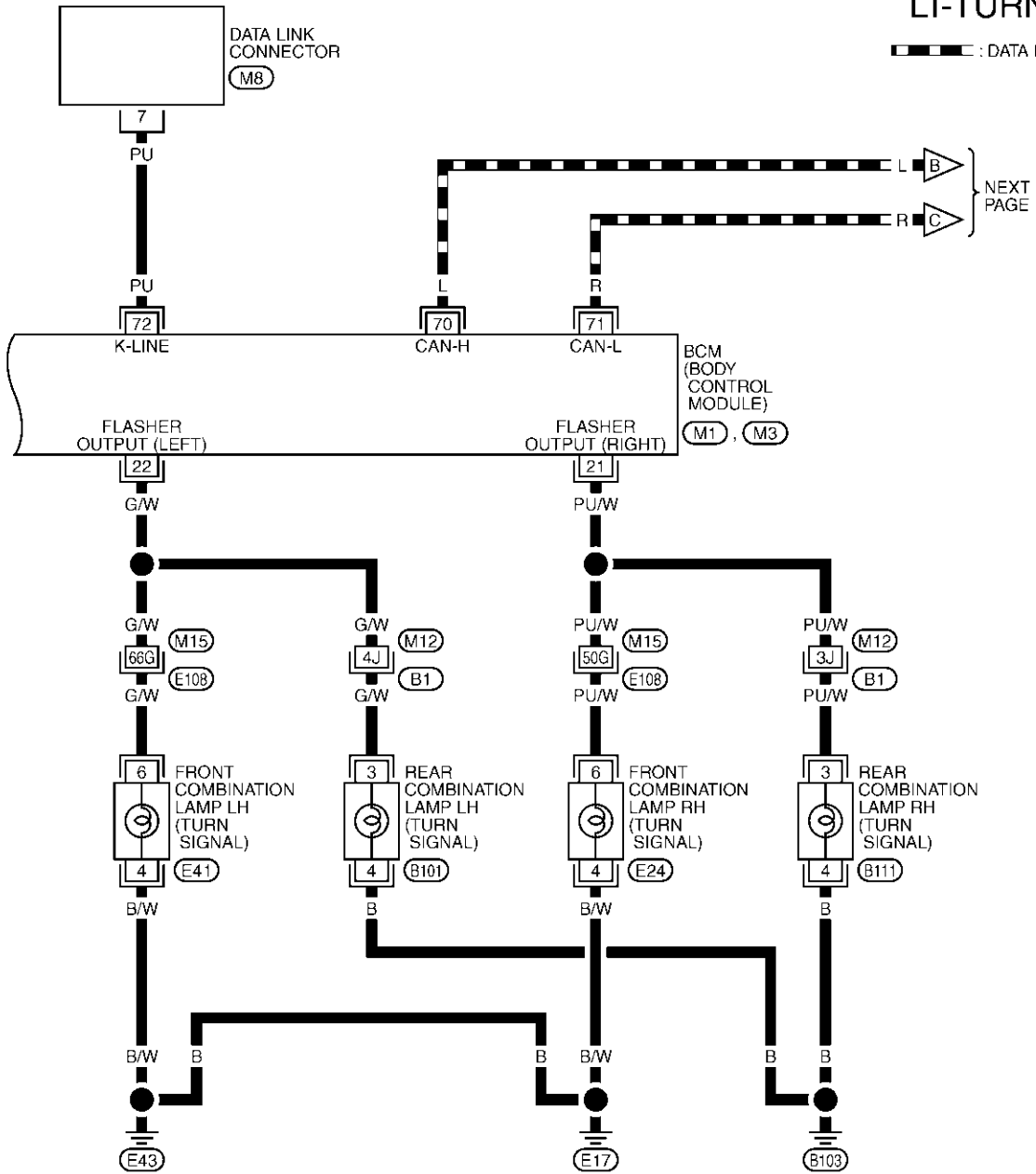
(M1), (M2), (M3), (E105) - ELECTRICAL UNITS

TKWT0697E

TURN SIGNAL AND HAZARD WARNING LAMPS

LT-TURN-02

▬ : DATA LINE



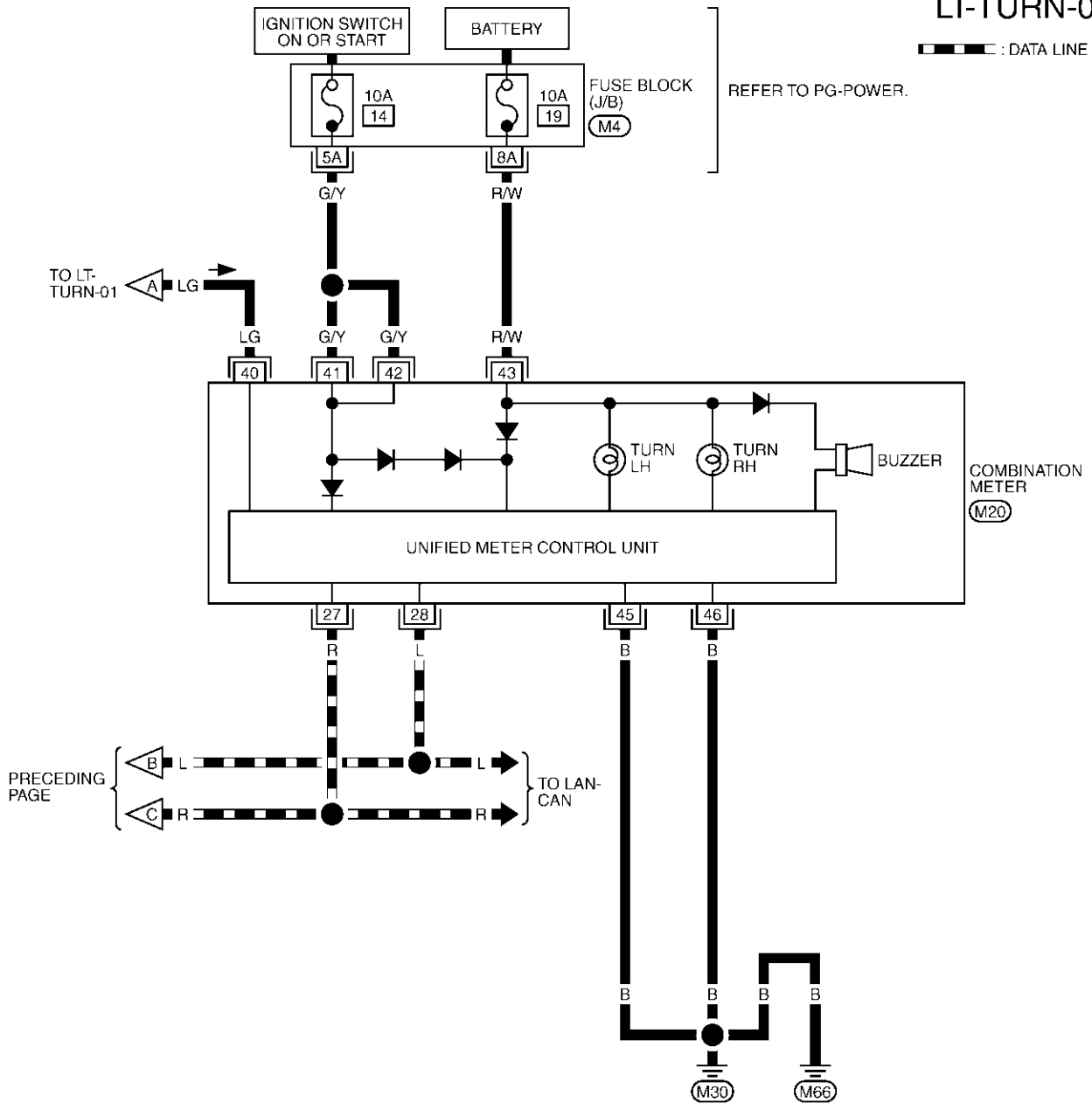
REFER TO THE FOLLOWING.
 (E108), (B1) -SUPER MULTIPLE JUNCTION (SMJ)
 (M1), (M3) -ELECTRICAL UNITS

A
B
C
D
E
F
G
H
I
J
LT
L
M

TURN SIGNAL AND HAZARD WARNING LAMPS

LT-TURN-03

▬ : DATA LINE



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

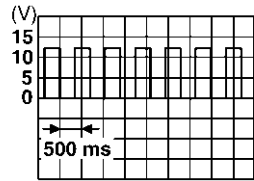
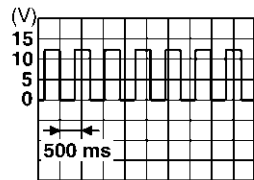
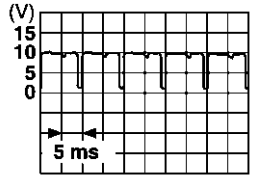
REFER TO THE FOLLOWING.
(M4) - FUSE BLOCK-JUNCTION BOX (J/B)

TKWT0310E

TURN SIGNAL AND HAZARD WARNING LAMPS

Terminals and Reference Value for BCM

AKS005KP

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	 <p style="text-align: right; font-size: small;">SKIA3009J</p>
22	G/W	Turn signal (left)	ON	Combination switch Turn left ON	 <p style="text-align: right; font-size: small;">SKIA3009J</p>
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	 <p style="text-align: right; font-size: small;">SKIA1119J</p>
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

AKS005KQ

1. Confirm the trouble symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-101, "System Description"](#) .
3. Carry out the Preliminary Inspection. Refer to [LT-112, "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

TURN SIGNAL AND HAZARD WARNING LAMPS

AKS005KR

Preliminary Inspection CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown fuses.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	F
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6

Refer to [LT-108, "Wiring Diagram — TURN —"](#).

OK or NG

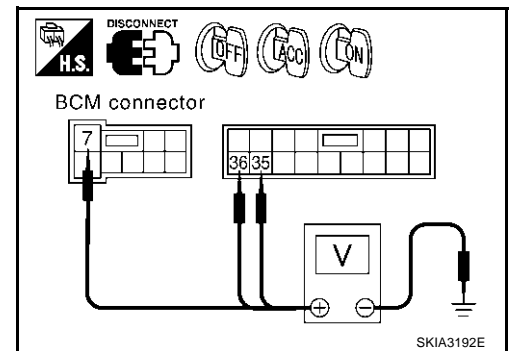
OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of problem before installing new fuse. Refer to [PG-3, "POWER SUPPLY ROUTING CIRCUIT"](#).

2. CHECK POWER SUPPLY CIRCUIT

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

Terminals		(-)	Ignition switch position		
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

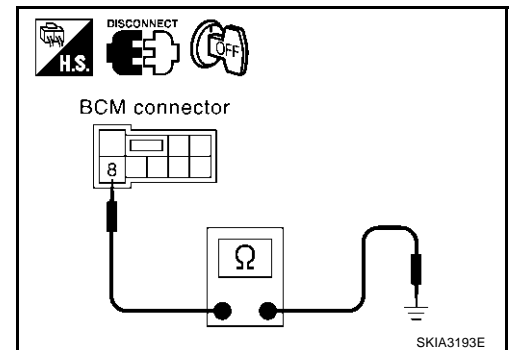
Check continuity between BCM and ground.

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

OK or NG

OK >> INSPECTION END

NG >> Check harness ground circuit.



CONSULT-II Function

AKS005KS

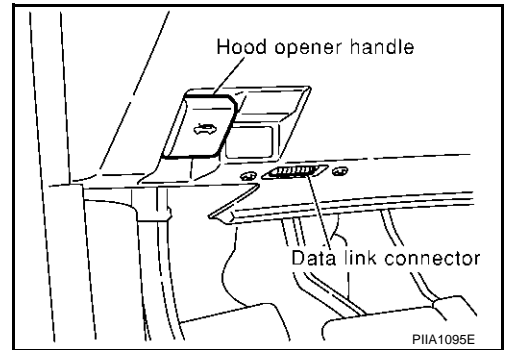
CONSULT-II performs the following functions communicating with BCM.

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

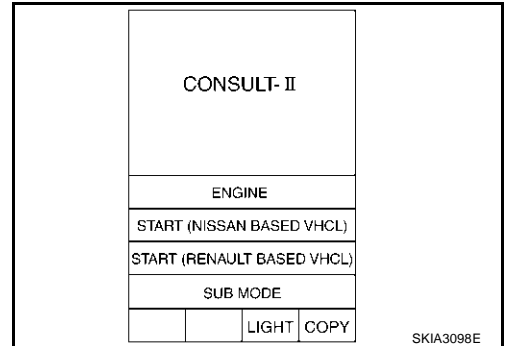
TURN SIGNAL AND HAZARD WARNING LAMPS

CONSULT-II BASIC OPERATION

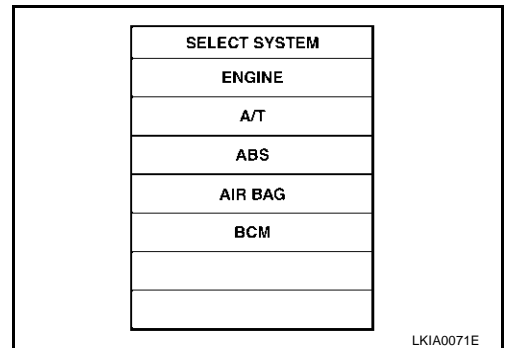
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



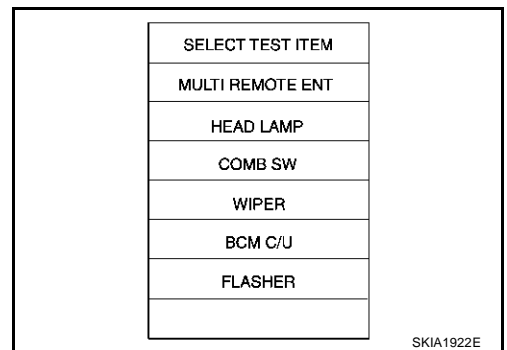
2. Touch "START (NISSAN BASED VHCL)".



3. Touch "BCM" on "SELECT SYSTEM" screen.
If "BCM" is not indicated, refer to [GI-38, "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".

TURN SIGNAL AND HAZARD WARNING LAMPS

- When "SELECTION FROM MENU" is selected, touch items to be monitored. When "ALL SIGNALS" is selected, all the items will be monitored.
- 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

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

Display Item List

Test item	Description
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

AKS005KT

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-125, "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

TURN SIGNAL AND HAZARD WARNING LAMPS

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-23. "Removal and Installation of BCM"](#).
- NG >> GO TO 5.

ACTIVE TEST	
FLASHER RIGHT	ON
	OFF

LKIA0084E

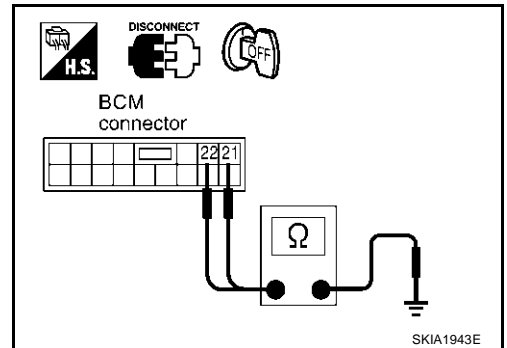
5. INSPECTION 2: BCM AND TURN SIGNAL LAMPS

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)		No
RH	M1		
LH		22 (G/W)	

OK or NG

- OK >> Replace BCM. Refer to [BCS-23. "Removal and Installation of BCM"](#).
- NG >> Repair harness or connector.



Hazard Warning Lamp Does Not Operate But Turn Signal Lamp Operate

AKS005KU

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.

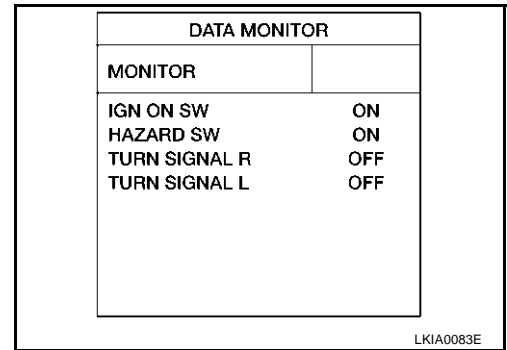
TURN SIGNAL AND HAZARD WARNING LAMPS

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

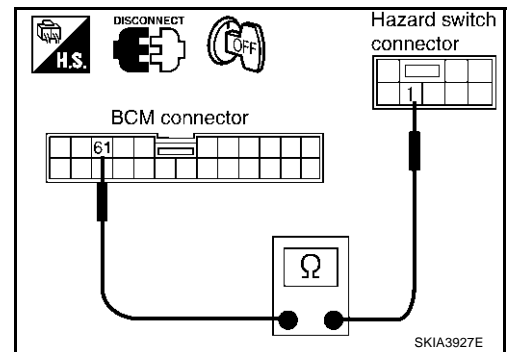
- OK >> Replace BCM. Refer to [BCS-23, "Removal and Installation of BCM"](#).
- NG >> GO TO 3.



3. INSPECTION 2: HAZARD SWITCH AND BCM

- Turn ignition switch OFF.
- Disconnect BCM connector and hazard switch connector.
- 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



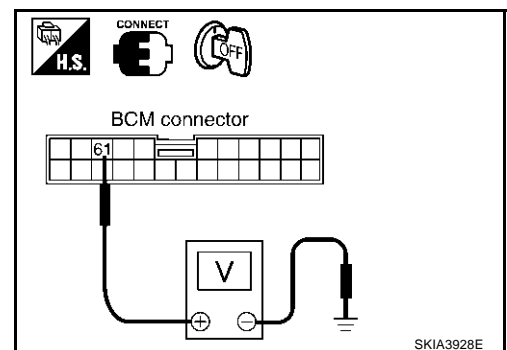
OK or NG

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

4. CHECK BCM

- Connect BCM connector.
- Check voltage between harness connector of BCM and ground.

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



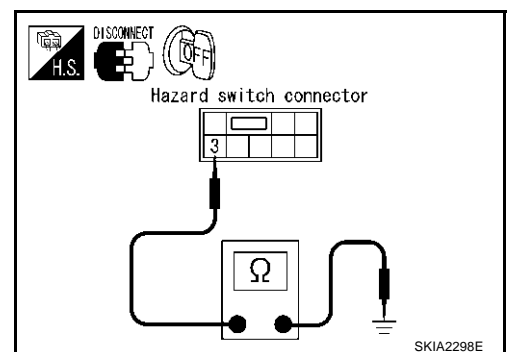
OK or NG

- OK >> GO TO 5.
- NG >> Replace BCM. Refer to [BCS-23, "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.

TURN SIGNAL AND HAZARD WARNING LAMPS

6. CHECK HAZARD SWITCH

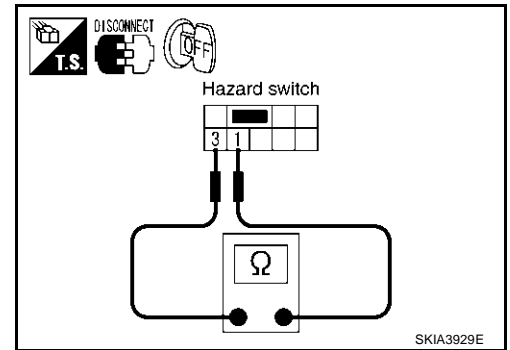
Check continuity hazard switch.

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-23, "Removal and Installation of BCM"](#).

NG >> Replace hazard switch.



AKS005KV

Turn Signal Indicator Lamp Does Not Operate

1. CHECK BULB

Inspect bulb of turn signal indicator lamp in combination meter.

OK or NG

OK >> Replace combination meter.

NG >> Replace indicator bulb.

Bulb Replacement (Front Turn Signal Lamp)

AKS005L1

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

Bulb Replacement (Rear Turn Signal Lamp)

AKS005L2

Refer to [LT-155, "Bulb Replacement"](#) in "REAR COMBINATION LAMP".

Removal and Installation of Front Turn Signal Lamp

AKS005L3

Refer to [LT-30, "Removal and Installation"](#) in "HEAD LAMP (FOR USA)".

Removal and Installation of Rear Turn Signal Lamp

AKS005L4

Refer to [LT-155, "Removal and Installation"](#) in "REAR COMBINATION LAMP".

A
B
C
D
E
F
G
H
I
J
L
M

LT

LIGHTING AND TURN SIGNAL SWITCH

LIGHTING AND TURN SIGNAL SWITCH

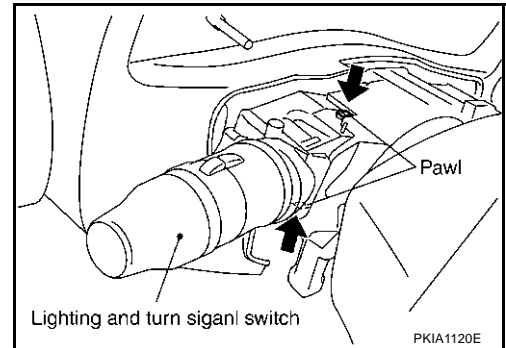
PFP:25540

Removal and Installation

AKS000M4

REMOVAL

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.



INSTALLATION

Install in the reverse order of removal.

HAZARD SWITCH

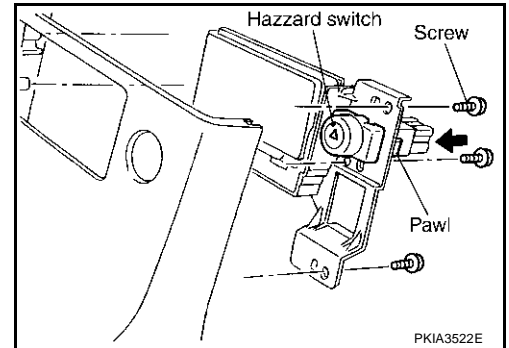
HAZARD SWITCH

PFP:25290

Removal and Installation (M/T)

REMOVAL

1. Remove console boot (M/T). Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#) in "IP" section.
2. Remove connector.
3. Remove screws (5) and remove bracket from console boot (M/T).
4. Press pawl on reverse side and remove the hazard switch.



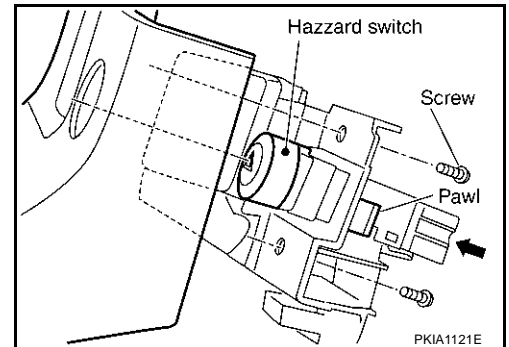
INSTALLATION

Install in the reverse order of removal.

Removal and Installation (A/T)

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.

A
B
C
D
E
F
G
H
I
J
LT
L
M

COMBINATION SWITCH

PFP:25567

COMBINATION SWITCH

Combination Switch Reading Function

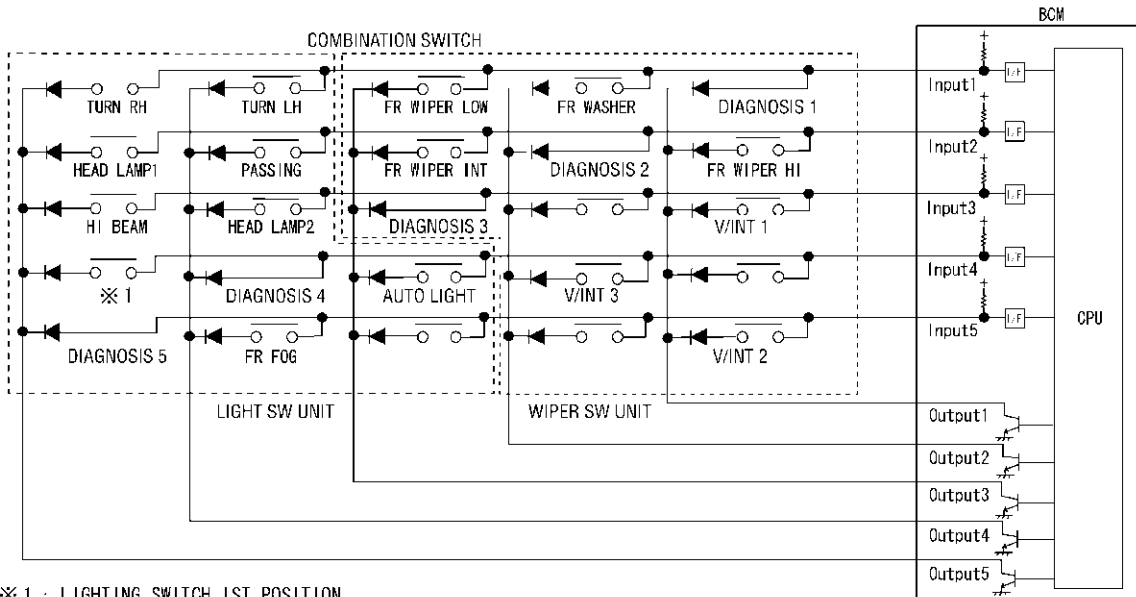
AKS005RT

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

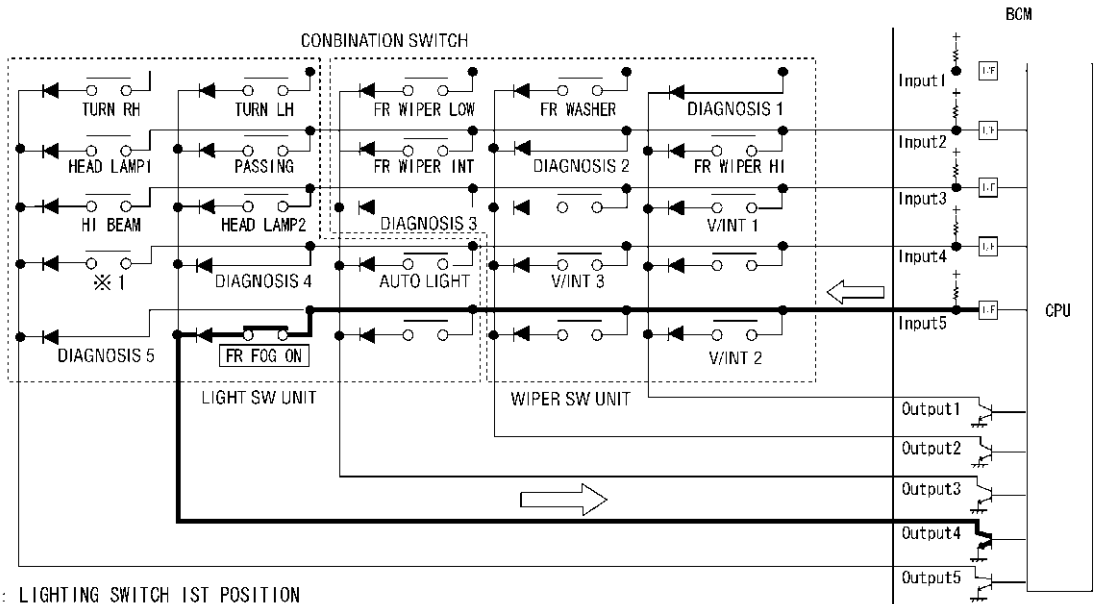
NOTE:

Dual switches are set for head lamps.

