SECTION LT
LIGHTING SYSTEM

CONTENTS

SERVICE INFORMATION

PRECAUTIONS

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

INFOID:0000000004277616

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

INFOID:0000000004277617

- Never work with wet hands.
- Turn the lighting switch OFF before disconnecting and connecting the connector.
- 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.
- 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.
- Do not use organic solvent (paint thinner or gasoline) to clean lamps and to remove old sealant.

HEADLAMP (FOR USA)

Component Parts and Harness Connector Location

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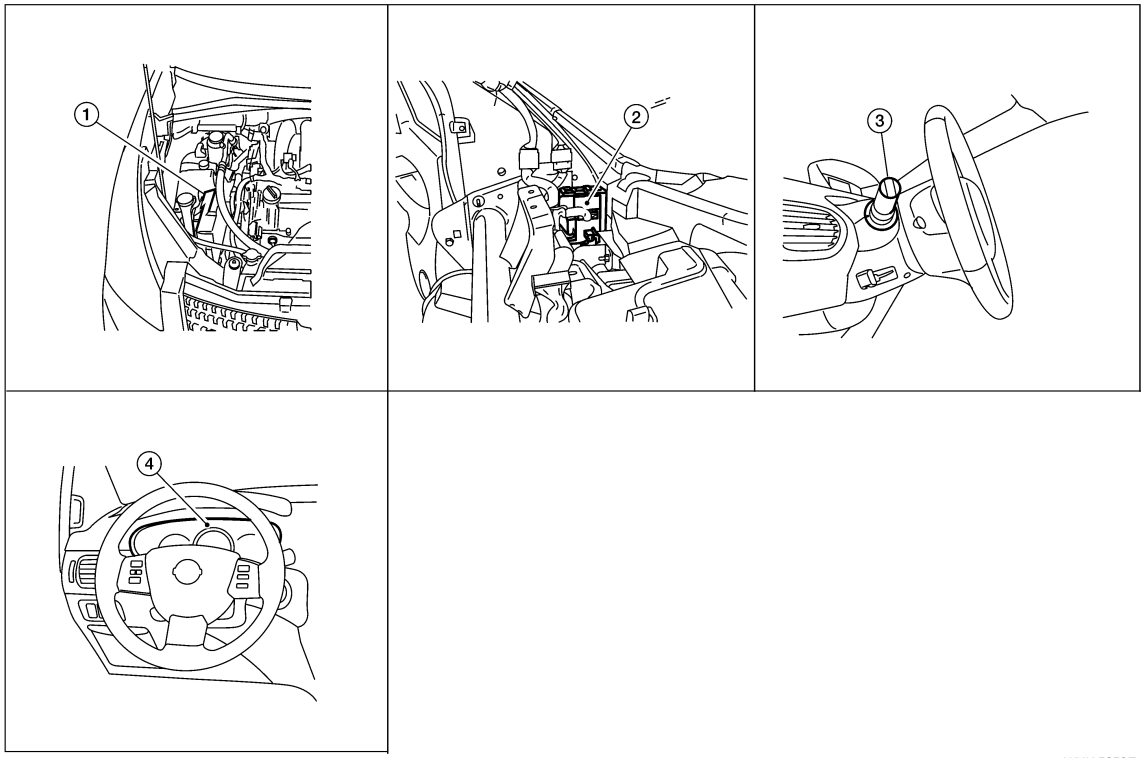

WKIA5259E

1. IPDM E/R
2. BCM M18, M20 (view with instrument panel removed)
3. Combination switch (lighting switch) M28
4. Combination meter M24

System Description

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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 (body control module) receives input requesting the headlamps (and tail lamps) illuminate. This input 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. When energized, these relays direct power to the respective headlamps, which then illuminate.