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

COMBINATION SWITCH

- 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.



※ 1 : LIGHTING SWITCH 1ST POSITION

SKIA3874E

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

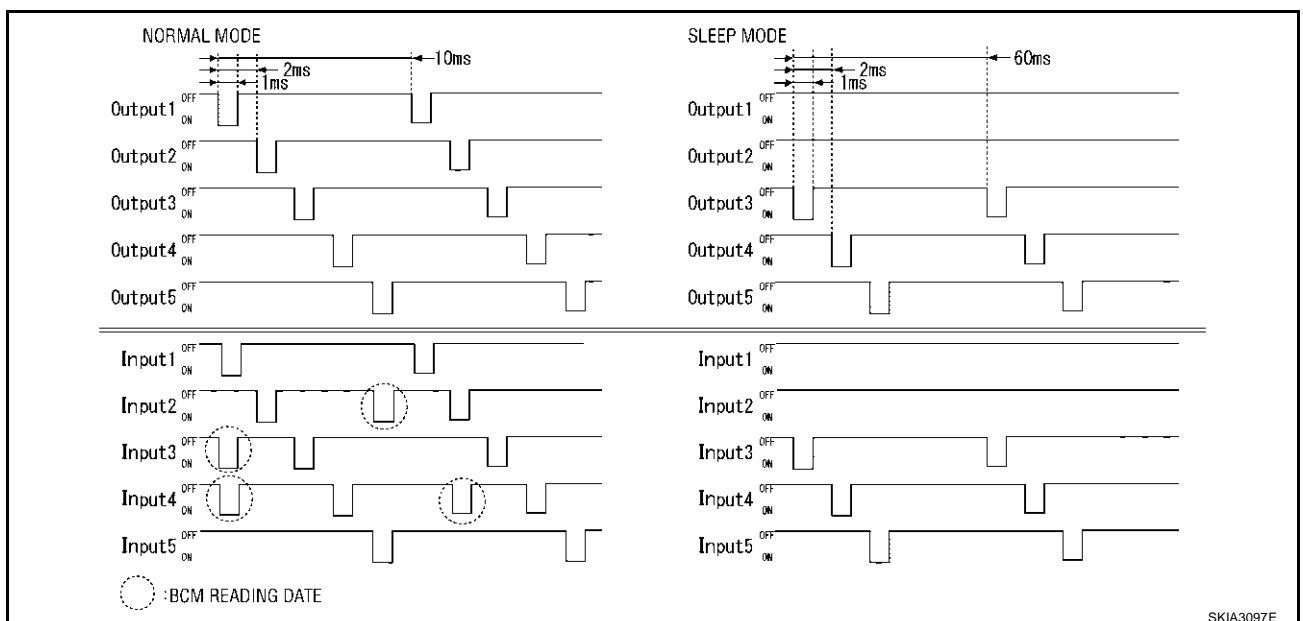
- Combination switch reading function has operation modes shown below.

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.



SKIA3097E

COMBINATION SWITCH

AKS005RU

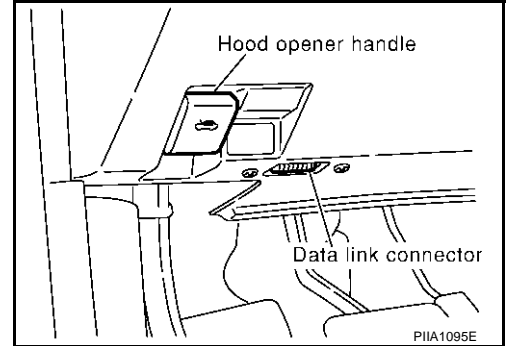
CONSULT-II Function

CONSULT-II performs the following functions communicating with BCM.

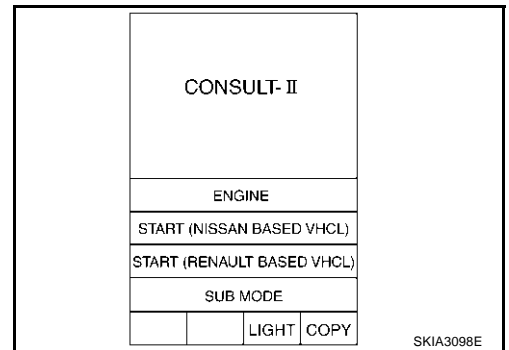
BCM diagnosis part	Check item, diagnosis mode	Description
Combination switch	DATA MONITOR	Displays BCM input data in real time.

CONSULT-II BASIC OPERATION

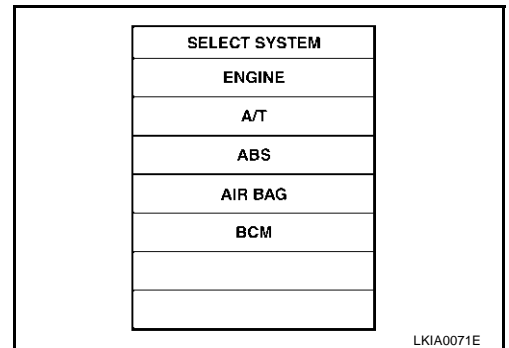
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



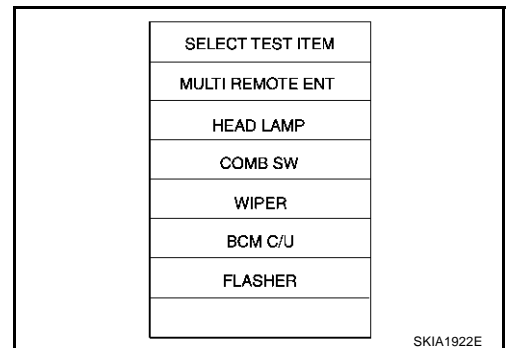
2. Touch "START(NISSAN BASED VHCL)".



3. Touch "BCM" on "SELECT SYSTEM" screen. If "BCM" is not indicated, refer to [GI-38, "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.

COMBINATION SWITCH

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.

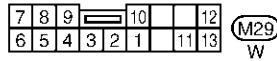
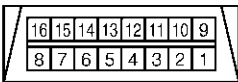
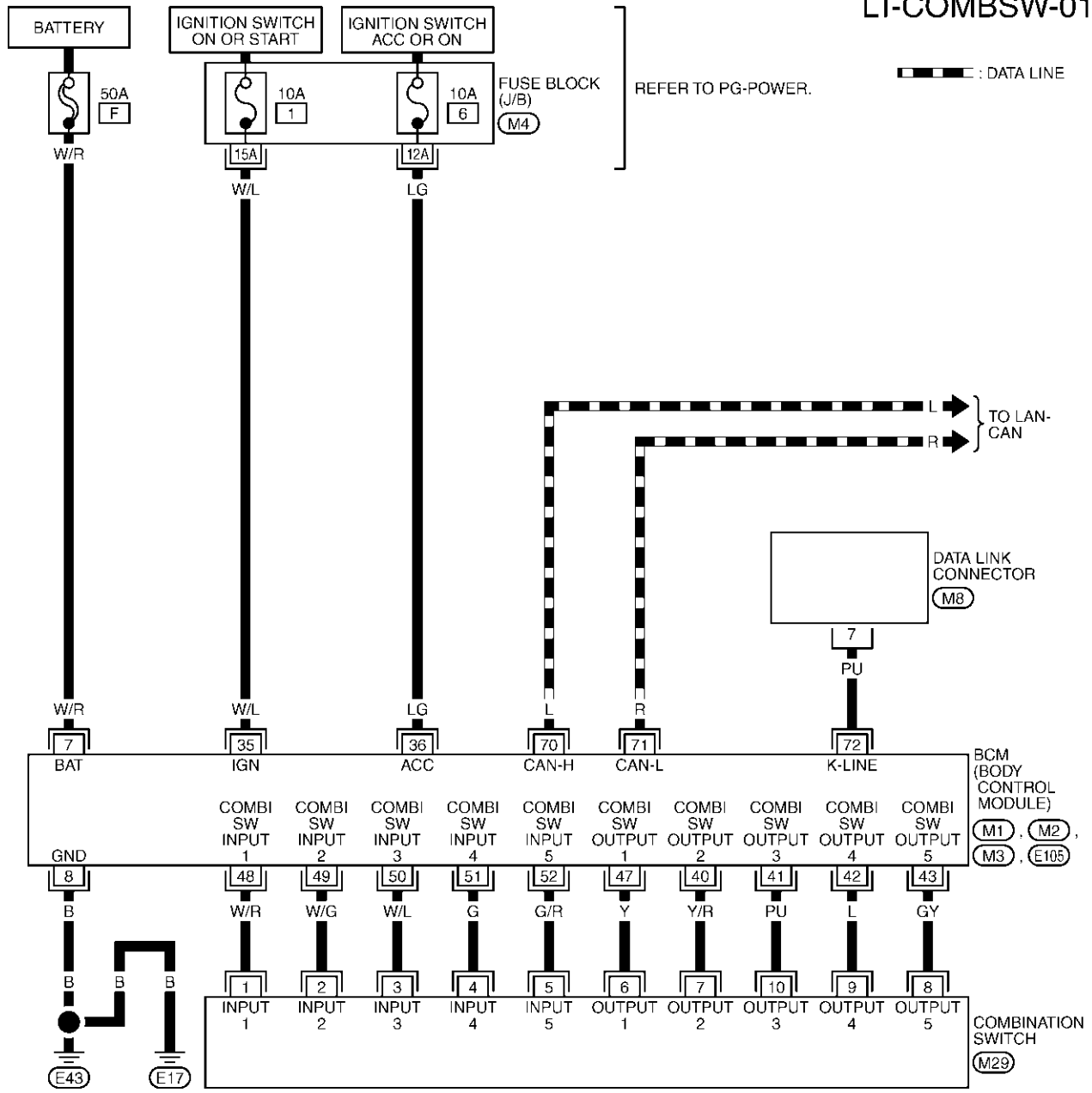
A
B
C
D
E
F
G
H
I
J
LT
L
M

COMBINATION SWITCH

AKS005RV

Wiring Diagram—COMBSW—

LT-COMBSW-01



REFER TO THE FOLLOWING.

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

(M1), (M2), (M3), (E105) - ELECTRICAL UNITS

TKWT0686E

COMBINATION SWITCH

Combination Switch Inspection According to Self-Diagnostic Results

AKS005RW

1. CHECK SELF-DIAGNOSTIC RESULTS

CAUTION:

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

1. Connect 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 <ul style="list-style-type: none"> ● FRONT WIPER HI ● Intermittent control 1 ● Intermittent control 2 Pattern 2 <ul style="list-style-type: none"> ● 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.)	<ul style="list-style-type: none"> ● 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 <ul style="list-style-type: none"> ● FR WASHER ● Intermittent control 3 Pattern 2 <ul style="list-style-type: none"> ● 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.)	<ul style="list-style-type: none"> ● 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 <ul style="list-style-type: none"> ● FRONT WIPER LOW ● FRONT WIPER INT ● AUTO LIGHT Pattern 2 <ul style="list-style-type: none"> ● 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.)	<ul style="list-style-type: none"> ● Harness between BCM and combination switch ● Wiper switch (Front wiper Lo, INT) ● BCM

COMBINATION SWITCH

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 <ul style="list-style-type: none"> ● TURN LH ● PASSING ● HEAD LAMP 2 ● FRONT FOG Pattern 2 <ul style="list-style-type: none"> ● 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.)	<ul style="list-style-type: none"> ● 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 <ul style="list-style-type: none"> ● TURN RH ● HEAD LAMP 1 ● HI BEAM ● TAIL LAMP Pattern 2 <ul style="list-style-type: none"> ● 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.)	<ul style="list-style-type: none"> ● 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.

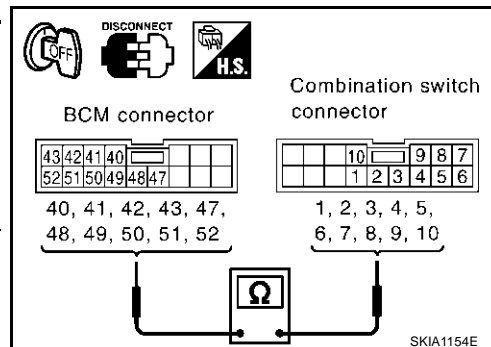
Malfunction in headlamp switch system>>Replace Lighting switch.

COMBINATION 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)	



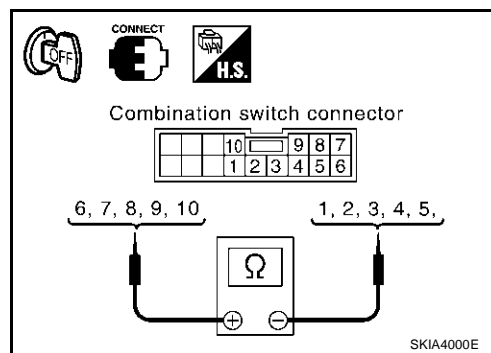
OK or NG

- 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

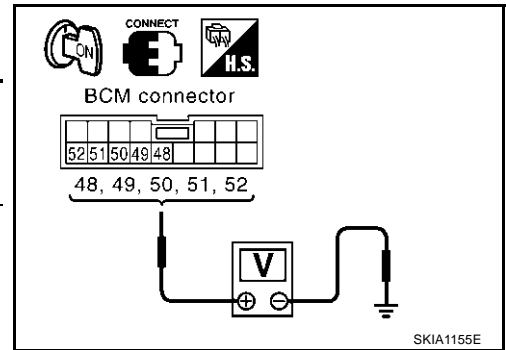
- OK >> GO TO 4.
NG >> GO TO 6.

COMBINATION SWITCH

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)	Ground	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

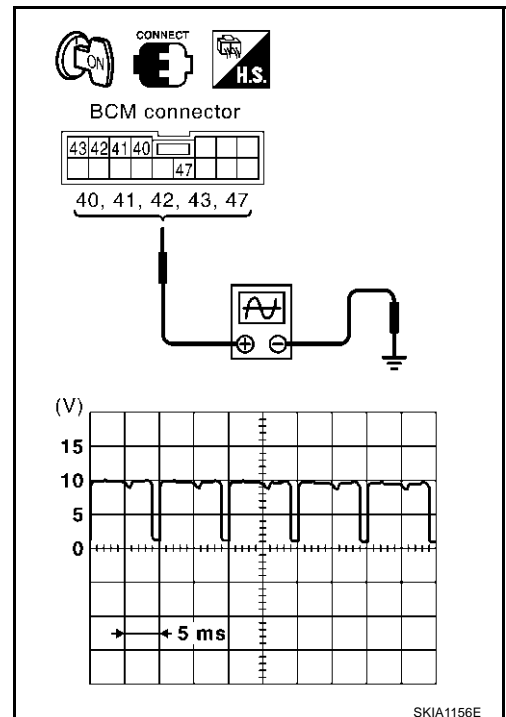
OK >> GO TO 4.

NG >> Replace BCM. Refer to [BCS-23, "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-23, "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.			

COMBINATION SWITCH

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

AKS005RX

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 <ul style="list-style-type: none"> ● LH Turn signal lamp and RH Turn signal lamp on ● Front wiper on (LO speed) 	<ul style="list-style-type: none"> ● Short between the following harness and ground <ul style="list-style-type: none"> - 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 <ul style="list-style-type: none"> ● Headlamp on (HI and LO) ● Front wiper on (HI speed) When the ignition switch is OFF position <ul style="list-style-type: none"> ● Headlamp on (HI and LO) 	<ul style="list-style-type: none"> ● Short between the following harness and ground <ul style="list-style-type: none"> - 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 <ul style="list-style-type: none"> ● Headlamp on (HI and LO) When the ignition switch is OFF position <ul style="list-style-type: none"> ● Headlamp on (HI and LO) 	<ul style="list-style-type: none"> ● Short between the following harness and ground <ul style="list-style-type: none"> - 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 <ul style="list-style-type: none"> ● Parking lamp and tail lamp on When the ignition switch is OFF position <ul style="list-style-type: none"> ● Parking lamp and tail lamp on 	<ul style="list-style-type: none"> ● Short between the following harness and ground <ul style="list-style-type: none"> - 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 <ul style="list-style-type: none"> ● Front fog lamp on When the ignition switch is OFF position <ul style="list-style-type: none"> ● Front fog lamp on 	<ul style="list-style-type: none"> ● Short between the following harness and ground <ul style="list-style-type: none"> - Between BCM INPUT 5 terminal and combination switch - Between combination switch and BCM OUTPUT 5 ● BCM ● Combination switch

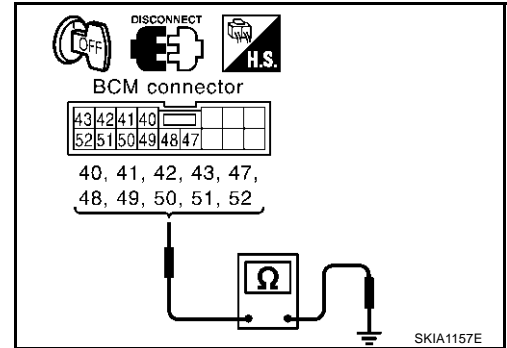
COMBINATION SWITCH

>> 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		Ground	
	Connector	Terminal (Wire color)		
1	M2	Input 1	48 (W/R)	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)	



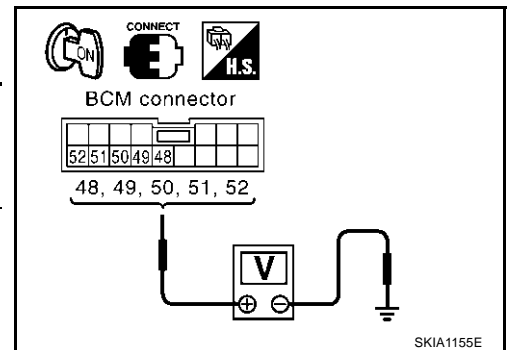
OK or NG

- 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-23, "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.

COMBINATION SWITCH

>> INSPECTION END

Removal and Installation

AKS005RY

For details, refer to [LT-118, "Removal and Installation"](#) .

A

B

C

D

E

F

G

H

I

J

LT

L

M

STOP LAMP

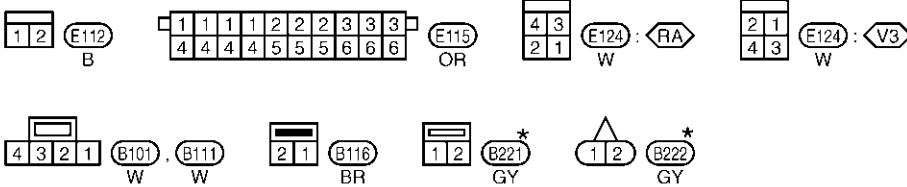
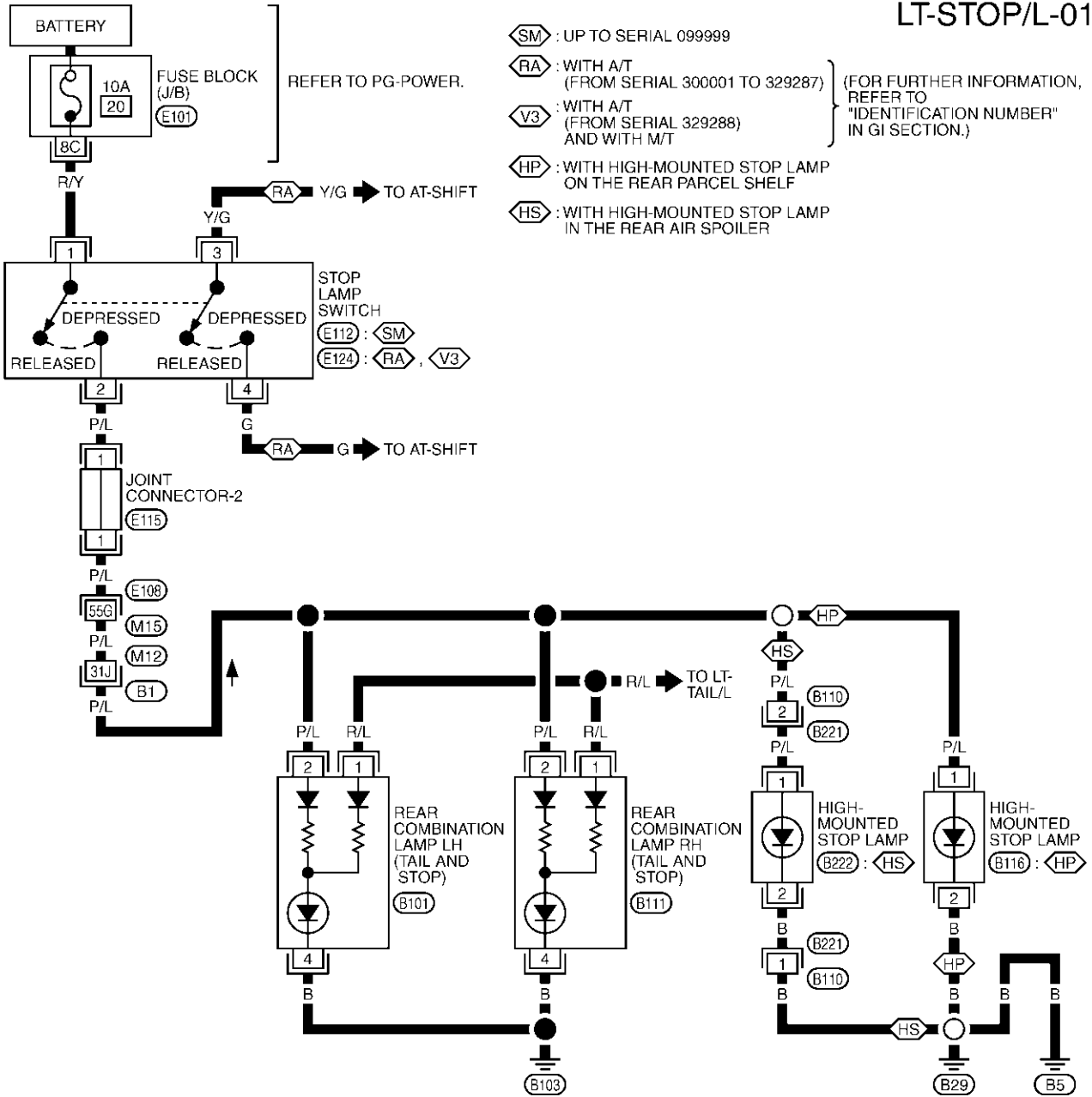
PFP:26550

STOP LAMP

Wiring Diagram — STOP/L —

AKS0007M

LT-STOP/L-01



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

REFER TO THE FOLLOWING.

E108, **B1** -SUPER MULTIPLE JUNCTION (SMJ)
E101 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT1011E

STOP LAMP

Bulb Replacement for High-mounted Stop Lamp WITH REAR SPOILER

AKS0007N

1. Refer to [LT-133, "WITH REAR SPOILER"](#) .
2. Replace together with high-mounted stop lamp assembly.

High-mounted stop lamp : LED

WITHOUT REAR SPOILER

1. Refer to [LT-133, "WITHOUT SPOILER"](#) .
2. Replace together with high-mounted stop lamp assembly.

High-mounted stop lamp : LED

Bulb Replacement for Rear Combination Lamp (Stop Lamp)

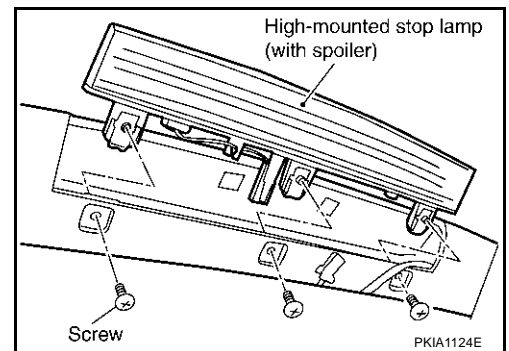
AKS0007O

Refer to [LT-155, "Bulb Replacement"](#) in "REAR COMBINATION LAMP".

Removal and Installation for High-Mounted Stop Lamp WITH REAR SPOILER

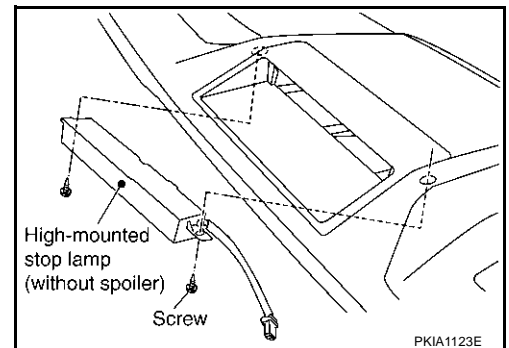
AKS0007P

1. Remove screws and remove high-mounted stop lamp from rear spoiler.
2. Disconnect high-mounted stop lamp connector.



WITHOUT SPOILER

1. Remove rear parcel shelf finisher. Refer to [EI-41, "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 for Rear Combination Lamp (Stop Lamp)

AKS0007Q

Refer to [LT-155, "Removal and Installation"](#) in "REAR COMBINATION LAMP".

STEP LAMP

STEP LAMP

PFP:26420

Bulb Replacement

AKS000M5

1. Remove step lamp. Refer to [LT-134, "Removal and Installation"](#).
2. Remove bulb.

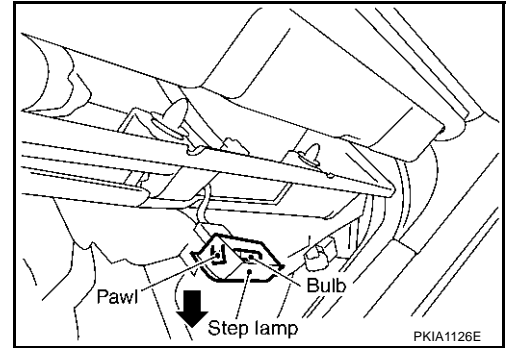
Step lamp : 12V - 5W

Removal and Installation

AKS000M6

REMOVAL

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.



INSTALLATION

Install in the reverse order of removal.

BACK-UP LAMP

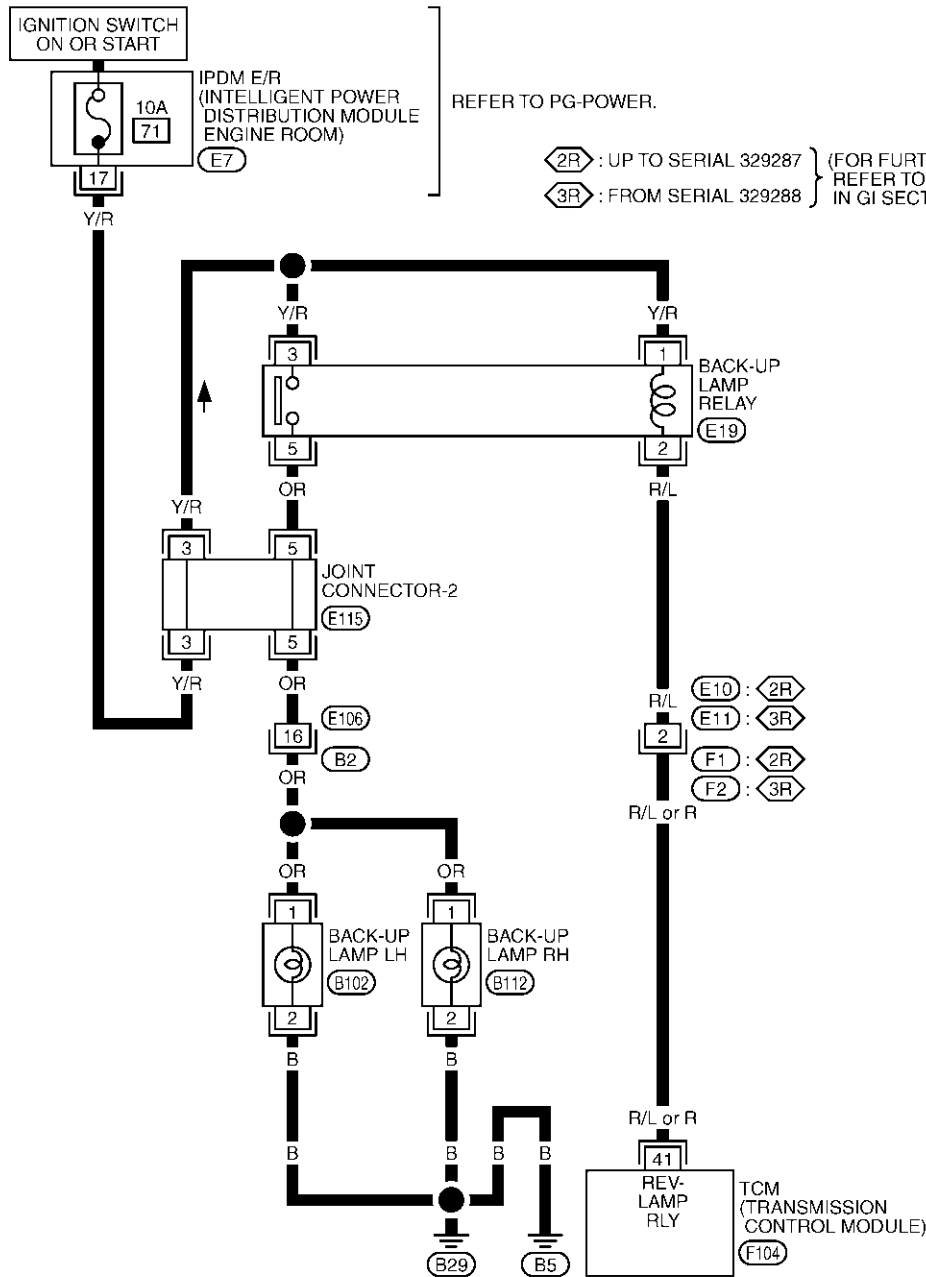
PPF:26550

BACK-UP LAMP

Wiring Diagram — BACK/L — A/T

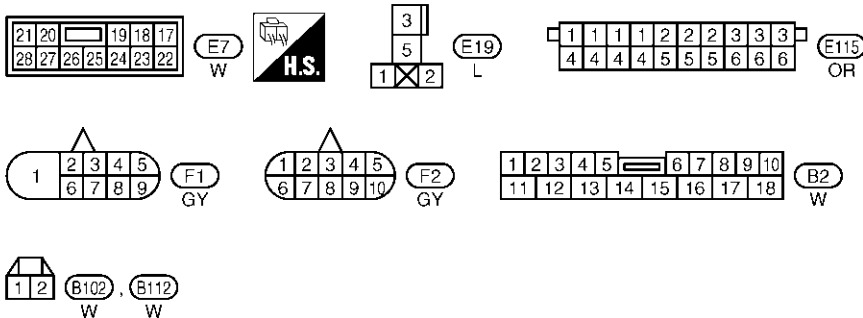
AKS0007X

LT-BACK/L-01



REFER TO PG-POWER.
 (2R) : UP TO SERIAL 329287 } (FOR FURTHER INFORMATION, REFER TO "IDENTIFICATION NUMBER" IN GI SECTION.)
 (3R) : FROM SERIAL 329288

A
B
C
D
E
F
G
H
I
J
LT
L
M

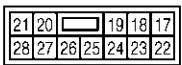
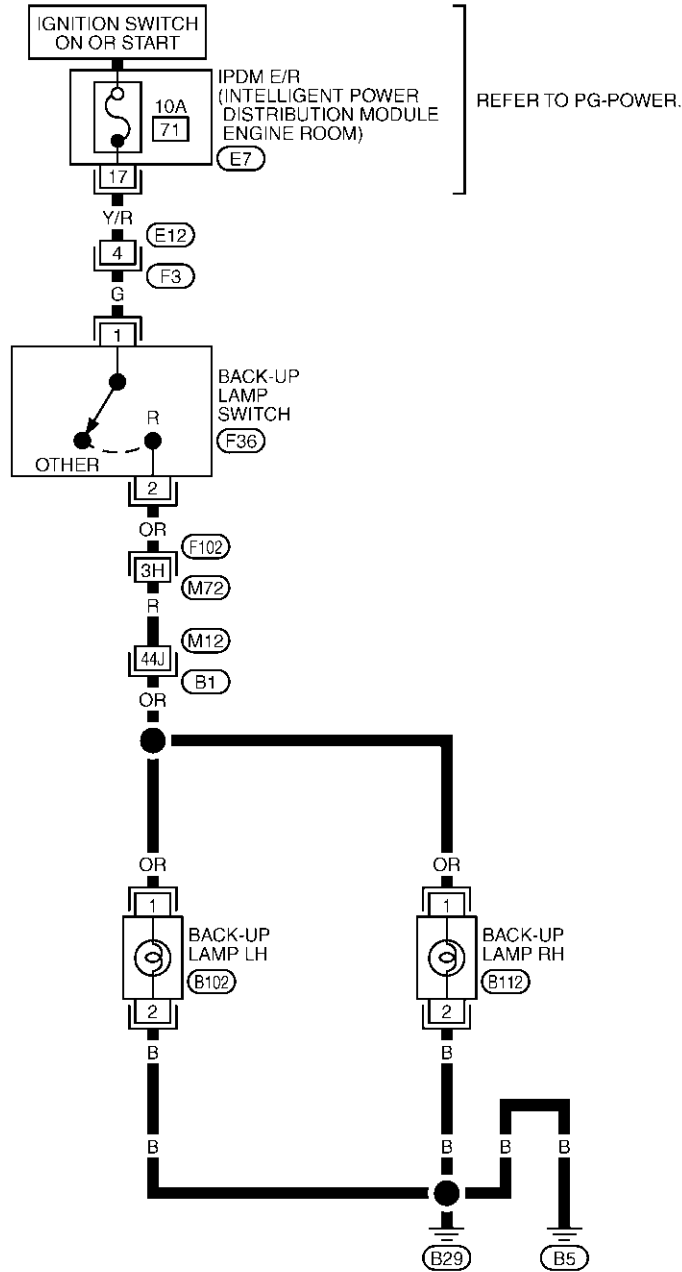


REFER TO THE FOLLOWING.
 (F104) -ELECTRICAL UNITS

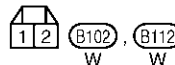
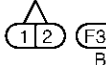
BACK-UP LAMP

LT-BACK/L-02

M/T



(E7) W



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

TKWT0932E

BACK-UP LAMP

Bulb Replacement

AKS0007Y

Refer to [LT-155, "Bulb Replacement"](#) in "REAR COMBINATION LAMP".

A

Removal and Installation

AKS0007Z

Refer to [LT-155, "Removal and Installation"](#) in "REAR COMBINATION LAMP".

B

C

D

E

F

G

H

I

J

LT

L

M

PARKING, LICENSE PLATE AND TAIL LAMPS

PFP:26550

System Description

AKS004QP

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

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

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

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

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

Ground is supplied

- to BCM (body control module) terminal 8
- 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 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 across the CAN communication lines. The CPU in the IPDM E/R controls the tail lamp relay coil, which when energized, directs power

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

Ground is supplied at all times

- to front combination lamp LH terminal 4
- through grounds E17 and E43,
- to front combination lamp RH terminal 4
- through grounds E17 and E43,
- to front side marker lamp LH terminal 2
- through grounds E17 and E43,
- to front side marker lamp RH terminal 2
- through grounds E17 and E43,

PARKING, LICENSE PLATE AND TAIL LAMPS

- to rear combination lamp LH terminal 4
- through ground B103,
- 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-120, "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.

CAN Communication System Description

AKS004QQ

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

AKS00C4K

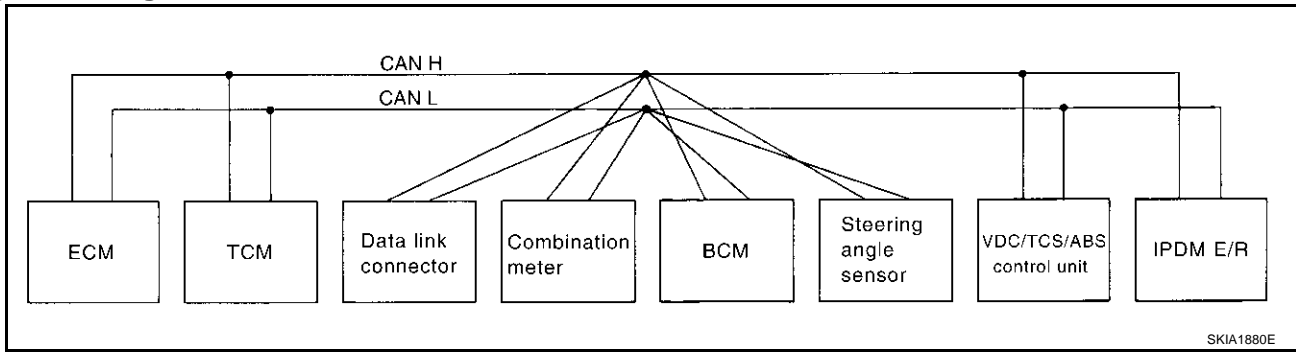
Body type	Sedan	
Axle	2WD	
Engine	VQ35DE	
Transmission	A/T	M/T
Brake control	VDC	
CAN communication unit		
ECM	×	×
TCM	×	
Data link connector	×	×
Combination meter	×	×
BCM	×	×
Steering angle sensor	×	×
VDC/TCS/ABS control unit	×	×
IPDM E/R	×	×
CAN communication type	LT-140, "TYPE 1"	LT-141, "TYPE 2"

×: Applicable

PARKING, LICENSE PLATE AND TAIL LAMPS

TYPE 1

System Diagram



Input/Output Signal Chart

T: Transmit R: Receive

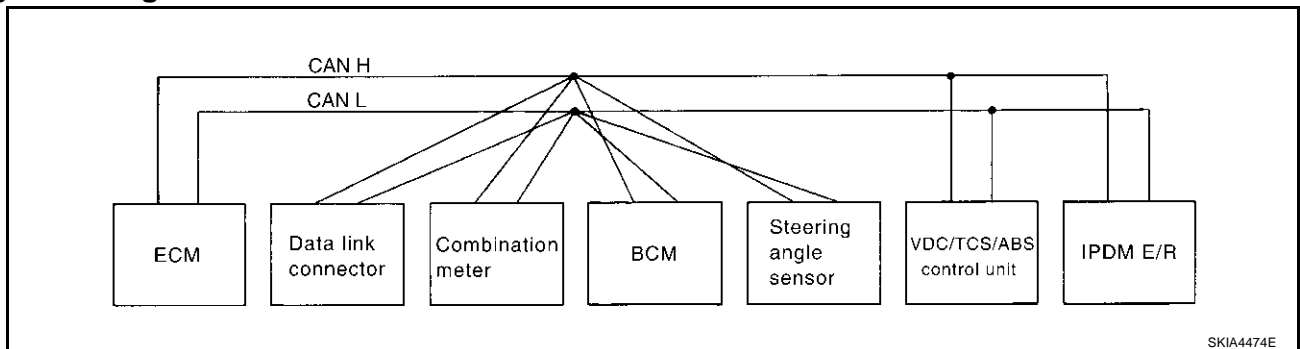
Signals	ECM	TCM	Combina- tion meter	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R
Engine torque signal	T	R					
Engine speed signal	T	R	R			R	
Engine coolant temperature signal	T	R	R				
Accelerator pedal position signal	T	R				R	
Closed throttle position signal	T	R					
Wide open throttle position signal	T	R					
Battery voltage signal	T	R					
Stop lamp switch signal		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	
A/C 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	R						T
Position lights request signal			R	T			R
Low beam request signal				T			R
Low beam status signal	R						T
High beam request signal			R	T			R
High beam status signal	R						T
Front fog lights request signal				T			R
Vehicle speed signal	R	R	R	R		T	
Sleep request 1 signal			R	T			
Sleep request 2 signal				T			R
Wake up request 1 signal			R	T			R

PARKING, LICENSE PLATE AND TAIL LAMPS

Signals	ECM	TCM	Combina- tion meter	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R
Wake up request 2 signal			R	T			R
Door switch signal (without naviga- tion 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			
ASCD SET lamp signal	T		R				
ASCD CRUISE lamp signal	T		R				
ASCD OD cancel request signal	T	R					
ASCD operation signal	T	R					
Output shaft 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 sig- nal	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	

TYPE 2

System Diagram



PARKING, LICENSE PLATE AND TAIL LAMPS

Input/Output Signal Chart

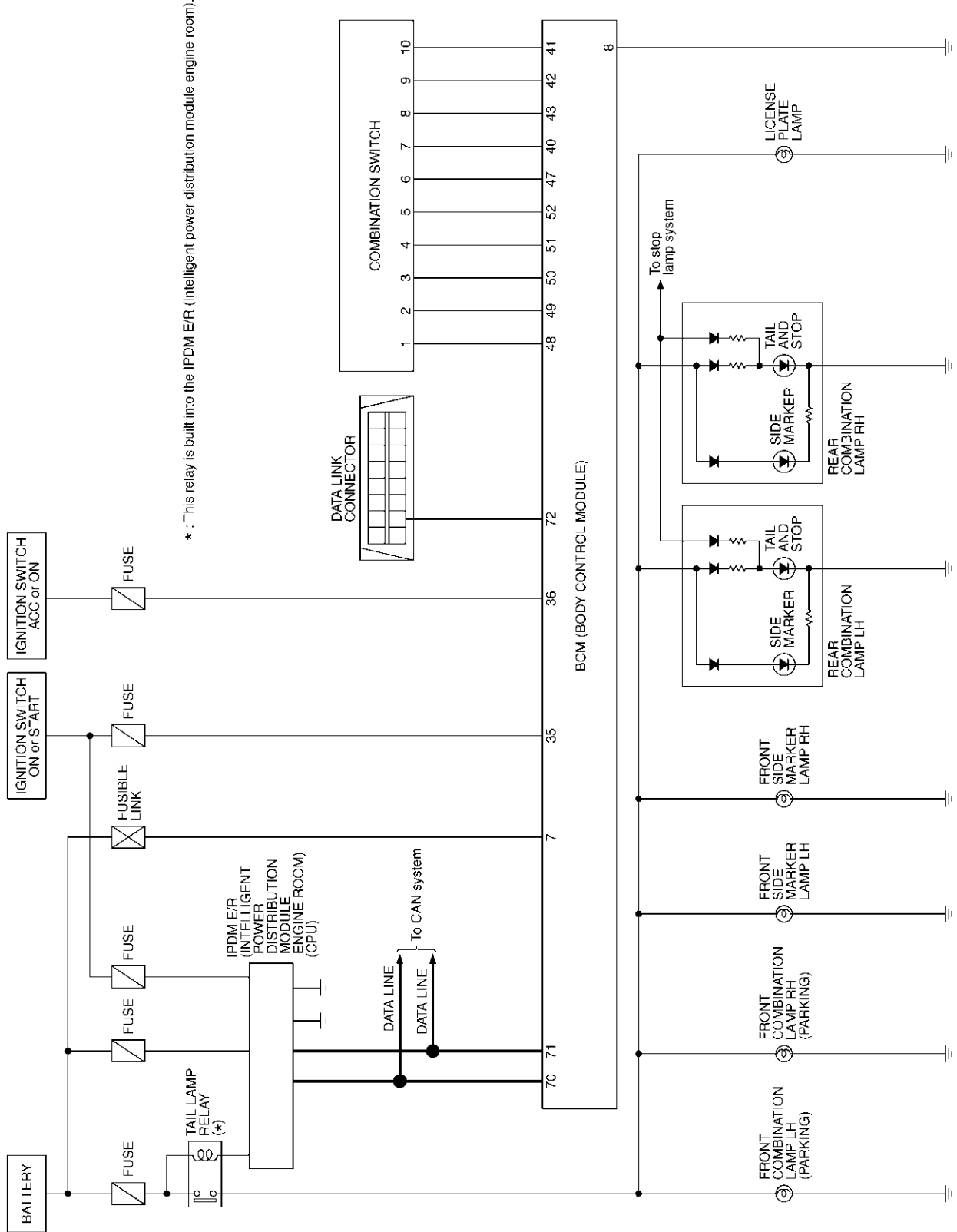
T: Transmit R: Receive

Signals	ECM	Combina- tion 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				
A/C 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			
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	

PARKING, LICENSE PLATE AND TAIL LAMPS

Schematic

AKS004QS



A
B
C
D
E
F
G
H
I
J
K
L
M

LT

TKWT0314E

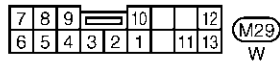
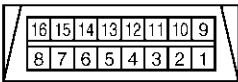
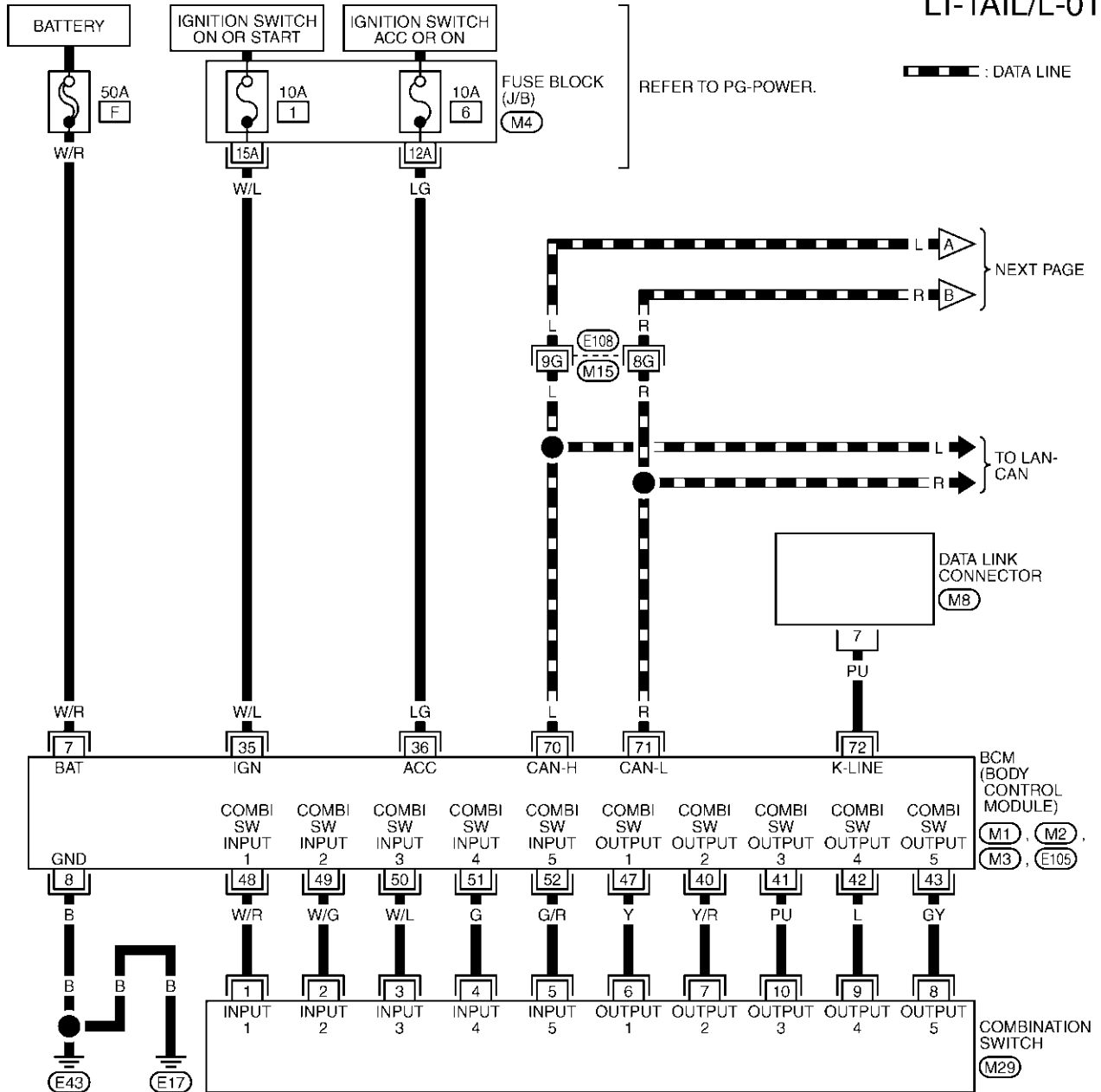
PARKING, LICENSE PLATE AND TAIL LAMPS

AKS004QT

Wiring Diagram — TAIL/L —

LT-TAIL/L-01

— — — : DATA LINE

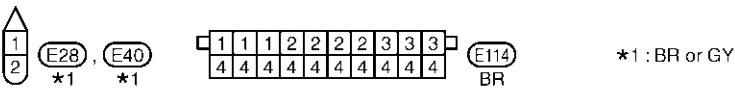
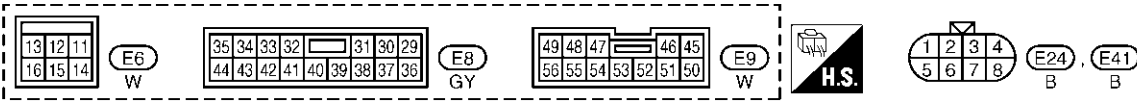
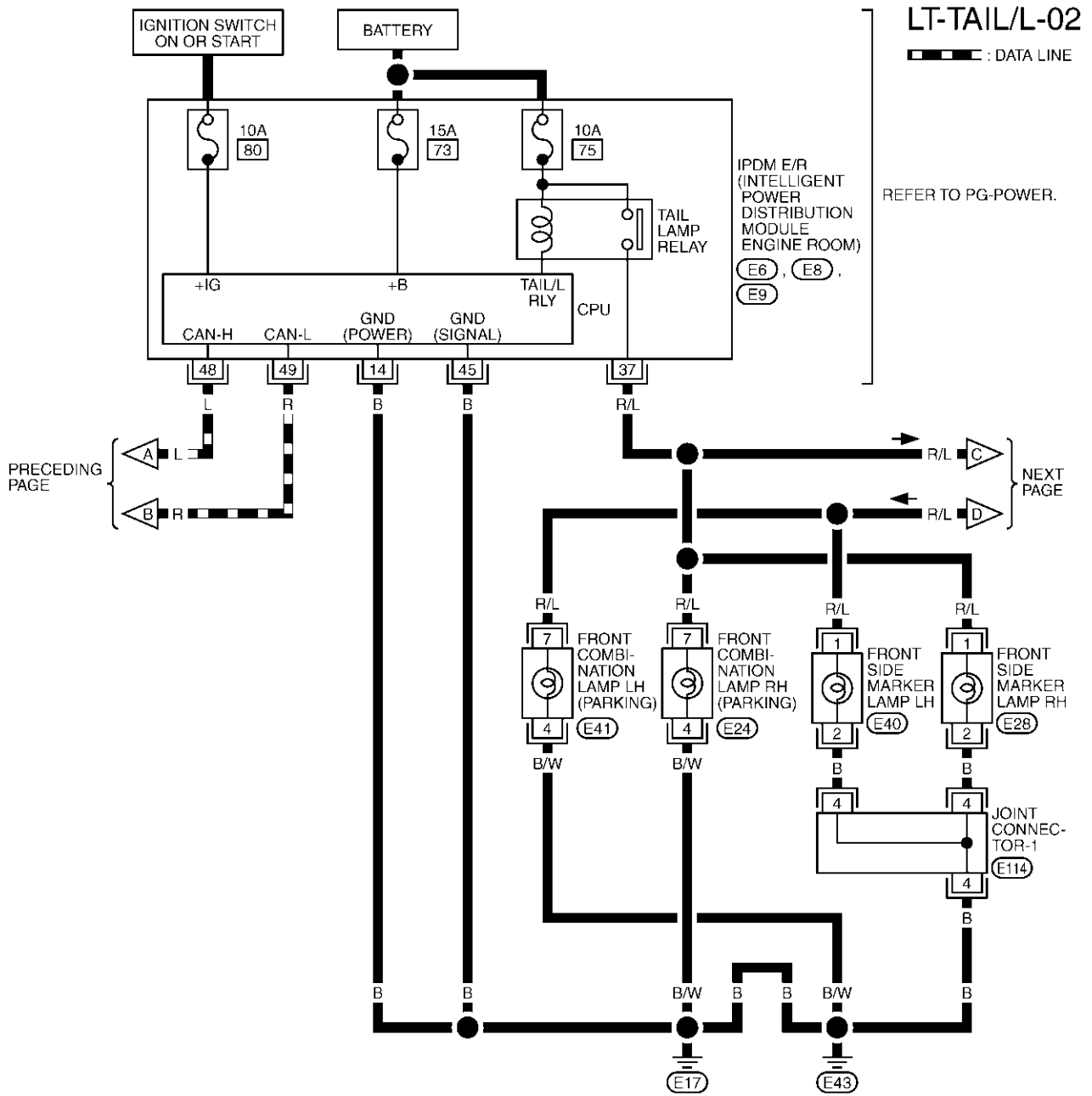


REFER TO THE FOLLOWING.