OUTLINE

Power is supplied at all times
- to ignition relay, located in the IPDM E/R, and
- to headlamp high relay, located in the IPDM E/R, and
- to headlamp low relay, located in the IPDM E/R, and
- through 50A fusible link (letter **j**, located in the fuse and fusible link box)
- to BCM terminal 70, and
- through 15A fuse (No. 34, located in the IPDM E/R)
- to IPDM E/R CPU, and
- through 15A fuse (No. 41, located in the IPDM E/R)
- to IPDM E/R CPU, and
- through 15A fuse [No. 3, located in the fuse block (J/B)]
- to BCM terminal 57, and
- through 15A fuse [No. 19, located in the fuse block (J/B)]
- to combination meter terminal 40.

With the ignition switch in the ON or START position, power is supplied
- to ignition relay, located in the IPDM E/R, and

• through 10A fuse [No. 16, located in the fuse block (J/B)]
• to BCM terminal 38, and
• through 10A fuse [No. 14, located in the fuse block (J/B)]
• to combination meter terminal 38.

With the ignition switch in the ACC or ON position, power is supplied
• through 10A fuse [No. 4, located in the fuse block (J/B)]
• to BCM terminal 11.

Ground is supplied
• to BCM terminal 67
• to combination meter terminal 20
• through grounds M57, M61 and M79, and
• to IPDM E/R terminals 38 and 60
• through grounds E9, E15 and E24.

Low Beam Operation

With the lighting switch in 2ND position, the BCM receives input requesting the headlamps to illuminate. This input is communicated to the IPDM E/R across the CAN communication lines. The CPU of the IPDM E/R controls the headlamp low relay coil. When energized, this relay directs power
• through 15A fuse (No. 36, located in the IPDM E/R)
• through IPDM E/R terminal 20
• to front combination lamp RH terminal 1, and
• through 15A fuse (No. 45, located in the IPDM E/R)
• through IPDM E/R terminal 30
• to front combination lamp LH terminal 1.

Ground is supplied
• to front combination lamp LH and RH terminal 2
• through grounds E9, E15 and E24.

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 requesting the headlamp high beams to illuminate. This input is communicated to the IPDM E/R and combination meter across the CAN communication lines. The CPU of the combination meter controls the ON/OFF status of the HIGH BEAM indicator. The CPU of the IPDM E/R controls the headlamp high relay coil. When energized, this relay directs power
• through 10A fuse (No. 40, located in the IPDM E/R)
• through IPDM E/R terminal 27
• to front combination lamp RH terminal 3, and
• through 10A fuse (No. 38, located in the IPDM E/R)
• through IPDM E/R terminal 28
• to front combination lamp LH terminal 3.

Ground is supplied
• to front combination lamp LH and RH terminal 4
• through grounds E9, E15 and E24.

With power and ground supplied, the high beam headlamps illuminate.

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 feature is activated.
Under this condition, the headlamps remain illuminated for 5 minutes, unless the combination switch (lighting switch) position is changed. If the combination switch (lighting switch) position is changed, then the headlamps are turned off.

AUTO LIGHT OPERATION (IF EQUIPPED)

Refer to LT-35, "System Description" for auto light operation.

VEHICLE SECURITY SYSTEM (PANIC ALARM)

The vehicle security system (panic alarm) will flash the high beams if the system is triggered. Refer to BL-48, "System Description".

CAN Communication System Description

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Refer to LAN-3, "CAN Communication System".