- (E108) -SUPER MULTIPLE JUNCTION (SMJ)
- (M4) -FUSE BLOCK-JUNCTION BOX (J/B)
- (M1), (M2), (M3), (E105) -ELECTRICAL UNITS

TKWT0315E

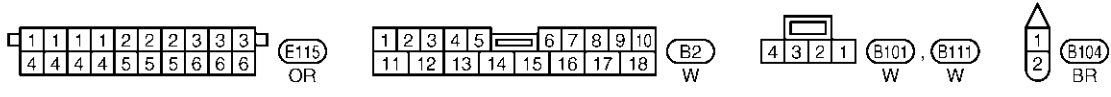
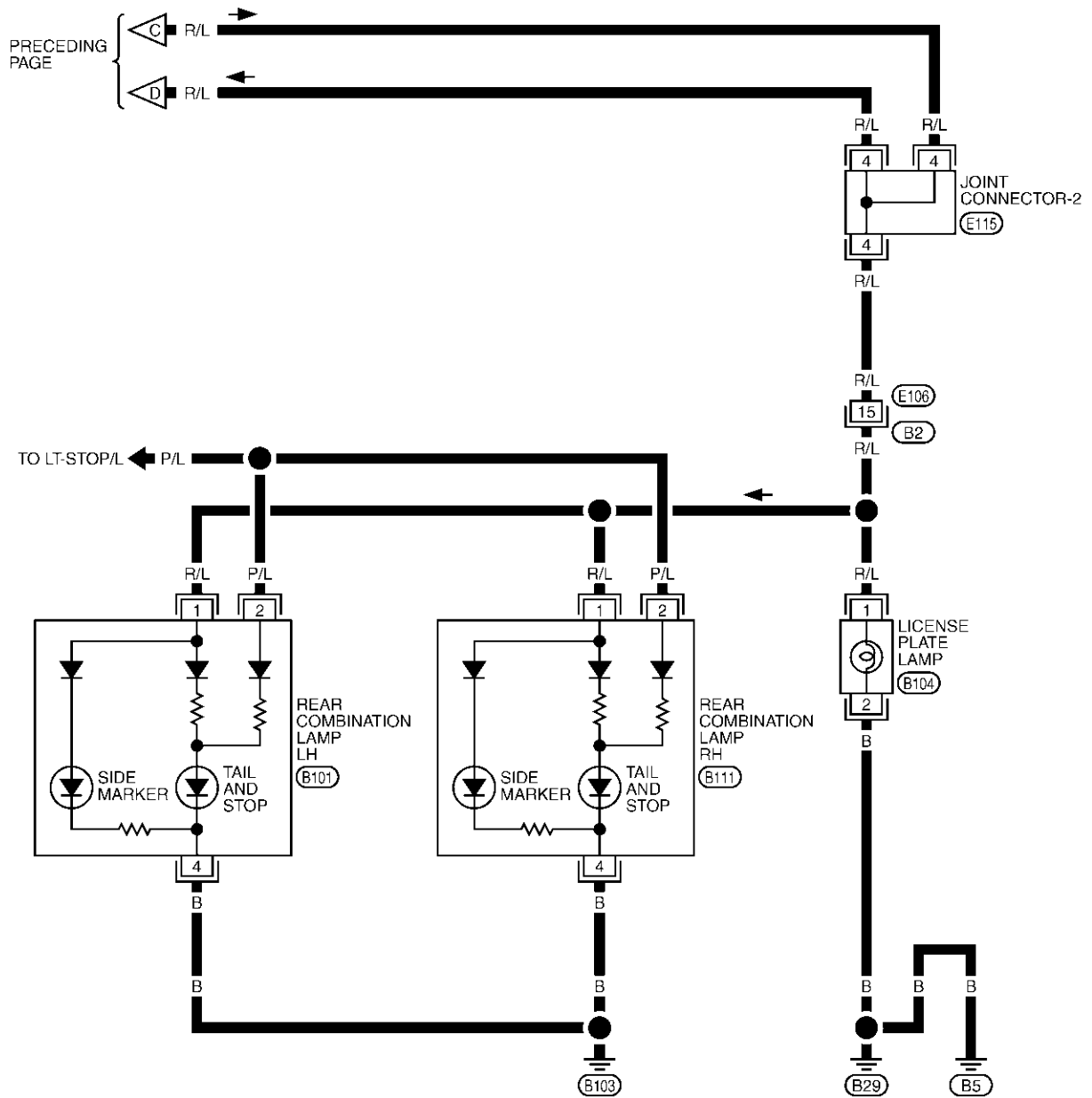
PARKING, LICENSE PLATE AND TAIL LAMPS



TKWT0712E

PARKING, LICENSE PLATE AND TAIL LAMPS

LT-TAIL/L-03

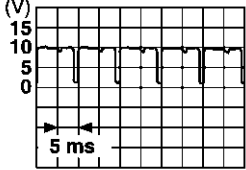


TKWT0317E

PARKING, LICENSE PLATE AND TAIL LAMPS

Terminals and Reference Value for BCM

AKS004QU

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	
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	—	—	—

SKIA1119J

Terminals and Reference Values for IPDM E/R

AKS004QV

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

AKS004QW

1. Confirm the trouble symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-138, "System Description"](#) .
3. Carry out the Preliminary Inspection. Refer to [LT-148, "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

PARKING, LICENSE PLATE AND TAIL LAMPS

AKS004QX

Preliminary Inspection CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown fuses.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	F
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
IPDM E/R	Battery	75

Refer to [LT-144, "Wiring Diagram — TAIL/L —"](#).

OK or NG

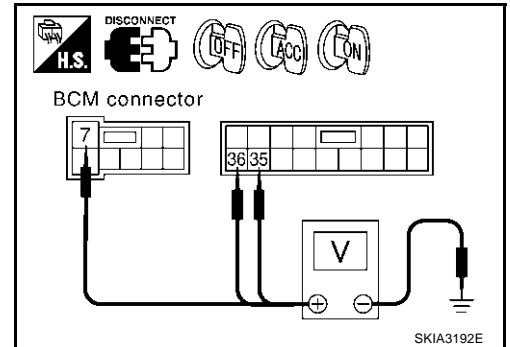
OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to [PG-3, "POWER SUPPLY ROUTING CIRCUIT"](#).

2. CHECK POWER SUPPLY CIRCUIT

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

Terminals		(-)	Ignition switch position		
(+)			OFF	ACC	ON
Connector	Terminal (Wire color)				
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

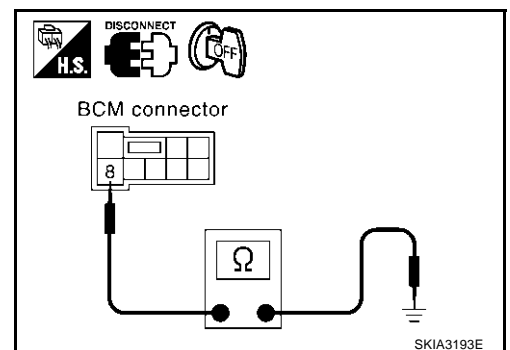
Check continuity between BCM harness connector and ground.

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

AKS004QY

Refer to [LT-19, "CONSULT-II Function"](#) in HEAD LAMP (FOR USA).

Refer to [LT-50, "CONSULT-II Function"](#) in HEAD LAMP (FOR CANADA).

PARKING, LICENSE PLATE AND TAIL LAMPS

Parking, License Plate and Tail Lamps Do Not Illuminate

AKS004QZ

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

1. Start auto active test. Refer to [PG-21, "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.

A

B

C

D

E

F

G

H

I

J

LT

L

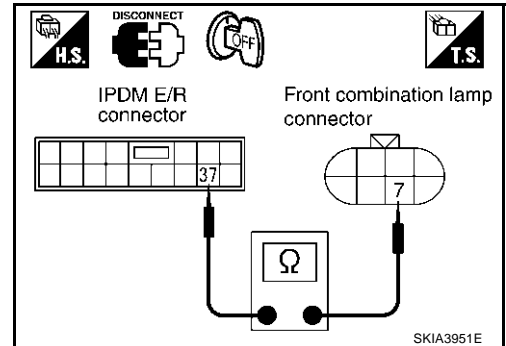
M

PARKING, LICENSE PLATE AND TAIL LAMPS

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

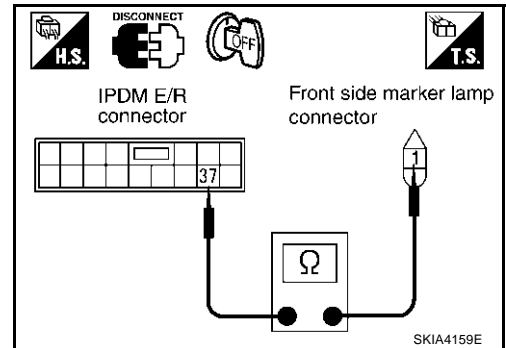
- Turn ignition switch OFF.
- Disconnect IPDM E/R connector, front combination lamp connector, front side marker lamp connector, license plate lamp connector and rear combination lamp connectors.
- Check continuity between harness connector of IPDM E/R and harness connector of front combination lamp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



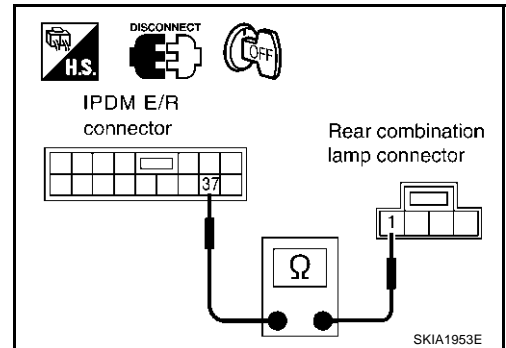
- Check continuity between harness connector of IPDM E/R and harness connector of front side marker lamp.

Terminals					Continuity
IPDM E/R		Front side marker lamp			
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)		
E8	37 (R/L)	RH	E28	1 (R/L)	Yes
		LH	E40		



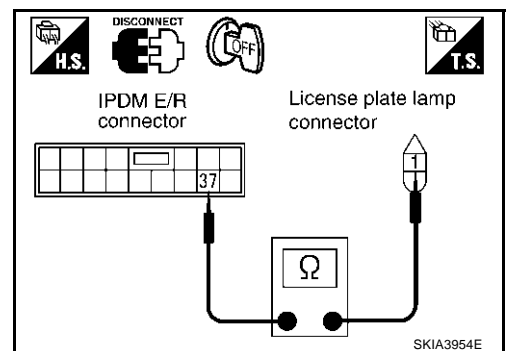
- Check continuity between harness connector of IPDM E/R and harness connector of rear combination lamp (tail and side marker).

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	B111	1 (R/L)	Yes
		LH	B101		



- 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)	B104	1 (R/L)		Yes



OK or NG

OK >> GO TO 3.

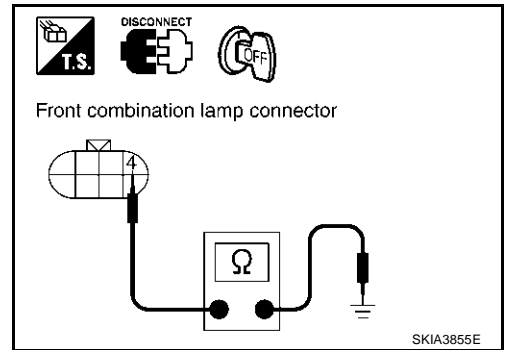
NG >> Repair harness or connector.

PARKING, LICENSE PLATE AND TAIL LAMPS

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

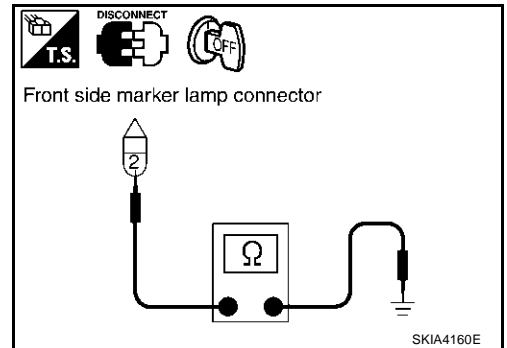
1. Check continuity between harness connector of front combination lamp (parking) and ground.

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



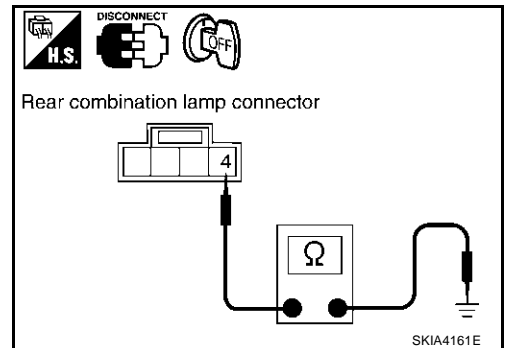
2. Check continuity between harness connector of front side marker lamp ground.

Terminals				Continuity
Front side marker lamp		Ground	Terminal (Wire color)	
Connector				
RH	E28	2 (B)		Yes
LH	E40			



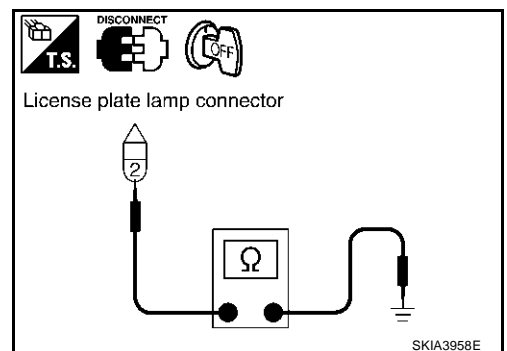
3. Check continuity between harness connector of rear combination lamp (tail and side marker) and ground.

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



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

Terminals				Continuity
License plate lamp		Ground	Terminal (Wire color)	
Connector				
B104		2 (B)		Yes



OK or NG

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

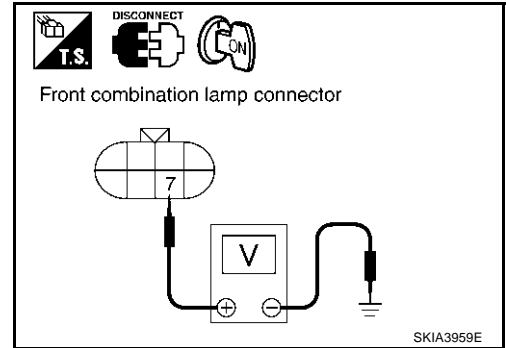
A
B
C
D
E
F
G
H
I
J
LT
L
M

PARKING, LICENSE PLATE AND TAIL LAMPS

4. CHECK IPDM E/R

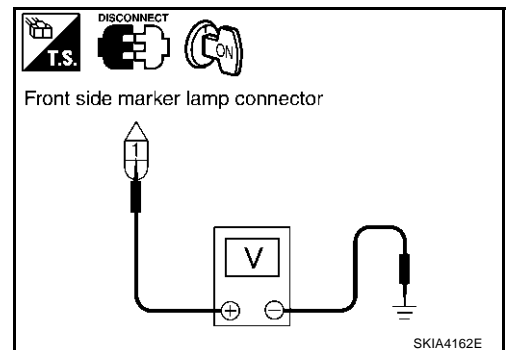
1. Connect IPDM E/R connector.
2. Start auto active test. Refer to [PG-21, "Auto Active Test"](#).
3. When tail lamp relay is operating, check voltage between harness connector of front combination lamp (parking) and ground.

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



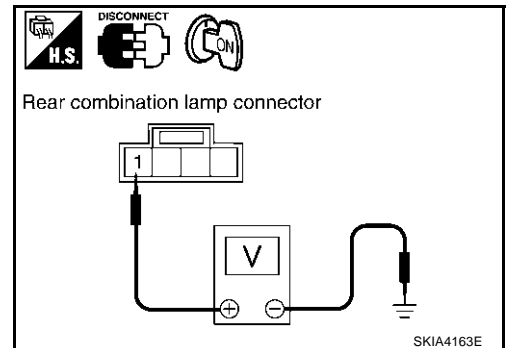
4. When tail lamp relay is operating, check voltage between harness connector of front side marker lamp and ground.

Terminals				Voltage
Front side marker lamp (+)		(-)	Ground	
Connector	Terminal (Wire color)			
RH	E28	1 (R/L)	Ground	Battery voltage
LH	E40			



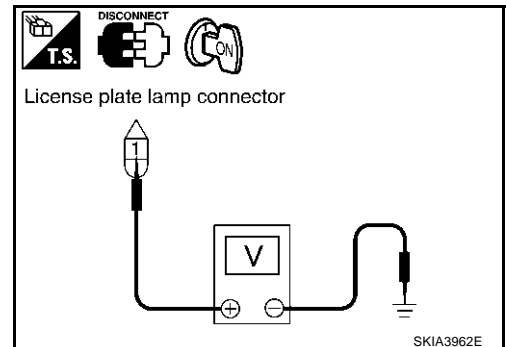
5. When tail lamp relay is operating, check voltage between harness connector of rear combination (tail and side marker) and ground.

Terminals				Voltage
Rear combination lamp (Tail and side marker) (+)		(-)	Ground	
Connector	Terminal (Wire color)			
RH	B111	1 (R/L)	Ground	Battery voltage
LH	B101			



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

Terminals				Voltage
License plate lamp (+)		(-)	Ground	
Connector	Terminal (Wire color)			
B104	1 (R/L)	Ground	Battery voltage	



OK or NG

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

PARKING, LICENSE PLATE AND TAIL LAMPS

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-16, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#).

OPEN DETECT 1 - 5>> Combination switch system malfunction. Refer to [LT-125, "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-23, "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)

AKS004R0

1. CHECK IPDM E/R

- Turn the ignition switch ON. Place the combination switch (lighting switch) in the ON position. Turn the ignition switch OFF.
- 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-20, "Function of Detecting Ignition Relay Malfunction"](#).

Bulb Replacement FRONT SIDE MARKER LAMP

AKS005/D

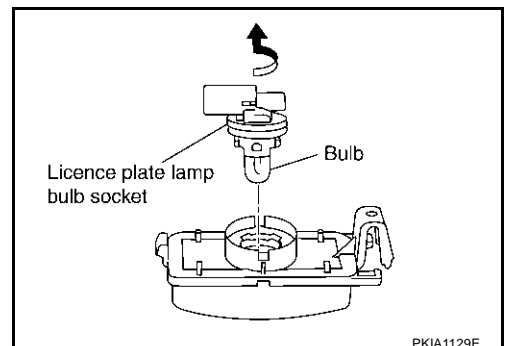
- Remove front side marker lamp. Refer to [LT-154, "FRONT SIDE MARKER LAMP"](#).
- Turn bulb socket left to release lock and remove it.
- Remove bulb.

Front side marker lamp : 12V - 3.8W

LICENSE PLATE LAMP

- Remove license plate lamp. Refer to.
- Turn bulb socket counterclockwise and unlock it.
- Remove bulb from it's socket.

License plate lamp : 12V - 5W



PARKING, LICENSE PLATE AND TAIL LAMPS

FRONT TURN SIGNAL (PARKING) LAMP

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

TAIL LAMP

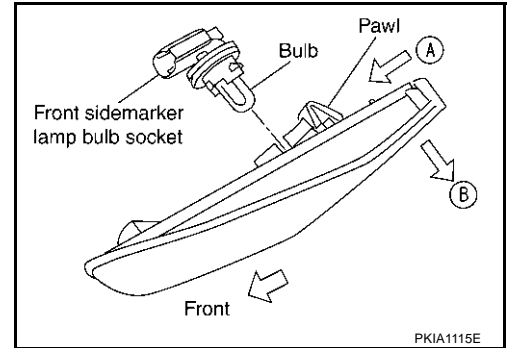
For bulb replacement, refer to [LT-155, "Bulb Replacement"](#) in "REAR COMBINATION LAMP".

Removal and Installation FRONT SIDE MARKER LAMP

AKS005IE

REMOVAL

1. Insert a slotted screwdriver or similar tool into fender protector gap to push front side marker lamp pawl in direction A (see figure) while pulling in direction B. Remove from vehicle.
2. Disconnect connectors of front side marker lamp.



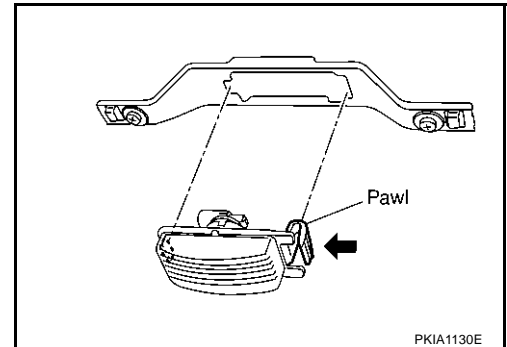
INSTALLATION

Install in the reverse order of removal.

LICENSE PLATE LAMP

REMOVAL

1. While pressing pawl on reverse side, push license plate towards you to remove.
2. Disconnect the license plate lamp connector.



INSTALLATION

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-30, "Removal and Installation"](#) in "HEAD LAMP (FOR USA)".

TAIL LAMP

Removal

For tail lamp removal and installation procedures, refer to [LT-155, "Removal and Installation"](#) in "REAR COMBINATION LAMP".

REAR COMBINATION LAMP

REAR COMBINATION LAMP

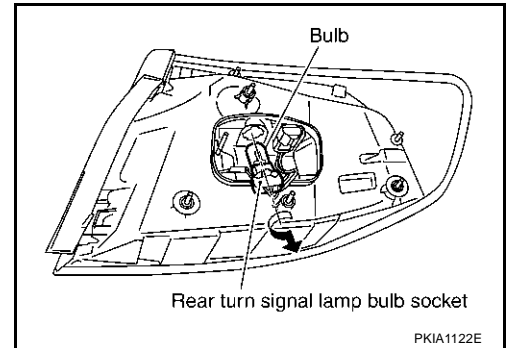
PFP:26554

Bulb Replacement

AKS000JO

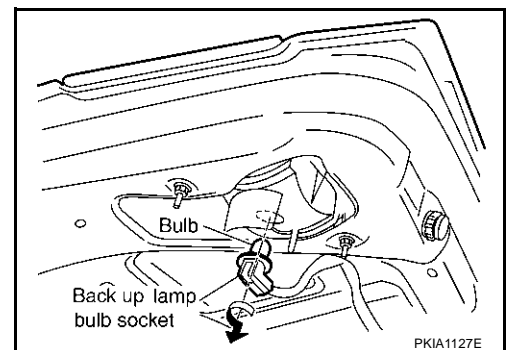
REAR FENDER SIDE (REAR TURN SIGNAL LAMP BULB)

1. Open trunk and remove trunk rear finisher. Refer to [EI-47, "TRUNK ROOM TRIM & TRUNK LID FINISHER"](#) in "EI" section.
2. Turn bulb socket counterclockwise and unlock it.
3. Remove bulb.



TRUNK LID SIDE (BACK-UP LAMP)

1. Remove trunk lid finisher. Refer to [EI-47, "TRUNK ROOM TRIM & TRUNK LID FINISHER"](#) in "EI" section.
2. Turn bulb socket counterclockwise and unlock it.
3. Remove bulb.



Stop/tail lamp (rear fender side)

: LED

(Replace together with rear combination lamp assembly.)

Rear turn signal lamp (rear fender side)

: 12V - 21W

Back-up lamp (trunk lid side)

: 12V - 18W

Rear side marker lamp (rear fender side)

: LED

(Replace together with rear combination lamp assembly.)

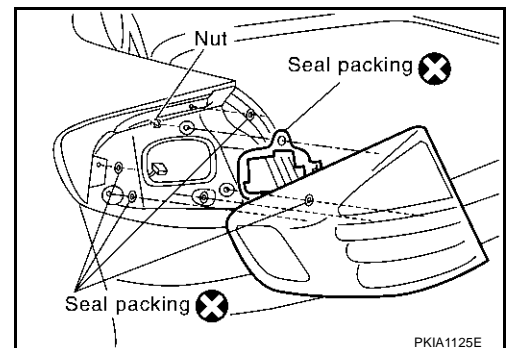
Removal and Installation

AKS000JP

REMOVAL

Rear Fender Side

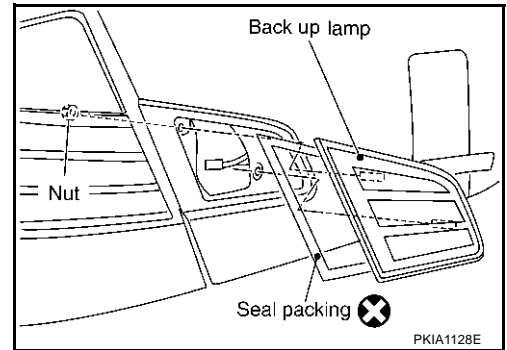
1. Open trunk and remove trunk rear finisher. Refer to [EI-47, "TRUNK ROOM TRIM & TRUNK LID FINISHER"](#) in "EI" section.
2. Disconnect rear combination lamp connector.
3. Remove rear combination lamp installation nuts.
4. Pull the rear combination lamp toward rear of the vehicle and remove from the vehicle.
5. Remove seal packing from the vehicle.



REAR COMBINATION LAMP

Trunk Lid Side

1. Remove trunk lid finisher. Refer to [EI-47, "TRUNK ROOM TRIM & TRUNK LID FINISHER"](#) in "EI" section.
2. Disconnect rear combination lamp connector.
3. Remove rear combination lamp installation nuts.
4. Remove rear combination lamp from trunk lid.
5. Remove seal packing from trunk lid.



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  : 3.2 N·m (0.33 kg·m, 28 in·lb)

VANITY MIRROR LAMP

VANITY MIRROR LAMP

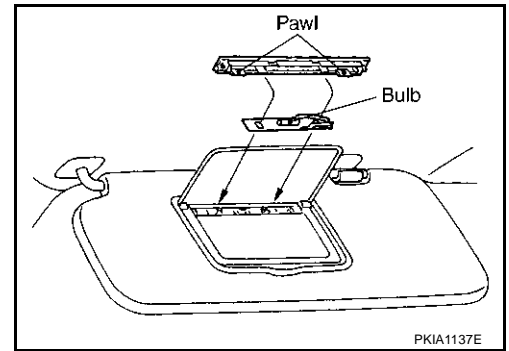
PFP:96400

Bulb Replacement

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

Vanity mirror lamp : 12V - 1.32W

AKS000N3



A

B

C

D

E

F

G

H

I

J

LT

L

M

MAP LAMP

MAP LAMP

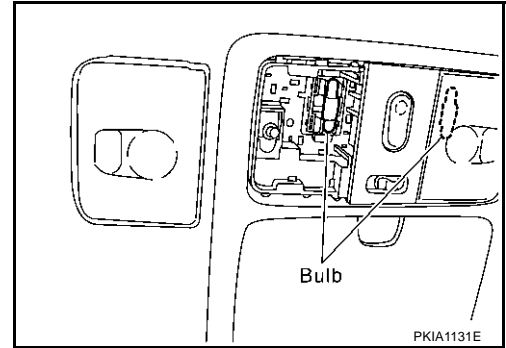
PFP:26430

Bulb Replacement of Map Lamp

AKS0092S

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

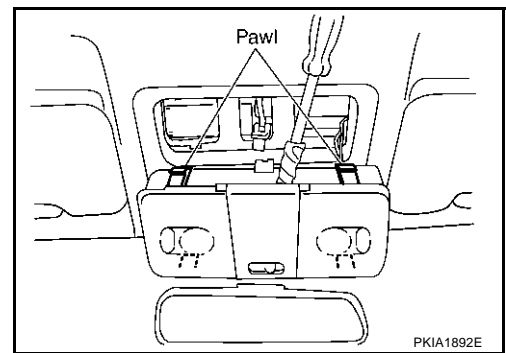
Map lamp : 12V - 8W



Removal and Installation of Map Lamp

AKS0092T

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

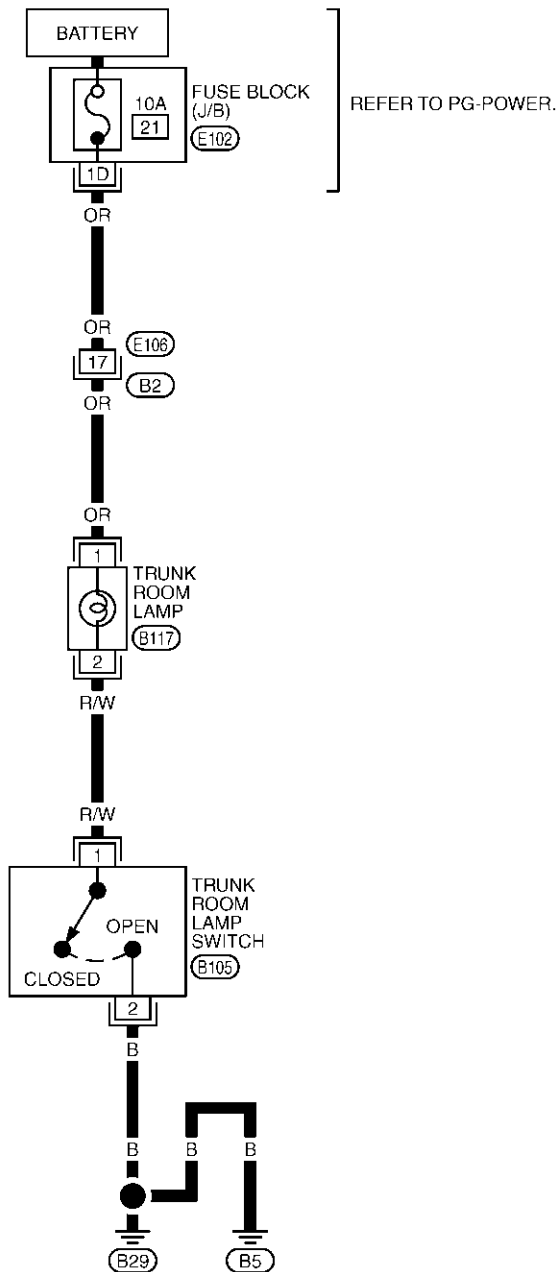
PFP:26470

TRUNK ROOM LAMP

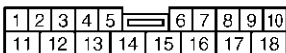
Wiring Diagram — INT/L —

AKS0092U

LT-INT/L-01



A
B
C
D
E
F
G
H
I
J
LT
L
M



REFER TO THE FOLLOWING.

E102 - FUSE BLOCK-JUNCTION BOX (J/B)

TKWT0362E

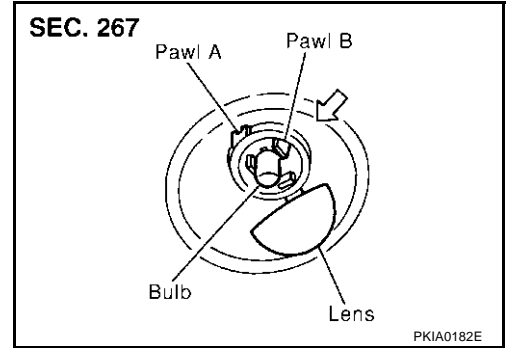
TRUNK ROOM LAMP

Bulb Replacement, Removal and Installation of Trunk Room Lamp

AKS0092V

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



PERSONAL LAMP

PERSONAL LAMP

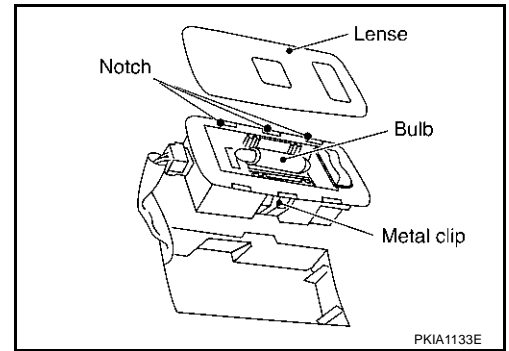
PFP:26415

Bulb Replacement

AKS000MY

1. Remove personal lamp. Refer to [LT-161, "Removal and Installation"](#).
2. Insert a screwdriver or similar tool and remove lens.
3. Remove bulb.

Personal lamp : 12V - 8W



AKS000MZ

Removal and Installation

1. Use a clip driver or similar tool to press metal clip and remove personal lamp.
2. Disconnect personal lamp connector.

A
B
C
D
E
F
G
H
I
J
LT
L
M

IGNITION KEY HOLE ILLUMINATION

IGNITION KEY HOLE ILLUMINATION

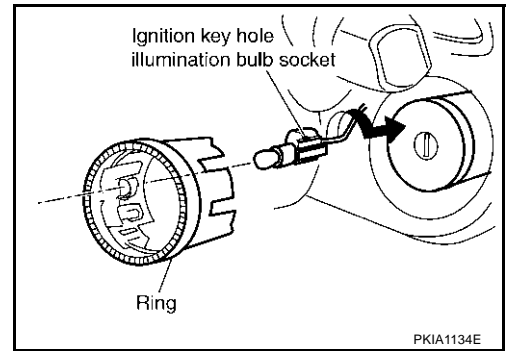
PFP:48476

Removal and Installation

AKS000JY

1. Remove cluster lid A. 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

GLOVE BOX LAMP

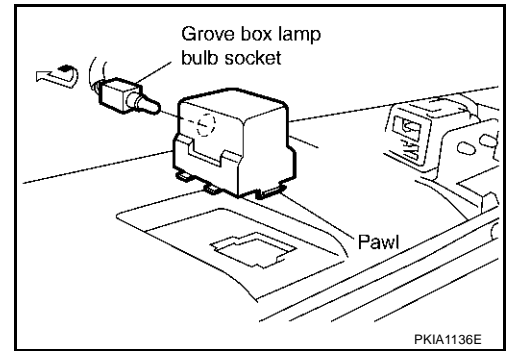
PF0:68520

Removal and Installation

AKS000JZ

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



A
B
C
D
E
F
G
H
I
J
LT
L
M

ASHTRAY ILLUMINATION

ASHTRAY ILLUMINATION

PFP:25860

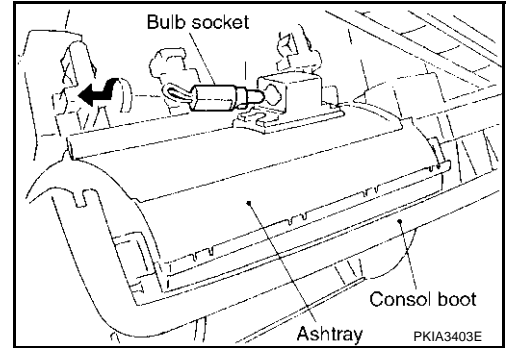
Bulb Replacement, Removal and Installation (M/T)

AKS0081F

1. Remove console boot. 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.



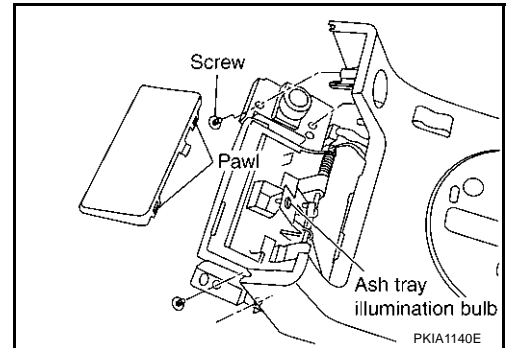
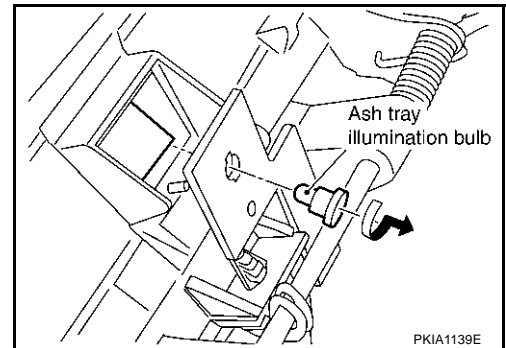
Bulb Replacement, Removal and Installation (A/T)

AKS0081G

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

CIGARETTE LIGHTER ILLUMINATION

PPF:25331

Removal and Installation

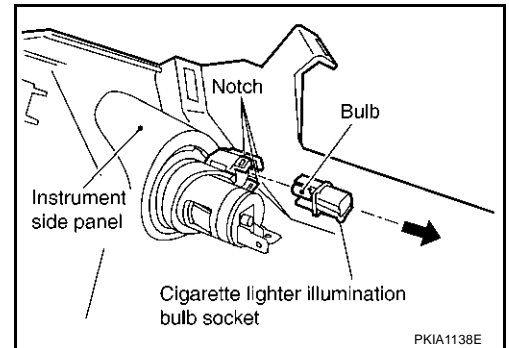
AKS000K1

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.



A

B

C

D

E

F

G

H

I

J

LT

L

M

INTERIOR ROOM LAMP

PFP:26410

System Description

AKS005PY

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, passenger door, RH rear door, or LH rear 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 fuse block (J/B)]
- to key switch terminal 2
- through 50A fusible link [letter F, located in fuse and fusible link block]
- to BCM (body control module) terminal 7.

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

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

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

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

Ground is supplied:

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

When driver side door is opened, ground is supplied

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

When 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 (with interruption detection function for all door window)

- through grounds terminals M30 and M66
- to power window main switch terminal 15 (door lock and unlock switch) or power window sub-switch terminal 7 (door lock and unlock switch)
- from power window main switch terminal 9 (door lock and unlock switch) or power window sub-switch terminal 11 (front passenger side)
- to BCM (body control module) terminal 74.

When the driver side door is unlocked by the door lock and unlock switch, BCM (body control module) receives a ground signal (without interruption detection function for all door window)

- through grounds terminals M30 and M66
- to power window main switch terminal 5 (door lock and unlock switch) or power window sub-switch terminal 7 (door lock and unlock switch)
- from power window main switch terminal 8 (door lock and unlock switch) or power window sub-switch terminal 11 (front passenger side)
- to BCM (body control module) terminal 74.

INTERIOR ROOM LAMP

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 2
- from driver side door lock assembly (door key cylinder switch) terminal 3
- to power window main switch terminal 5 (door lock and unlock switch)
- from power window main switch terminal 9 (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. (With: Vanity mirror lamp).

MAP LAMP TIMER OPERATION

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

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

Power is supplied

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

When all doors are closed (all door switches OFF) and key is removed from key cylinder (key switch OFF), power will not be supplied to BCM terminal 62.

Ground is supplied

- from BCM terminal 74
- to power window main switch (door lock and unlock switch) terminal 9 (with interruption detection function for all door window).

A
B
C
D
E
F
G
H
I
J
LT
L
M

INTERIOR ROOM LAMP

- to power window main switch (door lock and unlock switch) terminal 8 (without interruption detection function for all door window)
- through power window main switch (door lock and unlock switch) terminal 15 (with interruption detection function for all window)
- through power window main switch (door lock and unlock switch) terminal 5 (without interruption detection function for all window).

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

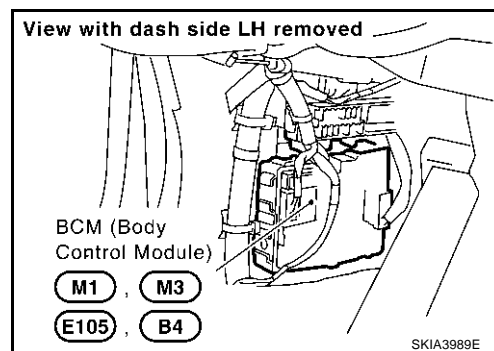
If the room lamp remains illuminated by the door switch open signal, or if the room lamp switch is in the ON position for more than 30 minutes after the ignition switch is turned to the OFF position, the BCM will automatically turn off the map lamp, step lamp, and/or personal lamp and vanity mirror lamp.

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

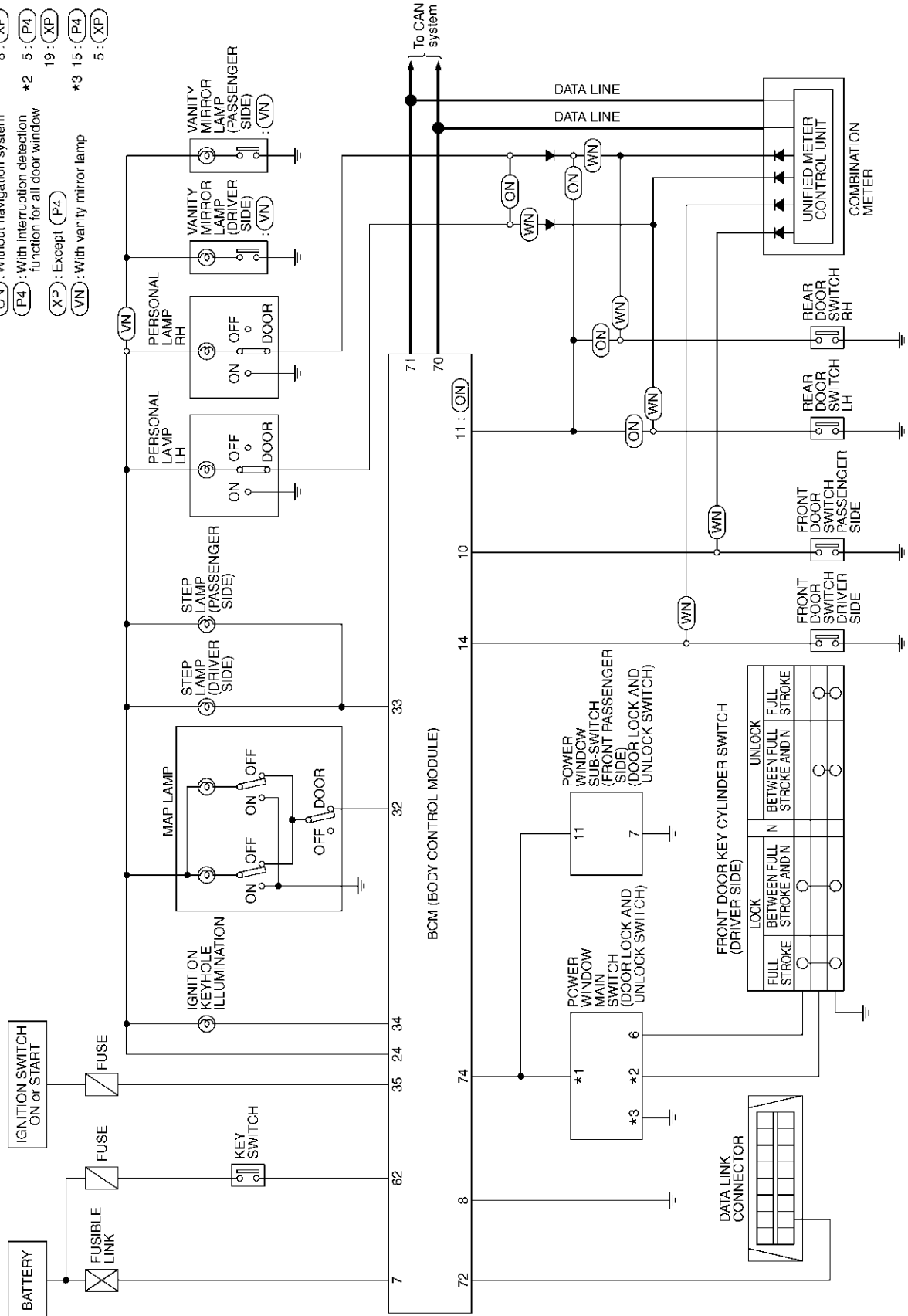


INTERIOR ROOM LAMP

Schematic

AKS005Q0

- (WN) : With navigation system
 - (ON) : Without navigation system
 - (P4) : With interruption detection function for all door window
 - (XP) : Except (P4)
 - (VN) : With vanity mirror lamp
- *1 : With navigation system
 *2 : Without navigation system
 *3 : With navigation system



A
B
C
D
E
F
G
H
I
J
K
L
M

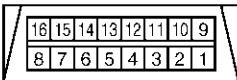
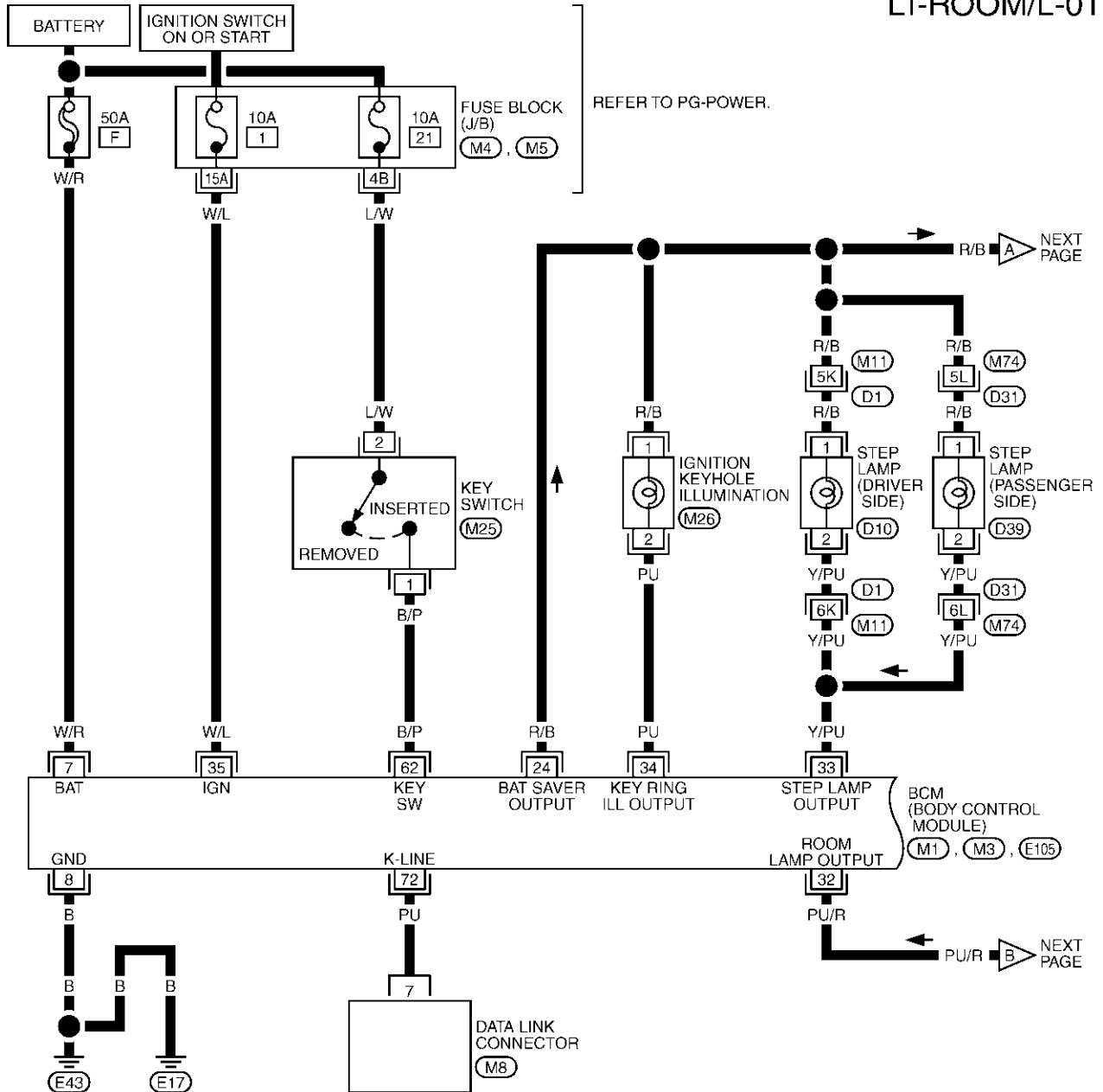
LT

INTERIOR ROOM LAMP

Wiring Diagram — ROOM/L —

AKS005Q1

LT-ROOM/L-01



(M8) W



(M25) BR



(M26) W



(D10), (D39) W

REFER TO THE FOLLOWING.