Schematic

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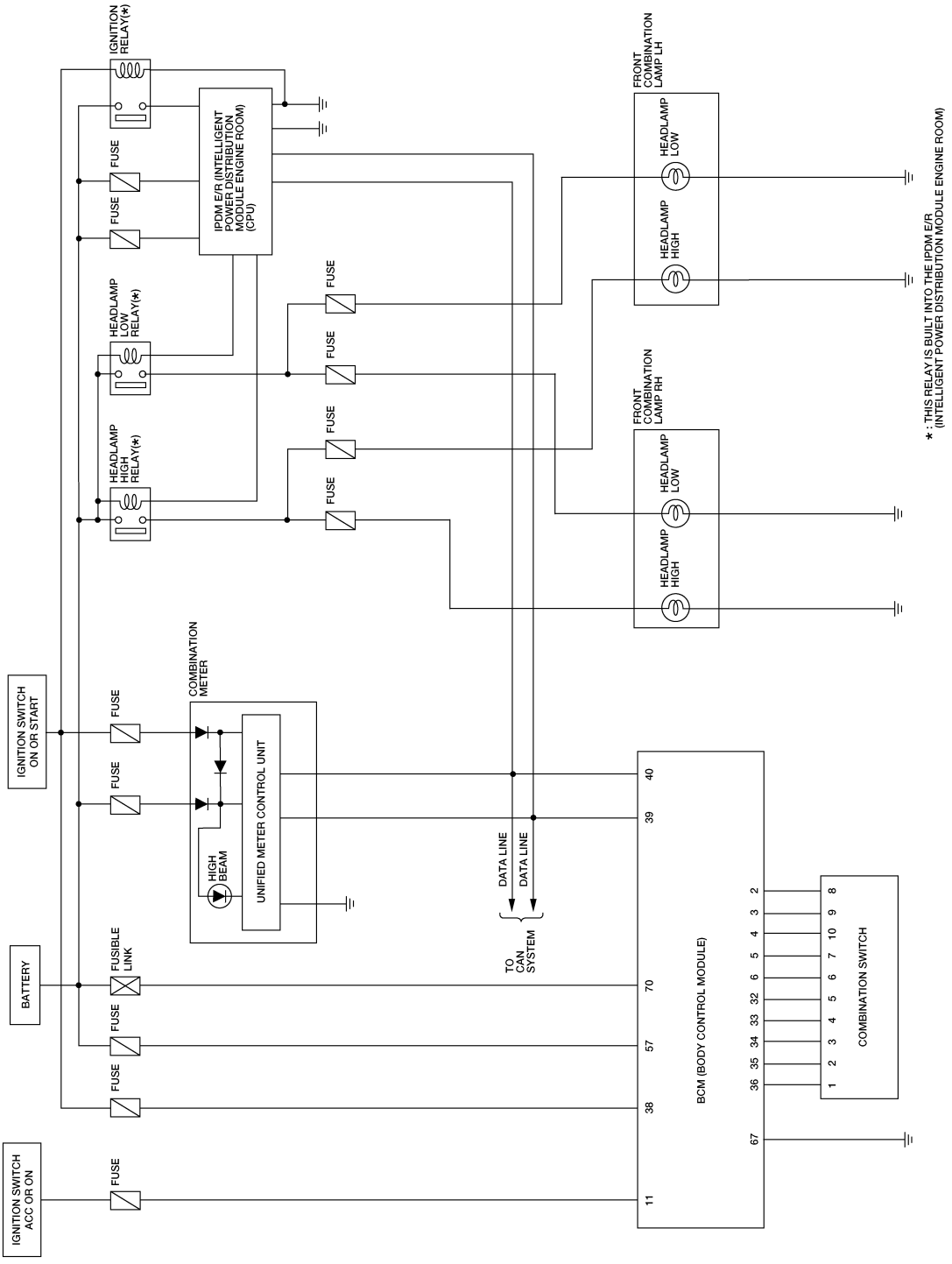