(D1), (D31) -SUPER MULTIPLE JUNCTION (SMJ)

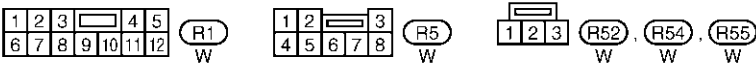
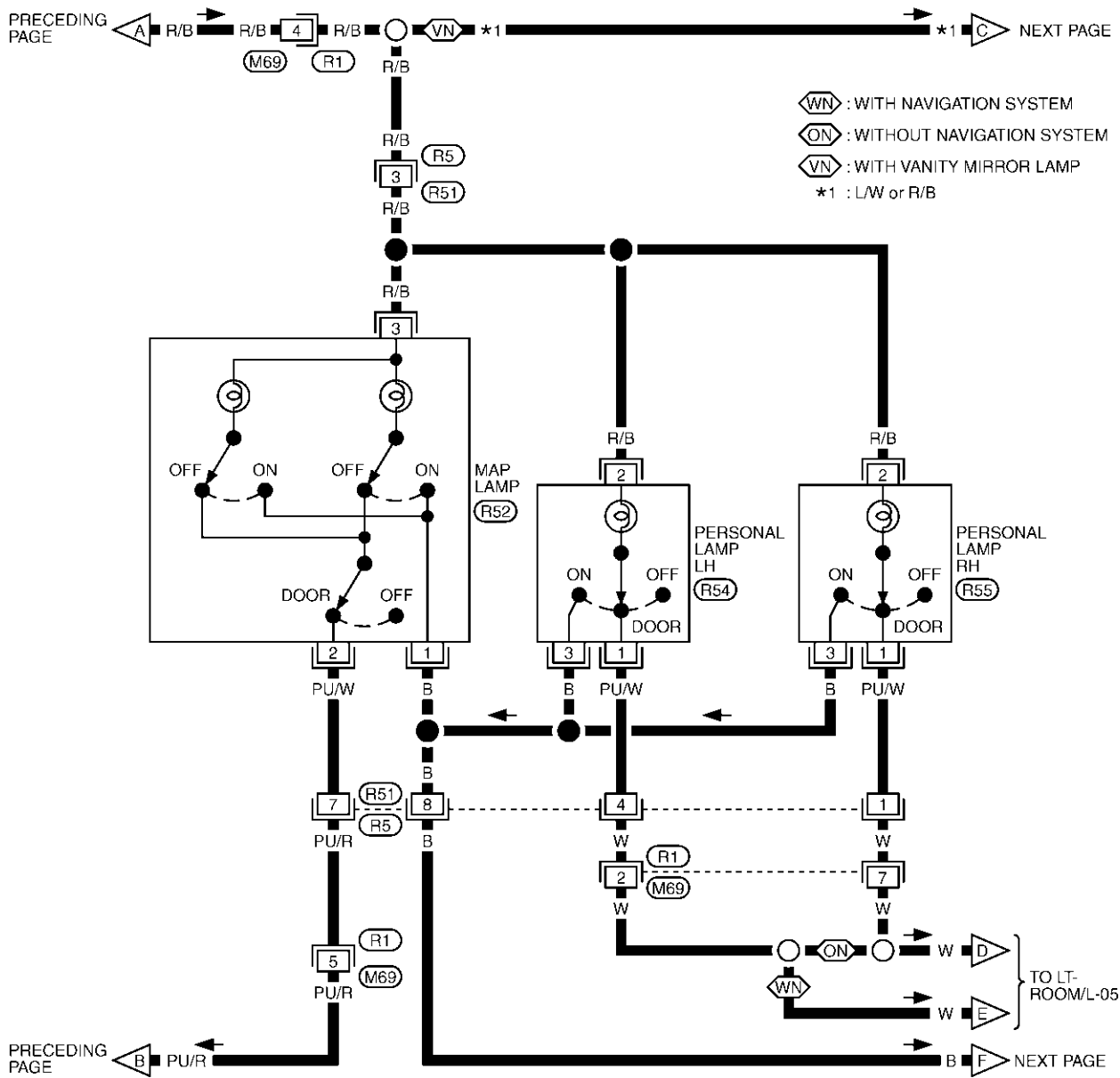
(M4), (M5) -FUSE BLOCK-JUNCTION BOX (J/B)

(M1), (M3), (E105) -ELECTRICAL UNITS

TKWT0323E

INTERIOR ROOM LAMP

LT-ROOM/L-02



A
B
C
D
E
F
G
H
I
J
K
L
M

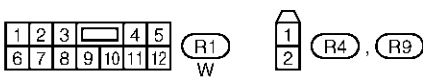
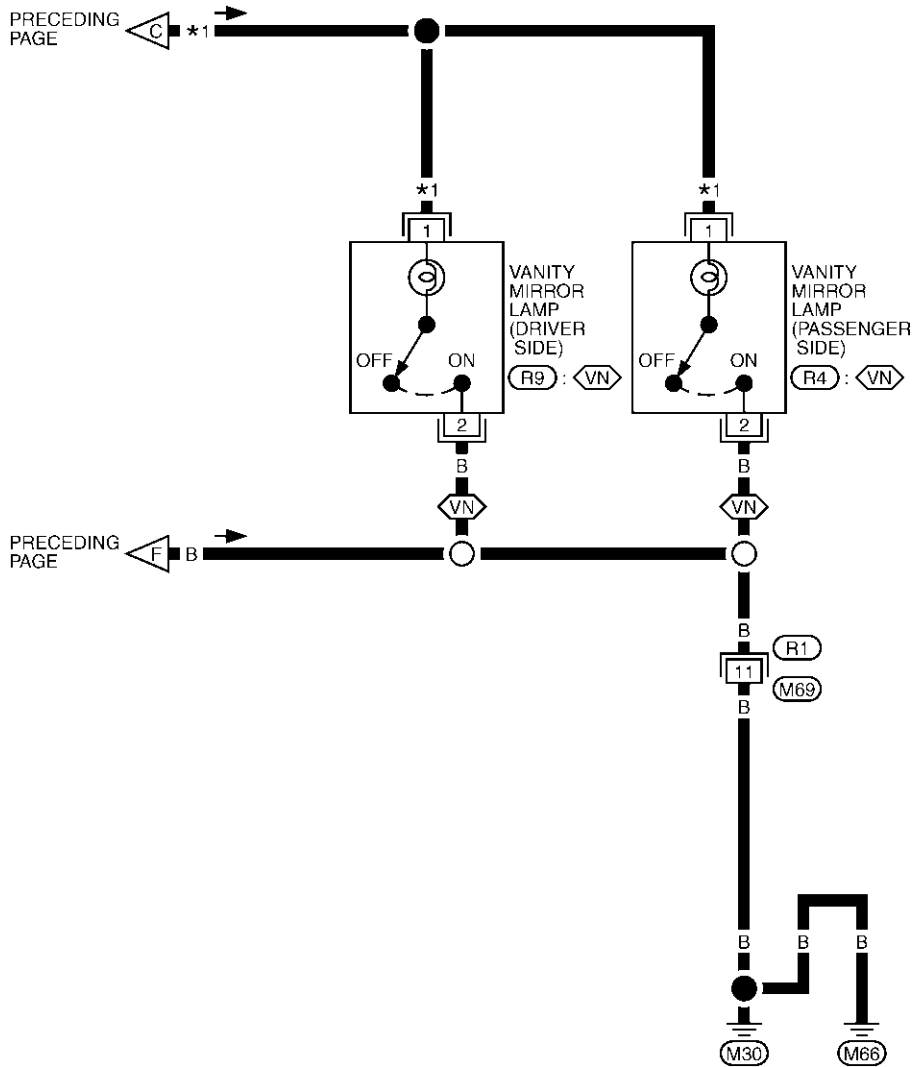
LT

TKWT0701E

INTERIOR ROOM LAMP

LT-ROOM/L-03

⬡VN⬢ : WITH VANITY MIRROR LAMP
 *1 : L/W or R/B



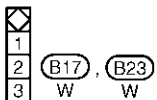
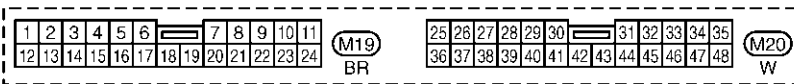
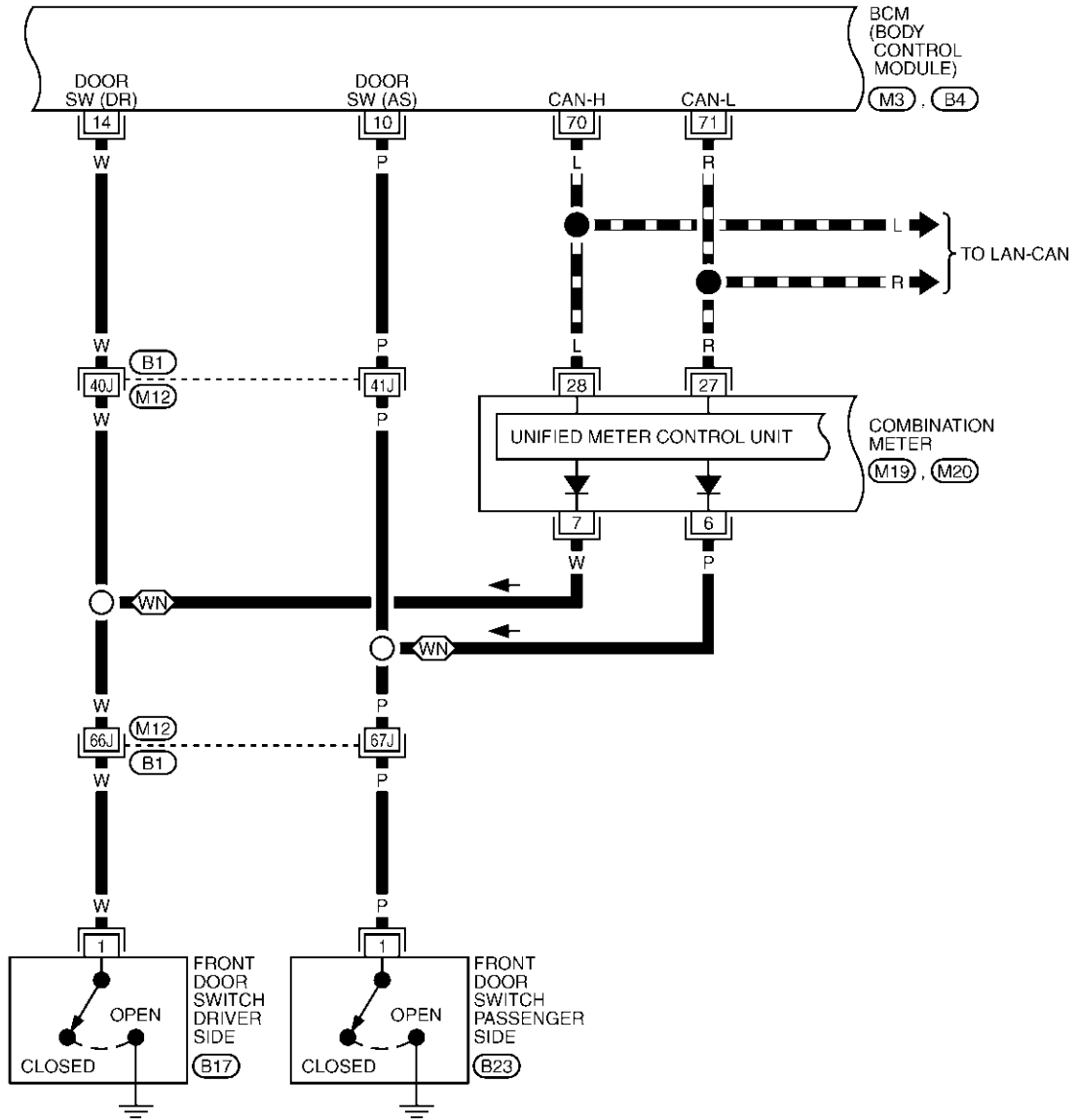
TKWT0702E

INTERIOR ROOM LAMP

LT-ROOM/L-04

▬ : DATA LINE

◀WN▶ : WITH NAVIGATION SYSTEM



REFER TO THE FOLLOWING.



(B1) -SUPER MULTIPLE JUNCTION (SMJ)

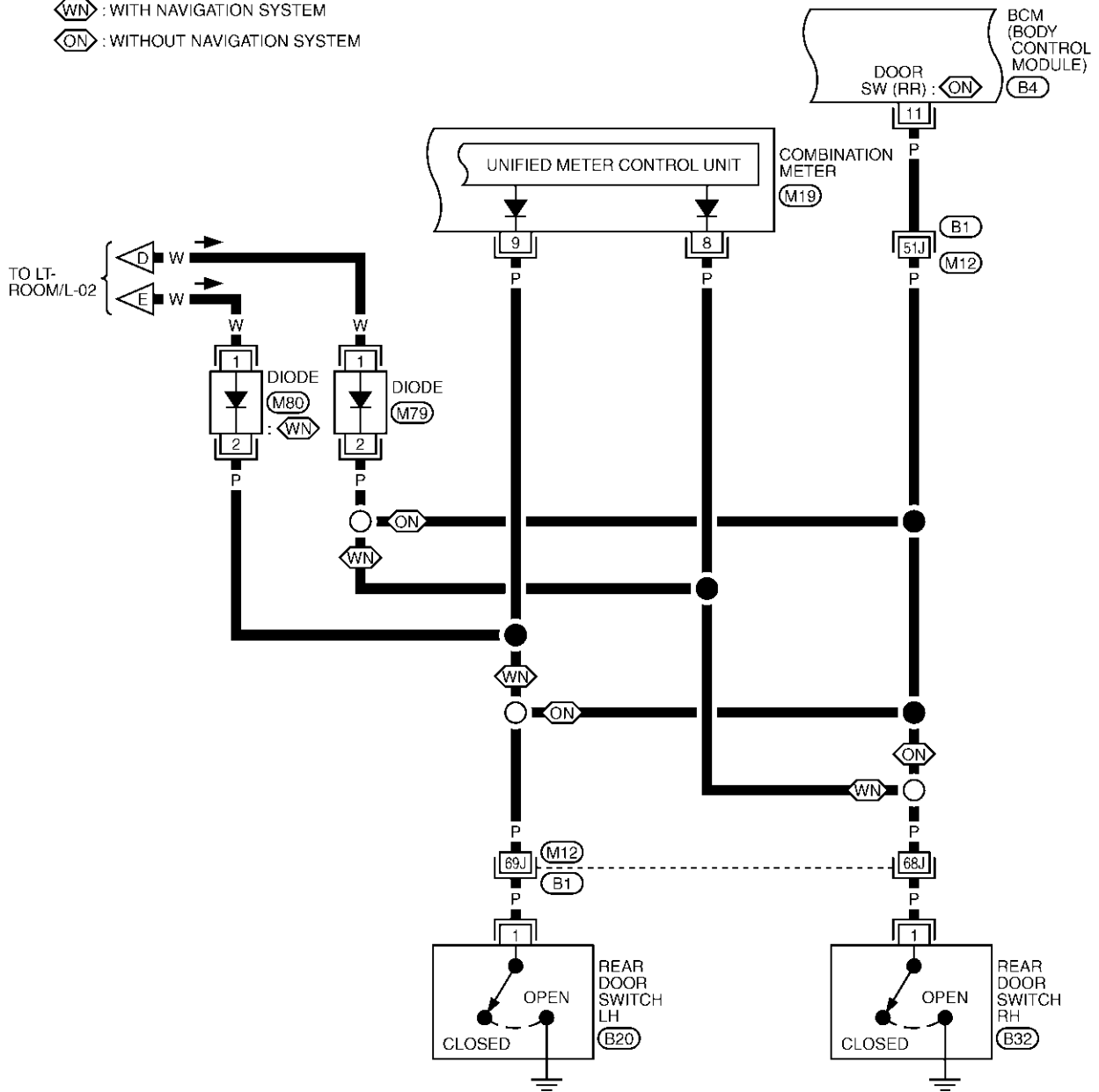
(M3), (B4) -ELECTRICAL UNITS

TKWT0326E

INTERIOR ROOM LAMP

LT-ROOM/L-05

 : WITH NAVIGATION SYSTEM
 : WITHOUT NAVIGATION SYSTEM



1	2	3	4	5	6	7	8	9	10	11		
12	13	14	15	16	17	18	19	20	21	22	23	24

(M19) BR

1	2
---	---

(M79), (M80)

1
2
3

(B20), (B32) W W

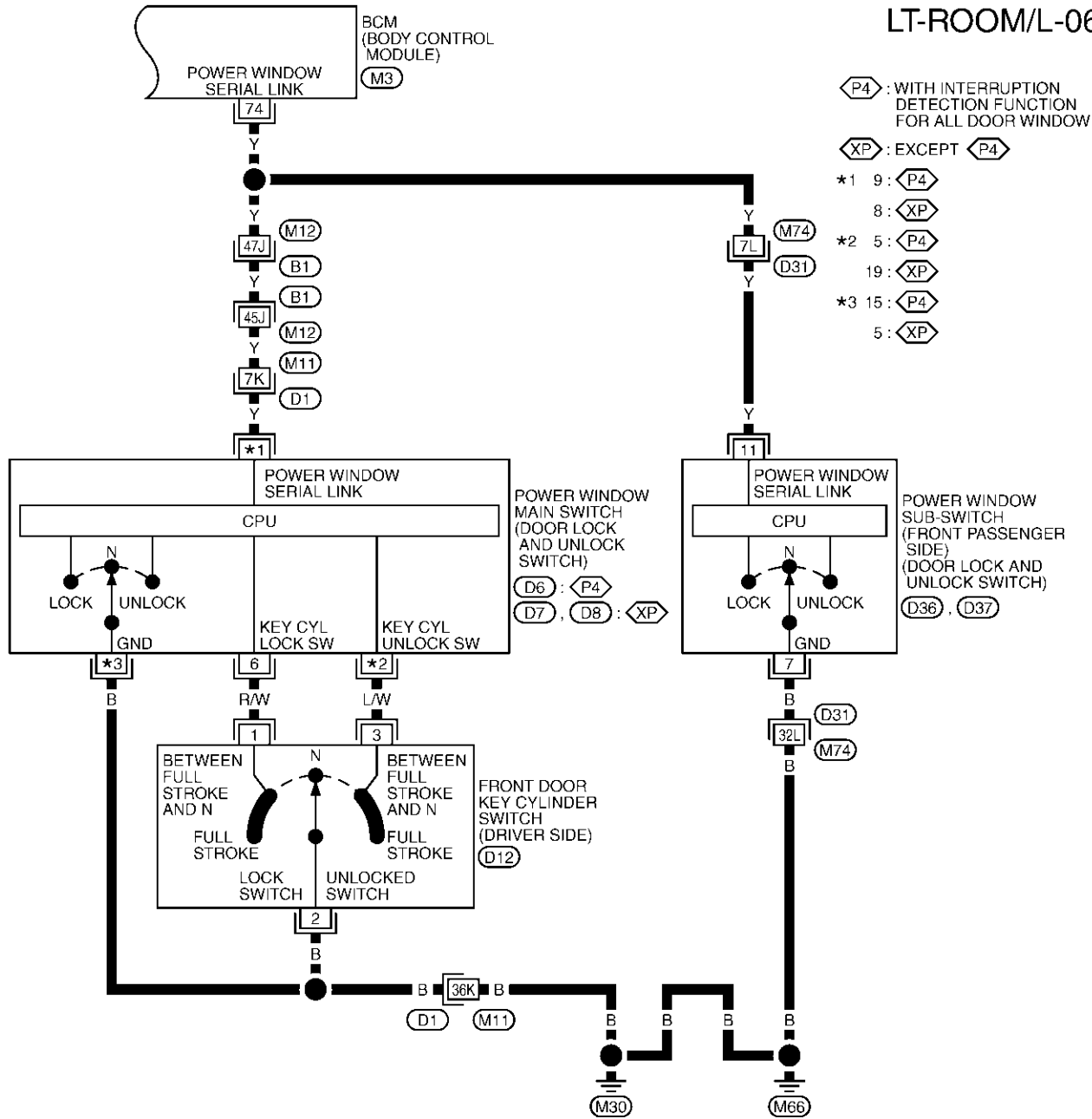
REFER TO THE FOLLOWING.

- (B1) -SUPER MULTIPLE JUNCTION (SMJ)
- (B4) -ELECTRICAL UNITS

TKWT0703E

INTERIOR ROOM LAMP

LT-ROOM/L-06



P4 : WITH INTERRUPTION
DETECTION FUNCTION
FOR ALL DOOR WINDOW

XP : EXCEPT **P4**

*1 9: **P4**

8: **XP**

*2 5: **P4**

19: **XP**

*3 15: **P4**

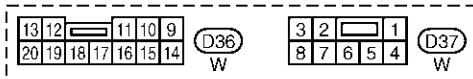
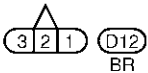
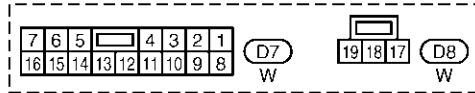
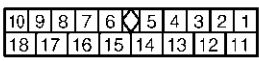
5: **XP**

POWER WINDOW
MAIN SWITCH
(DOOR LOCK
AND UNLOCK
SWITCH)
D6 : **P4**
D7 , D8 : **XP**

POWER WINDOW
SUB-SWITCH
(FRONT PASSENGER
SIDE)
(DOOR LOCK AND
UNLOCK SWITCH)
D36 , D37

FRONT DOOR
KEY CYLINDER
SWITCH
(DRIVER SIDE)
D12

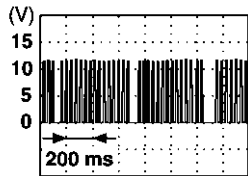
REFER TO THE FOLLOWING.
B1 , D1 , D31 -SUPER
MULTIPLE JUNCTION (SMJ)
M3 -ELECTRICAL UNITS



INTERIOR ROOM LAMP

Terminals and Reference Value for BCM

AKS005Q2

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	W	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	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	—	—		 <p>PIIA2344J</p>

How to Proceed With Trouble Diagnosis

AKS005Q3

1. Confirm the trouble symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-166, "System Description"](#) .
3. Carry out the Preliminary Inspection. Refer to [LT-177, "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

INTERIOR ROOM LAMP

AKS005Q4

Preliminary Inspection CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown BCM fuses.

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

Refer to [LT-170. "Wiring Diagram — ROOM/L —"](#) .

OK or NG

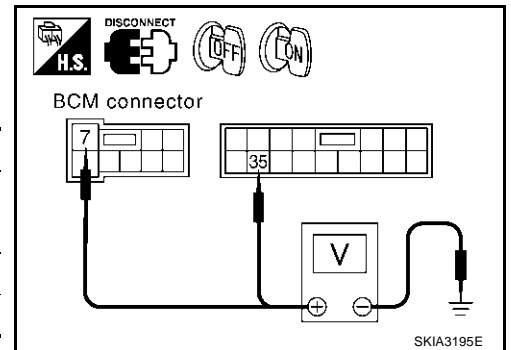
OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to [PG-3. "POWER SUPPLY ROUTING CIRCUIT"](#) .

2. CHECK POWER SUPPLY CIRCUIT

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

Terminals		(-)	Ignition switch position	
(+) Connector			OFF	ON
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

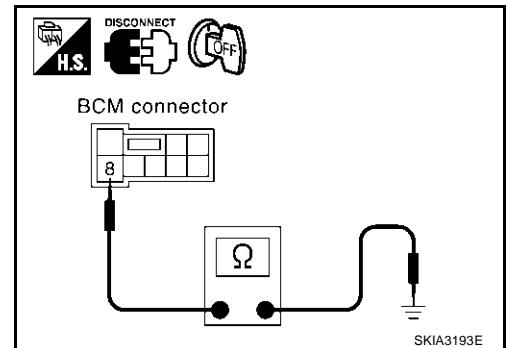
Check continuity between BCM harness connector and ground.

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

OK or NG

OK >> INSPECTION END

NG >> Check harness ground circuit.



INTERIOR ROOM LAMP

CONSULT-II Function

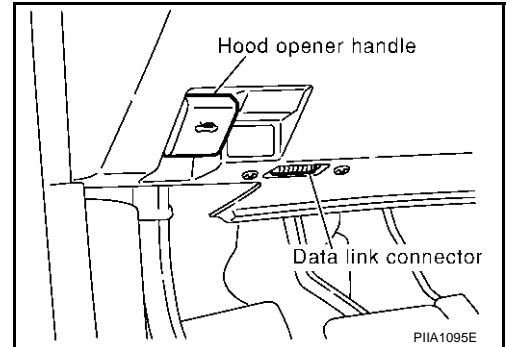
AKS005Q5

CONSULT-II performs the following functions communicating with BCM.

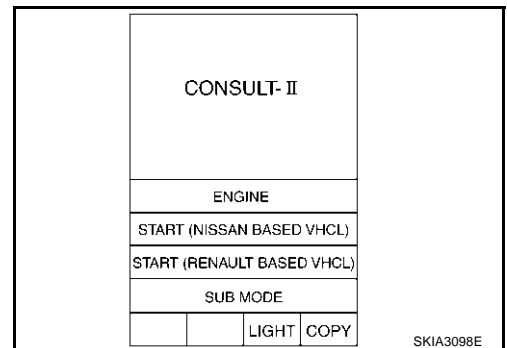
BCM diagnosis part	Check item, diagnosis mode	Description
INTERIOR LAMP	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending driving signal to them.

CONSULT-II BASIC OPERATION

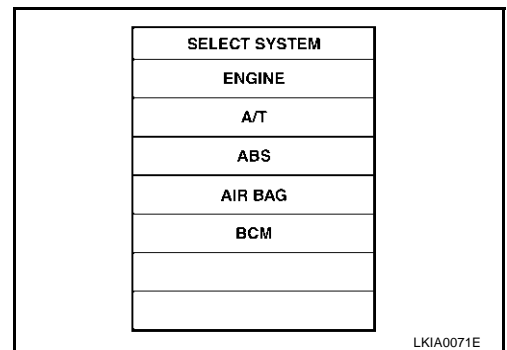
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



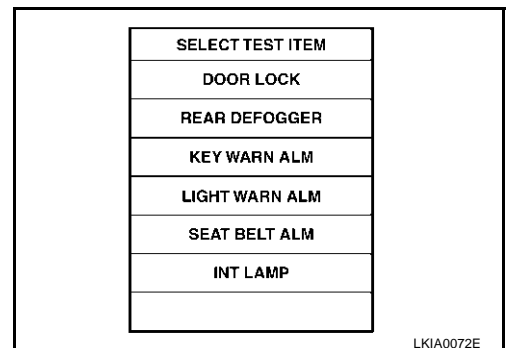
2. Touch "START (NISSAN BASED VHCL)".



3. Touch "BCM" on "SELECT SYSTEM" screen. If "BCM" is not indicated, refer to [GI-38, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



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



INTERIOR ROOM LAMP

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	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 "ON/OFF"	Displays "Door open (ON)/Door closed (OFF)" status, determined from rear door switch signals.

INTERIOR ROOM LAMP

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

AKS00506

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-179, "Display Item List"](#) for switches and their functions.

OK or NG

- OK >> GO TO 2.
 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

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-23, "Removal and Installation of BCM"](#) .
 NG >> GO TO 3.

ACTIVE TEST	
INT LAMP	ON
	OFF

LKIA0092E

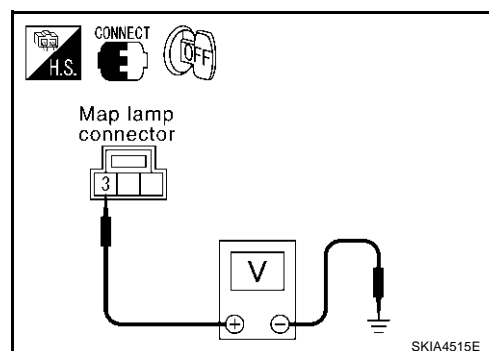
3. INSPECTION 2: BCM AND MAP LAMP

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

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

OK or NG

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



INTERIOR ROOM LAMP

4. CHECK MAP LAMP

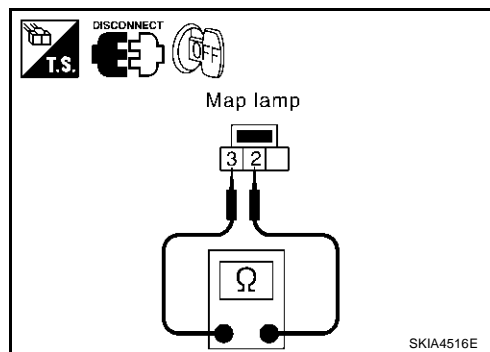
1. Disconnect map lamp connector.
2. Check continuity between map lamp.

Terminal map lamp		Condition	Continuity
3	2		
		map lamp switch is OFF.	No

OK or NG

OK >> GO TO 5.

NG >> Replace map lamp.



5. INSPECTION 3: BCM AND MAP LAMP

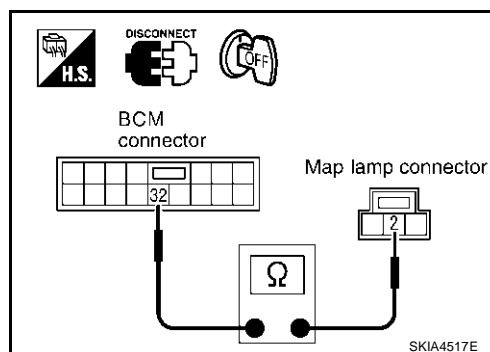
1. Disconnect BCM connector.
2. Check continuity between harness connector of BCM and harness connector of map lamp.

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-23, "Removal and Installation of BCM"](#).

NG >> Repair harness or connector.



6. INSPECTION 4: BCM AND MAP LAMP

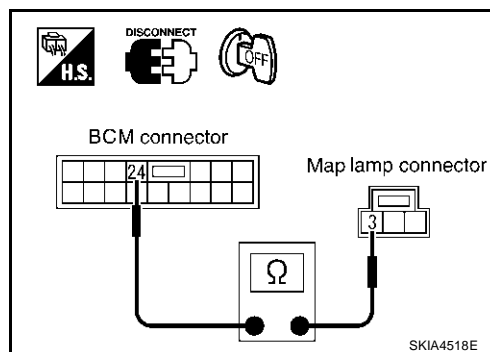
1. Disconnect BCM connector and map lamp connector.
2. Check continuity between harness connector of BCM and harness connector of map lamp.

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-23, "Removal and Installation of BCM"](#).

NG >> Repair harness or connector.



Ignition Key Hole Illumination Control Does Not Operate

AKS005Q7

1. CHECK BULB

Check lamp bulb lamp which does not operate.

OK or NG

OK >> GO TO 2.

NG >> Replace bulb.

INTERIOR ROOM LAMP

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-179, "Display Item List"](#) for switches and their functions.

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

OK or NG

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

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-23, "Removal and Installation of BCM"](#).
- NG >> GO TO 4.

ACTIVE TEST	
IGN ILLUM	ON
OFF	

SKIA3992E

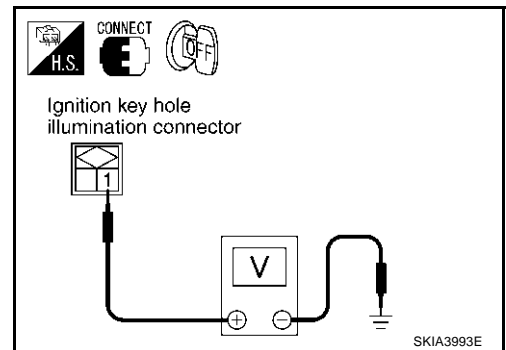
4. INSPECTION 2: BCM AND IGNITION KEY HOLE ILLUMINATION

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

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

OK or NG

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



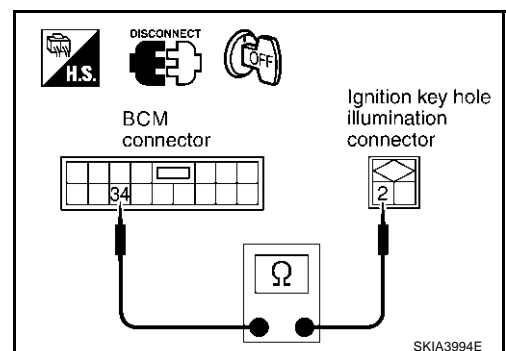
5. INSPECTION 3: BCM AND IGNITION KEY HOLE ILLUMINATION

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)	M26	2 (PU)	Yes

OK or NG

- OK >> Replace BCM. Refer to [BCS-23, "Removal and Installation of BCM"](#).
- NG >> Repair harness or connector.



INTERIOR ROOM LAMP

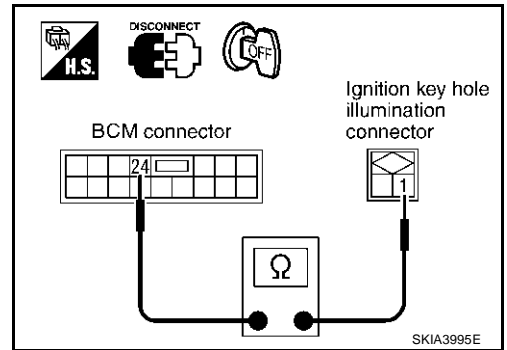
6. INSPECTION 4: BCM AND IGNITION KEY HOLE ILLUMINATION

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-23, "Removal and Installation of BCM"](#).
- NG >> Repair harness or connector.



Step Lamp Does Not Operate

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.

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

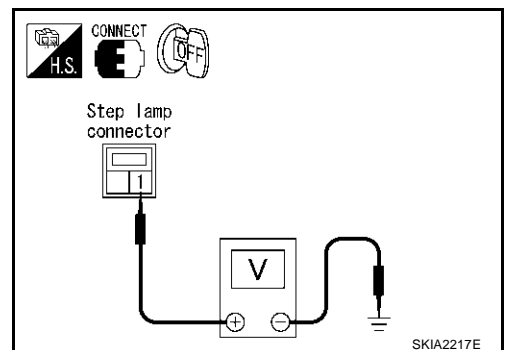
2. INSPECTION 1: BCM AND STEP LAMP

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

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

OK or NG

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

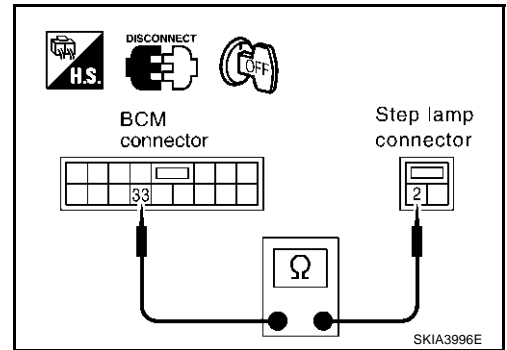


INTERIOR ROOM LAMP

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 (Y/PU)	Yes
		Passenger side	D39	2 (Y/PU)	



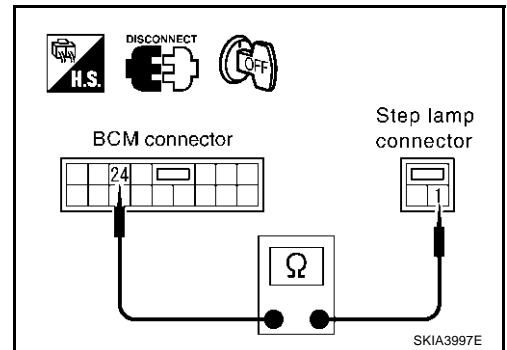
OK or NG

- OK >> Replace BCM. Refer to [BCS-23, "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 (R/B)	Yes
		Passenger side	D39		



OK or NG

- OK >> Replace BCM. Refer to [BCS-23, "Removal and Installation of BCM"](#) .
 NG >> Repair harness or connector.

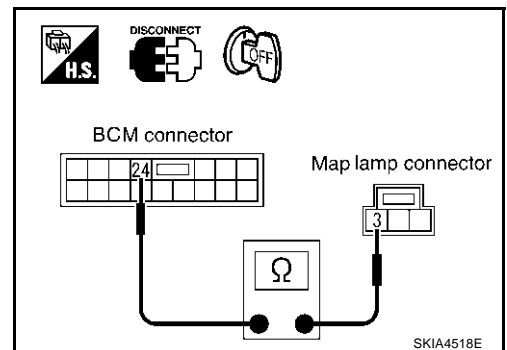
All Interior Room Lamps Do Not Operate

AKS005Q9

1. INSPECTION: BCM AND MAP LAMP

1. Turn ignition switch OFF.
2. Disconnect BCM connector and map lamp connector.
3. 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

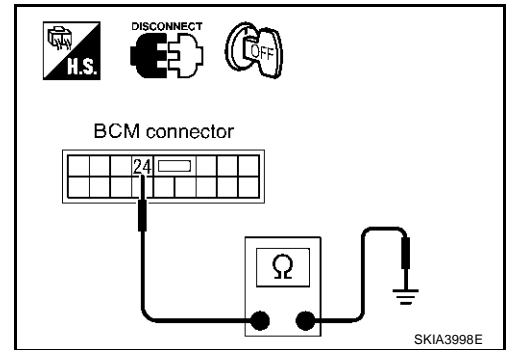
- OK >> GO TO 2.
 NG >> Repair harness or connector.

INTERIOR ROOM LAMP

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



OK or NG

- OK >> Replace BCM. Refer to [BCS-23, "Removal and Installation of BCM"](#).
- NG >> After repairing harness, be sure to disconnect battler negative cable, and then reconnect.

Bulb Replacement

MAP LAMP

Refer to [LT-158, "Bulb Replacement of Map Lamp"](#) in "MAP LAMP".

Removal and Installation

MAP LAMP

Refer to [LT-158, "Removal and Installation of Map Lamp"](#) in "MAP LAMP".

IGNITION KEY HOLE ILLUMINATION LAMP

Refer to [LT-162, "Removal and Installation"](#) in "IGNITION KEY HOLE ILLUMINATION".

A
B
C
D
E
F
G
H
I
J
LT
L
M

ILLUMINATION

PFP:27545

System Description

AKS005RZ

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

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

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

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

- to BCM (body control module) terminal 36
- through 10A fuse [No. 6, located in 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 receives input signal requesting the illumination lamps to illuminate. This input signal is communicated to the IPDM E/R across the CAN communication lines. The CPU of the IPDM E/R controls the tail lamp relay coil, which, when energized, directs power

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

ILLUMINATION

- to heated seat switch (passenger side) (illumination) terminal 5 (with M/T heated seat),
- to illumination control switch terminal 1,
- to upper glove box lamp terminal 1 (without navigation system),
- to glove box lamp terminal 1,
- to audio unit terminal 8.

A
B

Illumination control

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

C
D
E
F
G

Ground is supplied at all times

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

H
I
J

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.

LT

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.

L
M

ILLUMINATION

CAN Communication System Description

AKS005S0

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

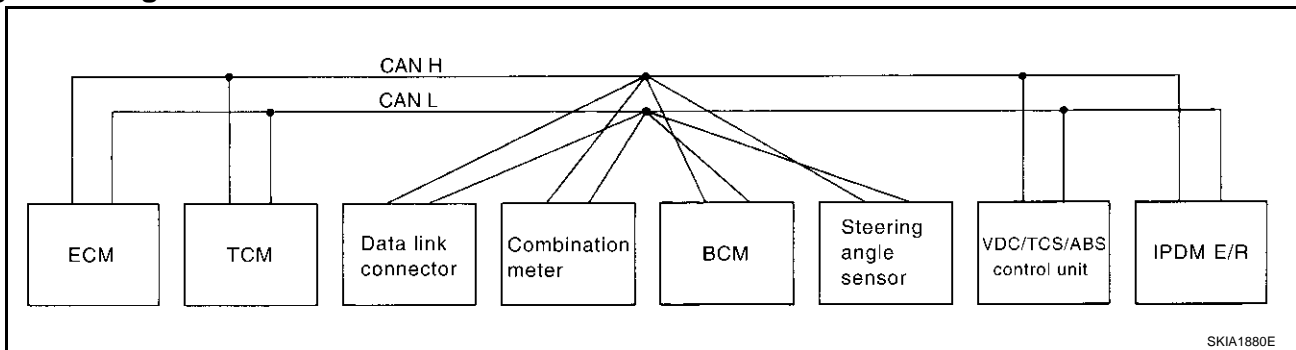
AKS00C4L

Body type	Sedan	
Axle	2WD	
Engine	VQ35DE	
Transmission	A/T	M/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-188. "TYPE 1"	LT-190. "TYPE 2"

×: Applicable

TYPE 1

System Diagram



Input/Output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Combina- tion meter	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R
Engine torque signal	T	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					

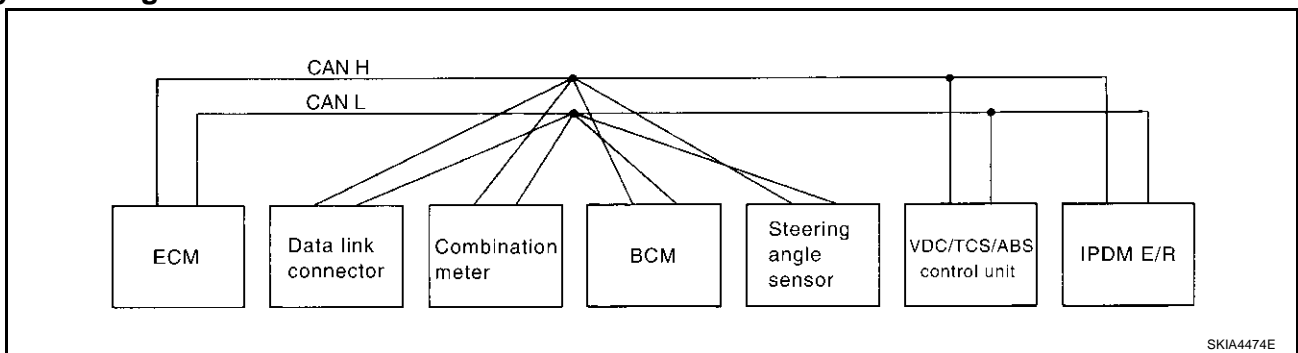
ILLUMINATION

Signals	ECM	TCM	Combina- tion meter	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R
Stop lamp switch signal		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	
A/C 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	R						T
Position lights request signal			R	T			R
Low beam request signal				T			R
Low beam status signal	R						T
High beam request signal			R	T			R
High beam status signal	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			R
Wake up request 2 signal			R	T			R
Door switch signal (without naviga- tion 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			
ASCD SET lamp signal	T		R				
ASCD CRUISE lamp signal	T		R				
ASCD OD cancel request signal	T	R					
ASCD operation signal	T	R					
Output shaft 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 sig- nal	R						T
Manual mode signal		R	T				

ILLUMINATION

Signals	ECM	TCM	Combina- tion meter	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R
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	

TYPE 2 System Diagram



Input/Output Signal Chart

T: Transmit R: Receive

Signals	ECM	Combina- tion 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				
A/C 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			

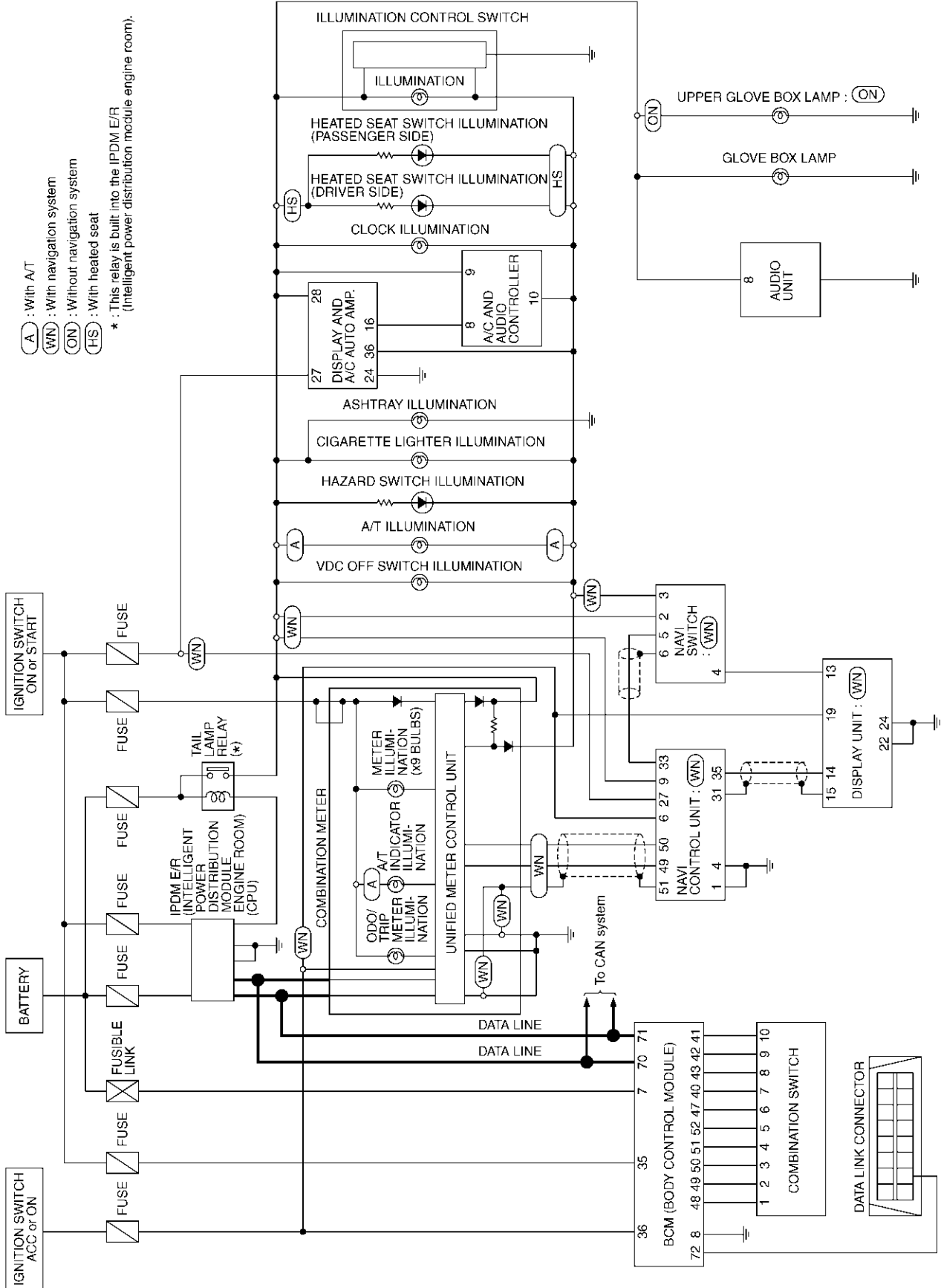
ILLUMINATION

Signals	ECM	Combina- tion meter	BCM	Steering angle sensor	VDC/TCS/ ABS control unit	IPDM E/R	A
Wake up request 2 signal		R	T				B
Door switch signal (without navigation system)		R	T			R	C
Door switch signal (with navigation system)		T	R				D
Turn indicator signal		R	T				E
Seat belt buckle switch signal		T	R				F
Oil pressure switch signal		R				T	G
Buzzer output signal		R	T				H
Malfunction indicator lamp signal	T	R					I
ASCD SET lamp signal	T	R					J
ASCD CRUISE lamp signal	T	R					LT
Fuel level sensor signal	R	T					L
Front wiper request signal			T			R	M
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		

ILLUMINATION

Schematic

AKS005S2



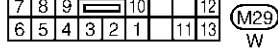
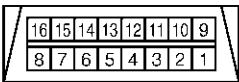
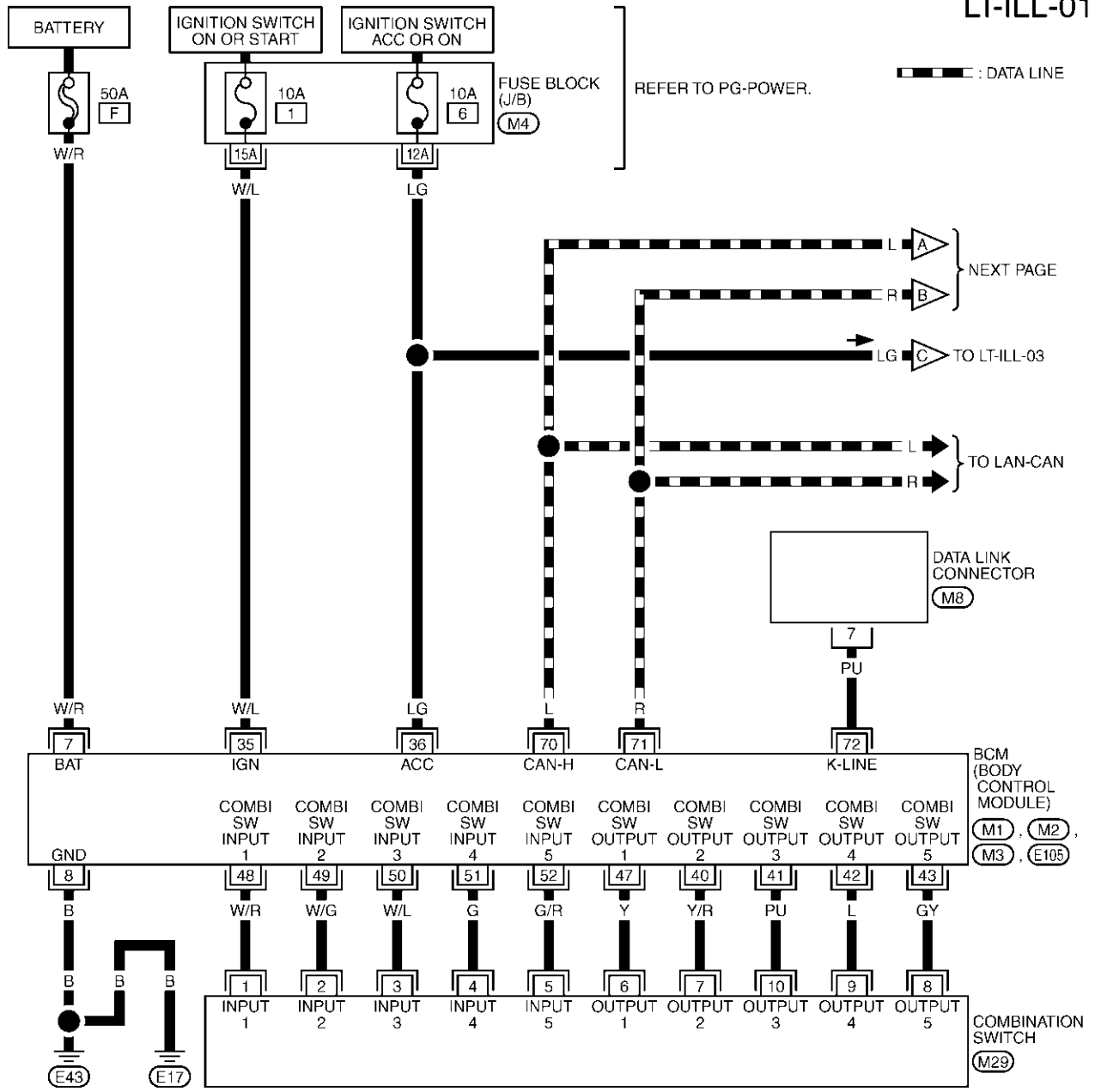
TKWT0933E

ILLUMINATION

Wiring Diagram — ILL —

AKS005S3

LT-ILL-01



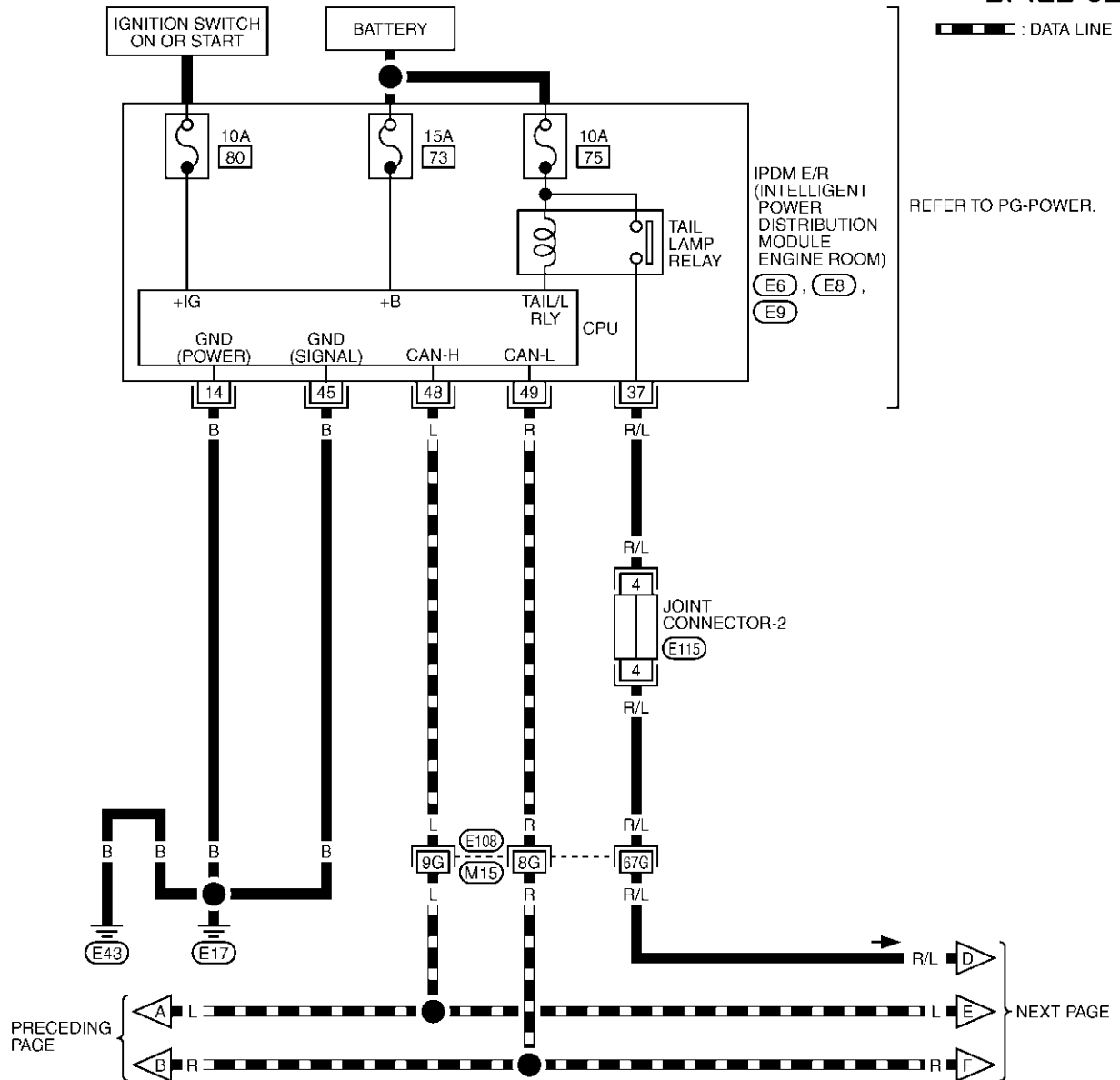
REFER TO THE FOLLOWING.