Wiring Diagram - H/LAMP -

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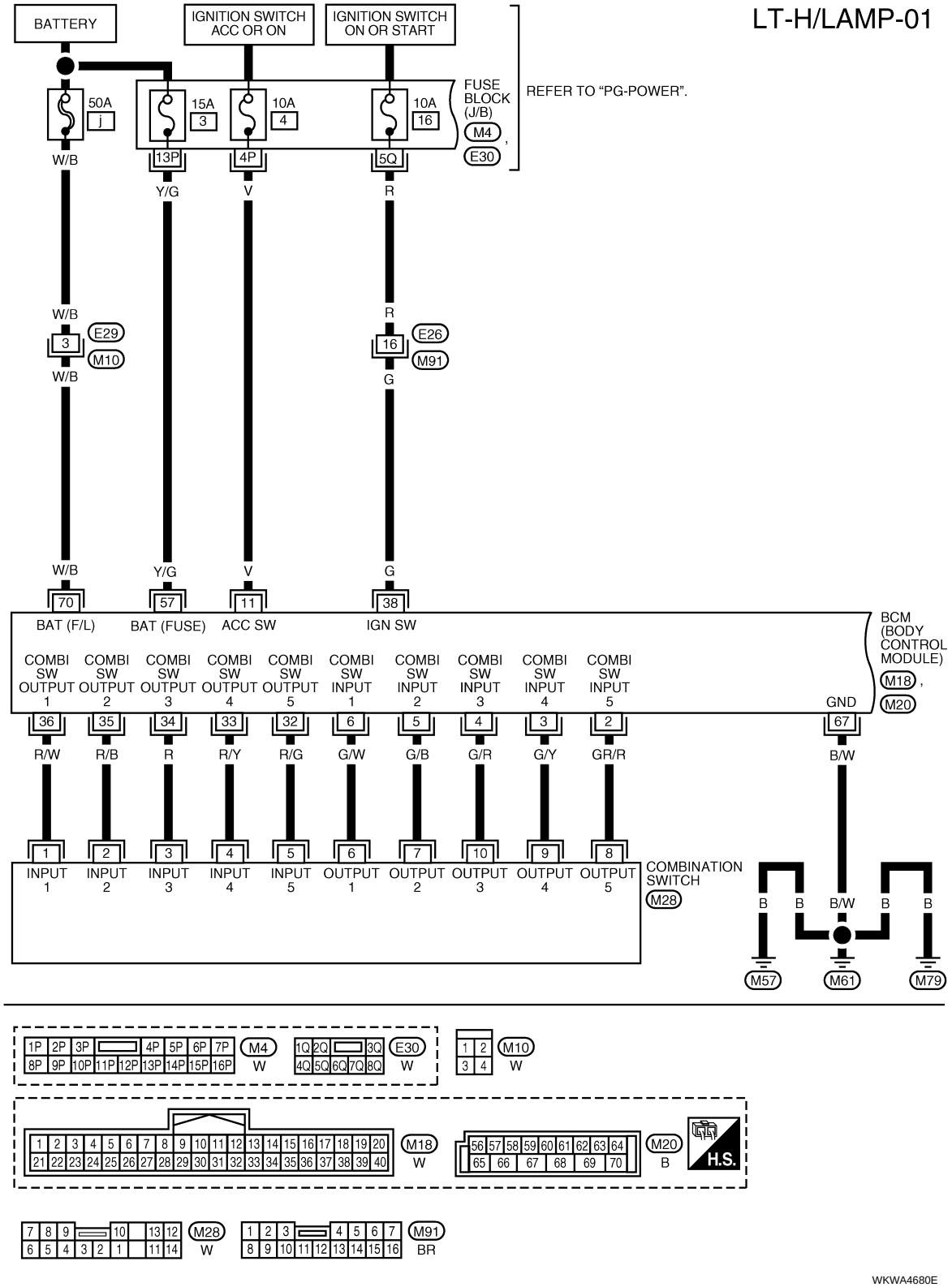
LT-H/LAMP-01