- (M4) - FUSE BLOCK-JUNCTION BOX (J/B)
- (M1), (M2), (M3), (E105) - ELECTRICAL UNITS

TKWT0705E

ILLUMINATION

LT-ILL-02



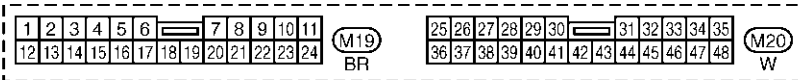
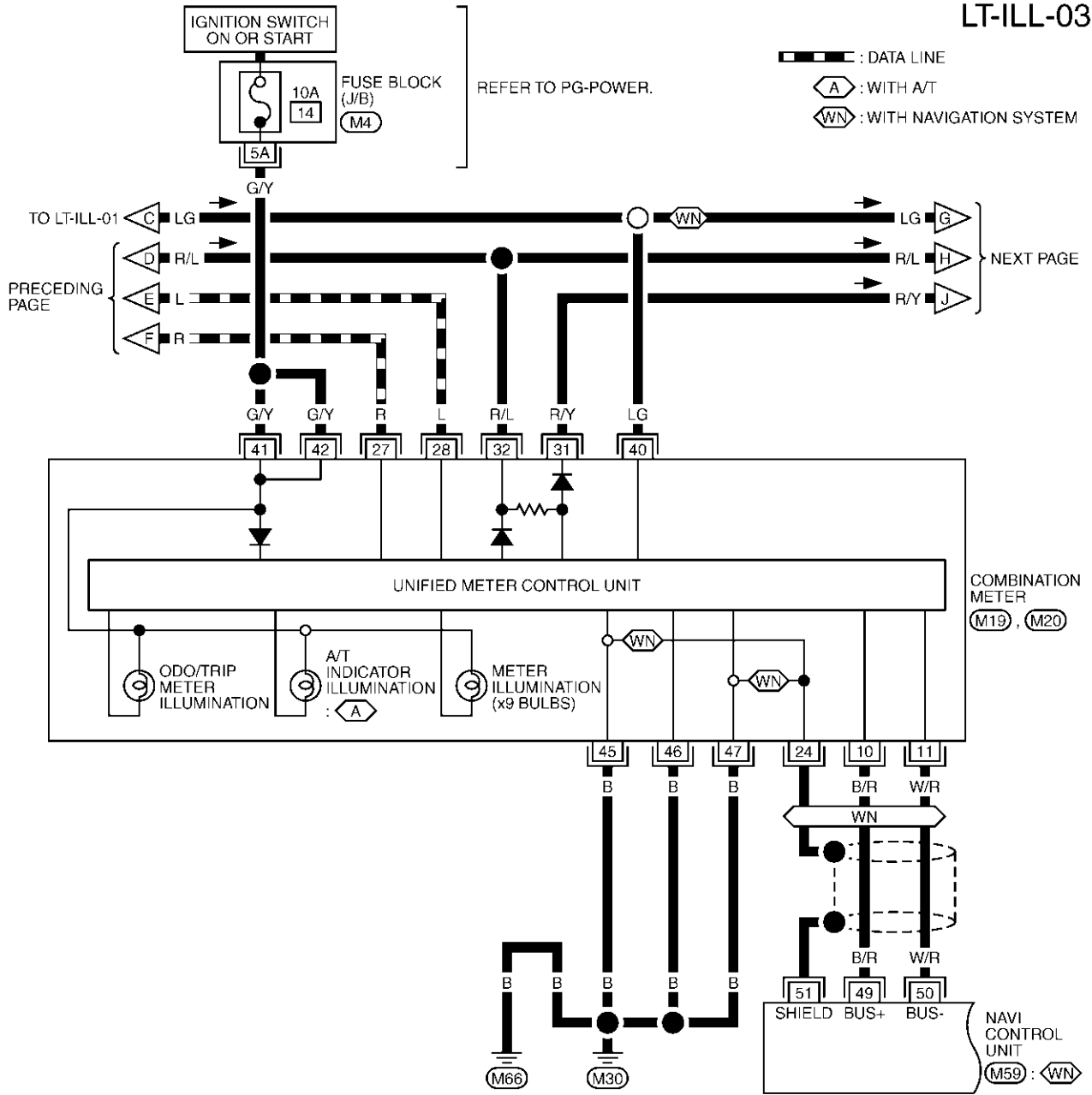
REFER TO THE FOLLOWING.

E108 -SUPER MULTIPLE JUNCTION (SMJ)

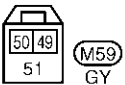


ILLUMINATION

LT-ILL-03



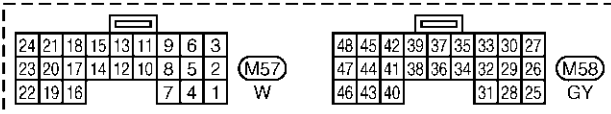
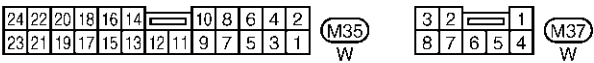
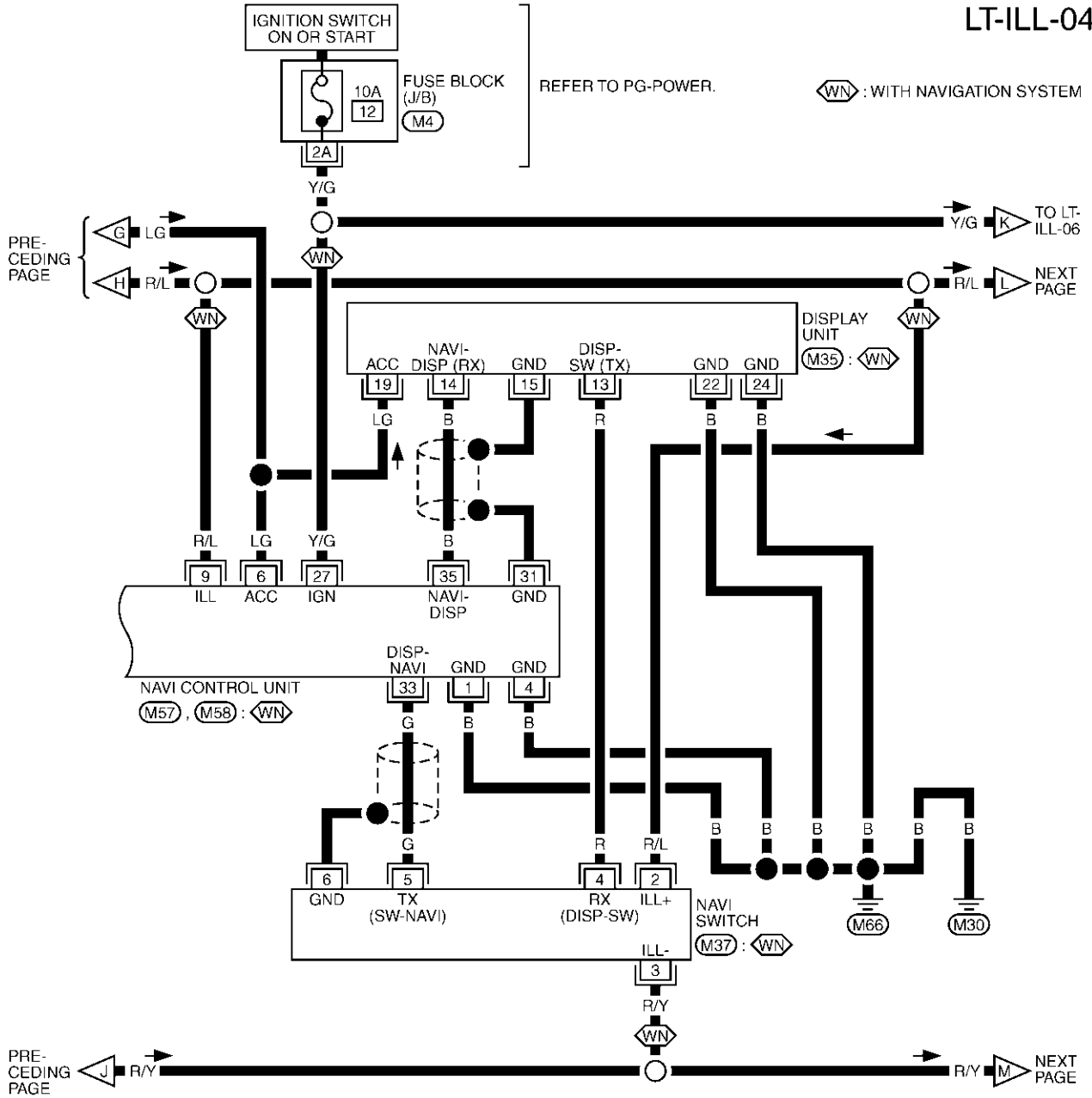
REFER TO THE FOLLOWING.
 (M4) - FUSE BLOCK-JUNCTION BOX (J/B)



TKWT0934E

ILLUMINATION

LT-ILL-04




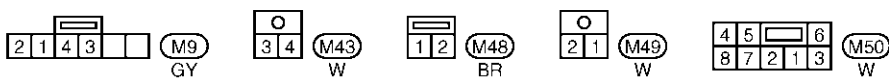
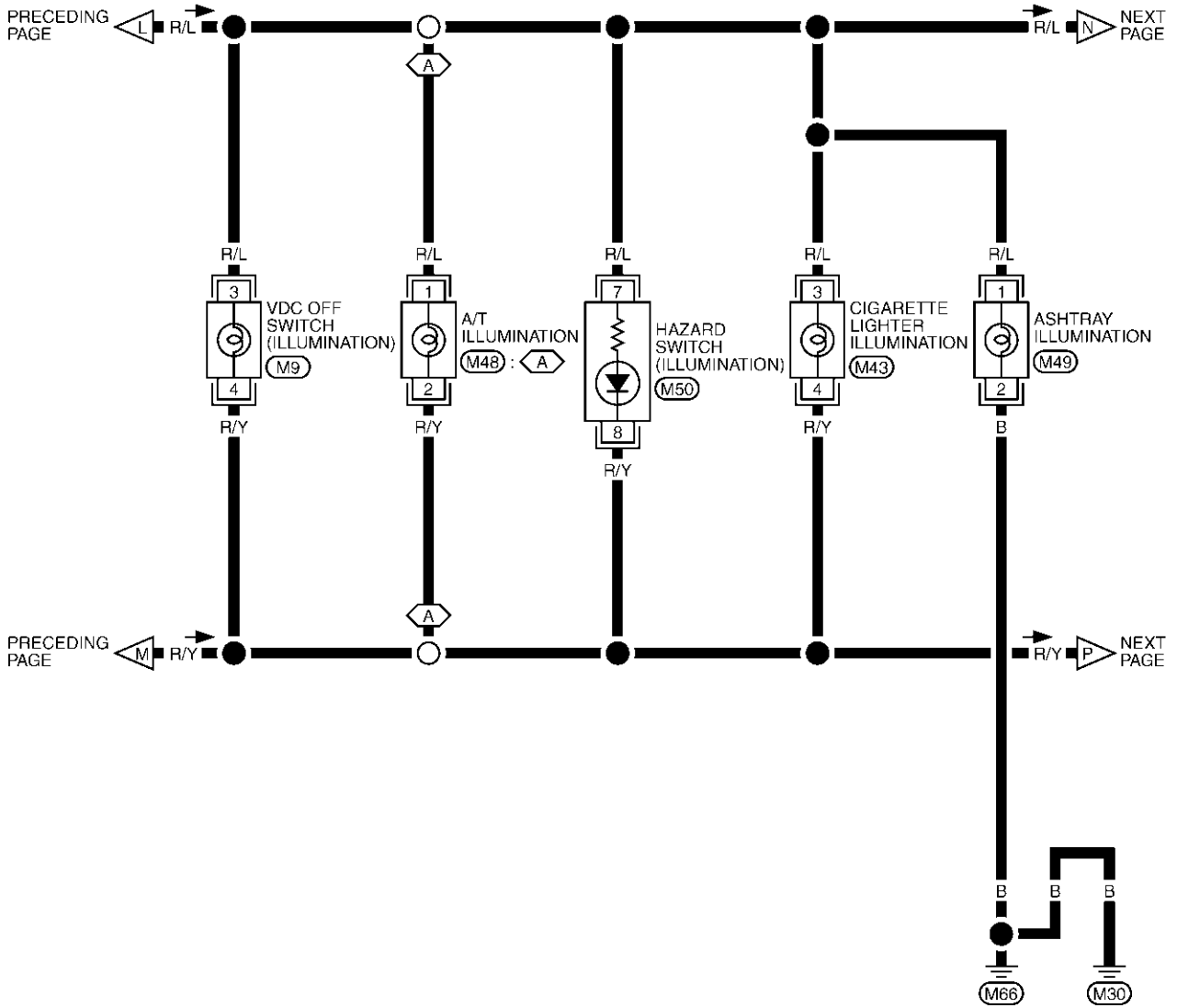
REFER TO THE FOLLOWING.
 ⓂM4 - FUSE BLOCK-JUNCTION BOX (J/B)

TKWT0708E

ILLUMINATION

LT-ILL-05

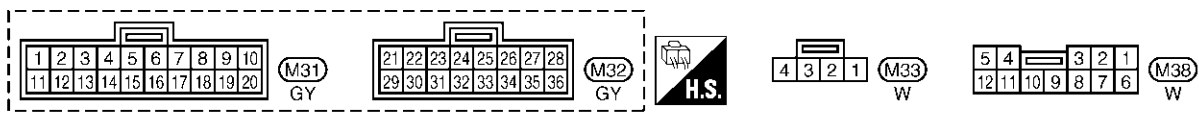
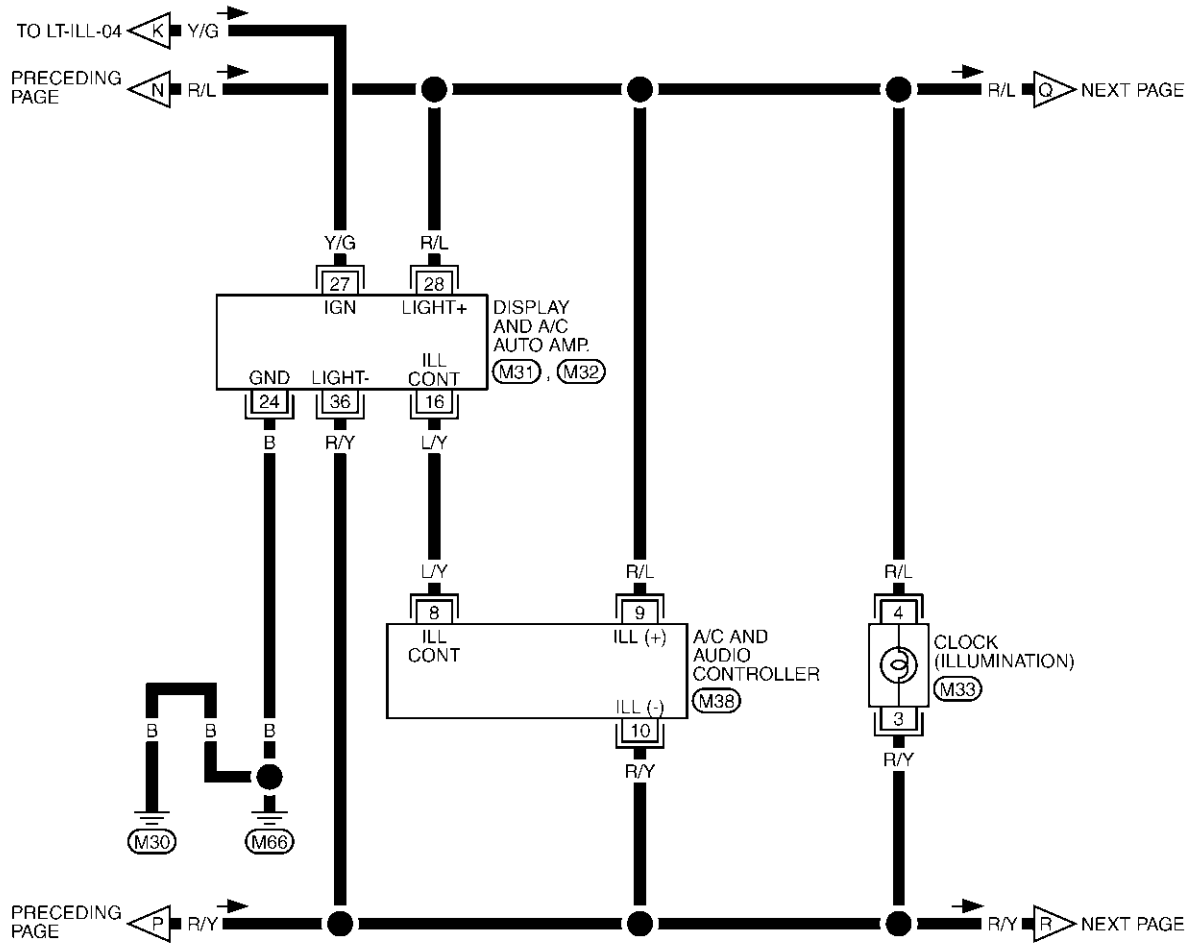
 : WITH A/T



TKWT0935E

ILLUMINATION

LT-ILL-06



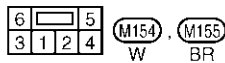
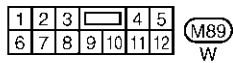
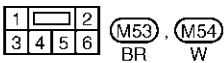
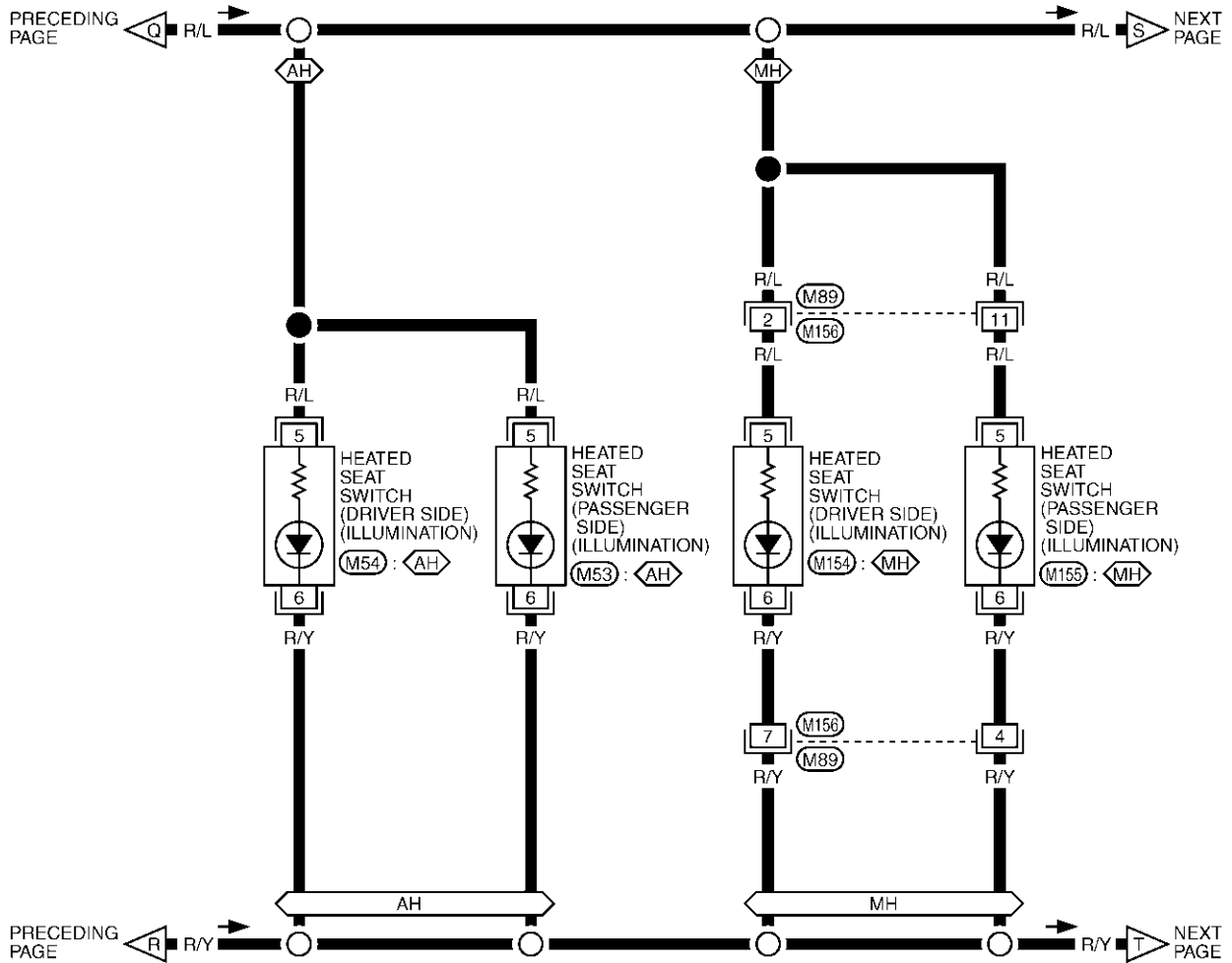
TKWT0936E

ILLUMINATION

LT-ILL-07

⬡AH⬢ : WITH A/T WITH HEATED SEAT

⬡MH⬢ : WITH M/T WITH HEATED SEAT

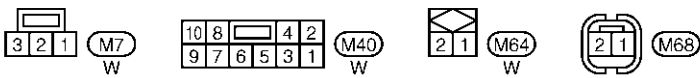
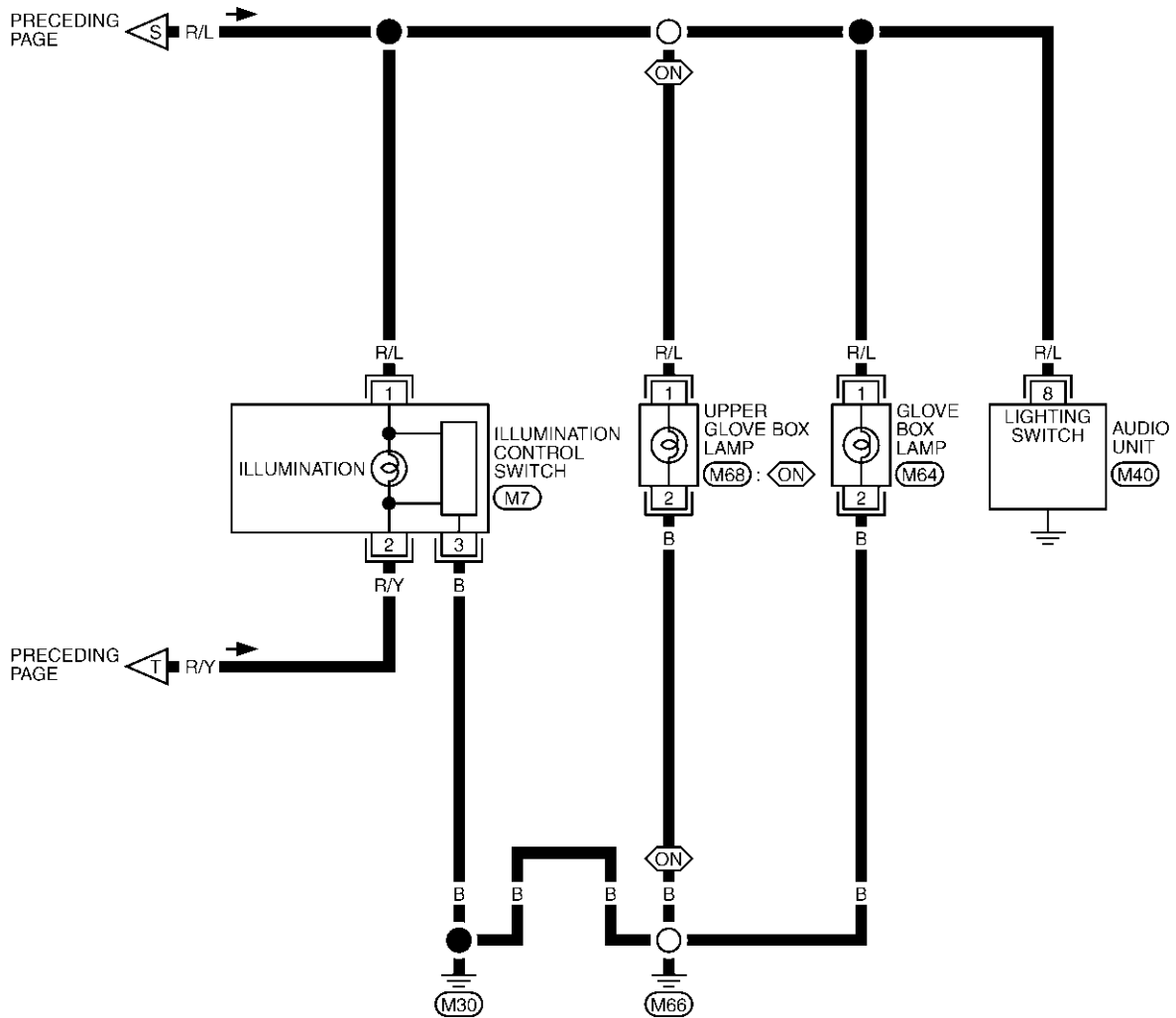


TKWT0937E

ILLUMINATION

LT-ILL-08

⊡ : WITHOUT NAVIGATION SYSTEM



TKWT0938E

ILLUMINATION

Removal and Installation GLOVE BOX LAMP

AKS005S4

Refer to [LT-163, "Removal and Installation"](#) in "GLOVE BOX LAMP".

A

B

C

D

E

F

G

H

I

J

LT

L

M

BULB SPECIFICATIONS

BULB SPECIFICATIONS

PFP:26297

Headlamp

AKS000MP

Item	Wattage (W)
Low (Halogen)	55 (H1)
Low (Xenon)	35 (D2R)
High/FOG	60/55 (HB2)

Exterior Lamp

AKS000MQ

Item	Wattage (W)	
Front combination lamp	Turn signal lamp	21 (amber)
	Parking lamp	5
Rear combination lamp	Stop/Tail lamp	LED
	Turn signal lamp	21
	Back-up lamp	18
	Rear side marker lamp	LED
Front side marker lamp	3.8	
License plate lamp	5	
High-mounted stop lamp (parcel shelf mount)	LED	
High-mounted stop lamp (rear air spoiler mount)	LED	

Interior Lamp/Illumination

AKS000MR

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
Personal lamp	8
Step lamp	5
Trunk room lamp	3.4
Vanity mirror lamp	1.32