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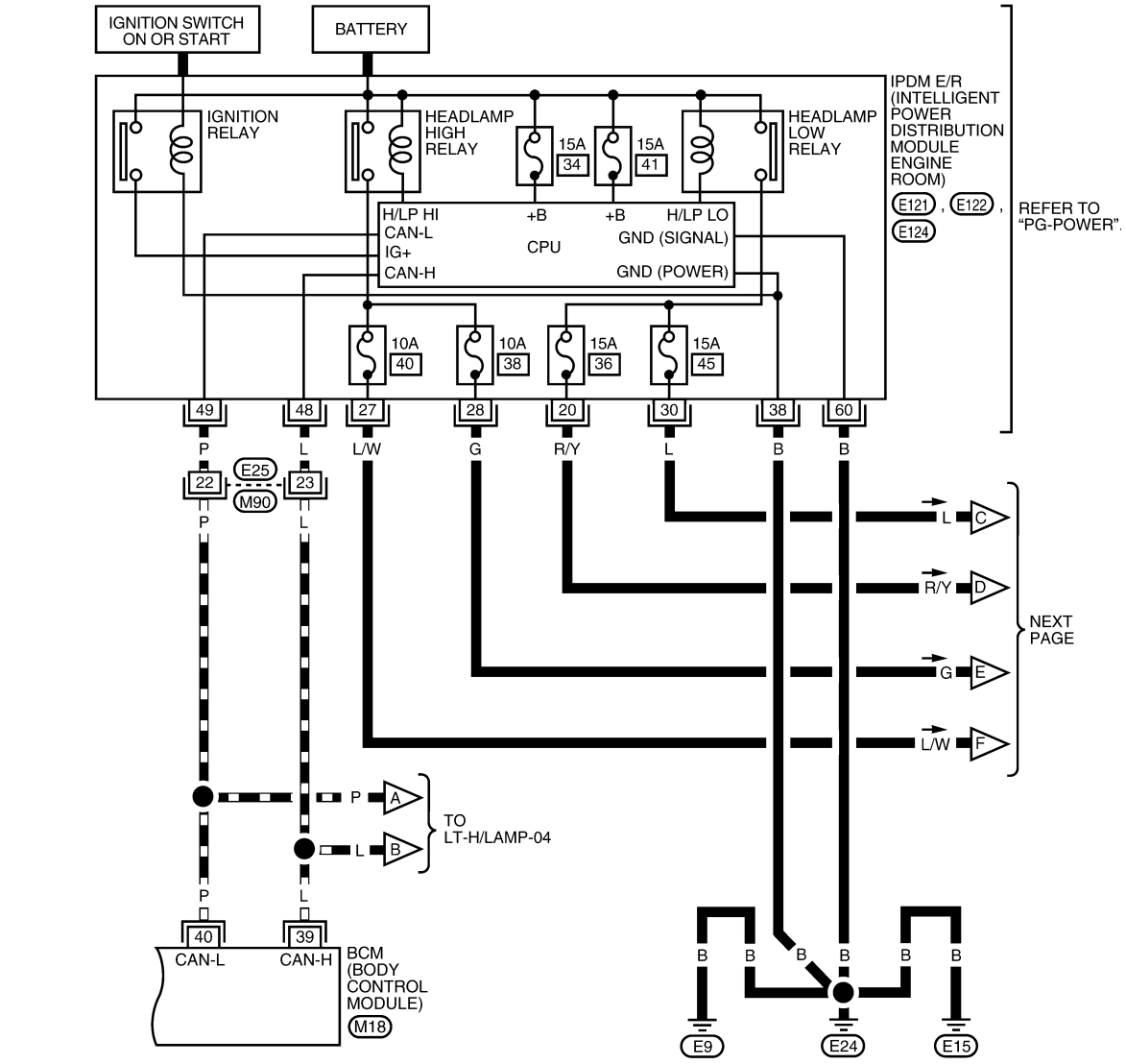
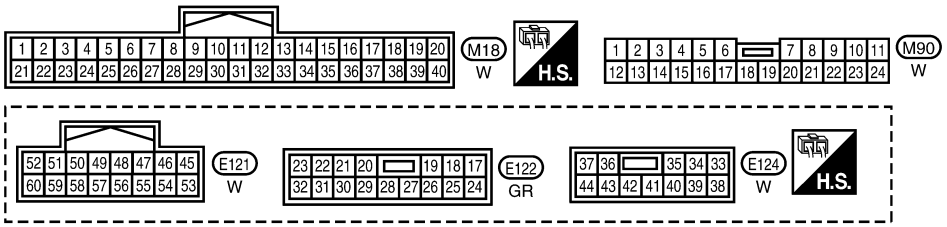
LT-H/LAMP-02

: DATA LINE





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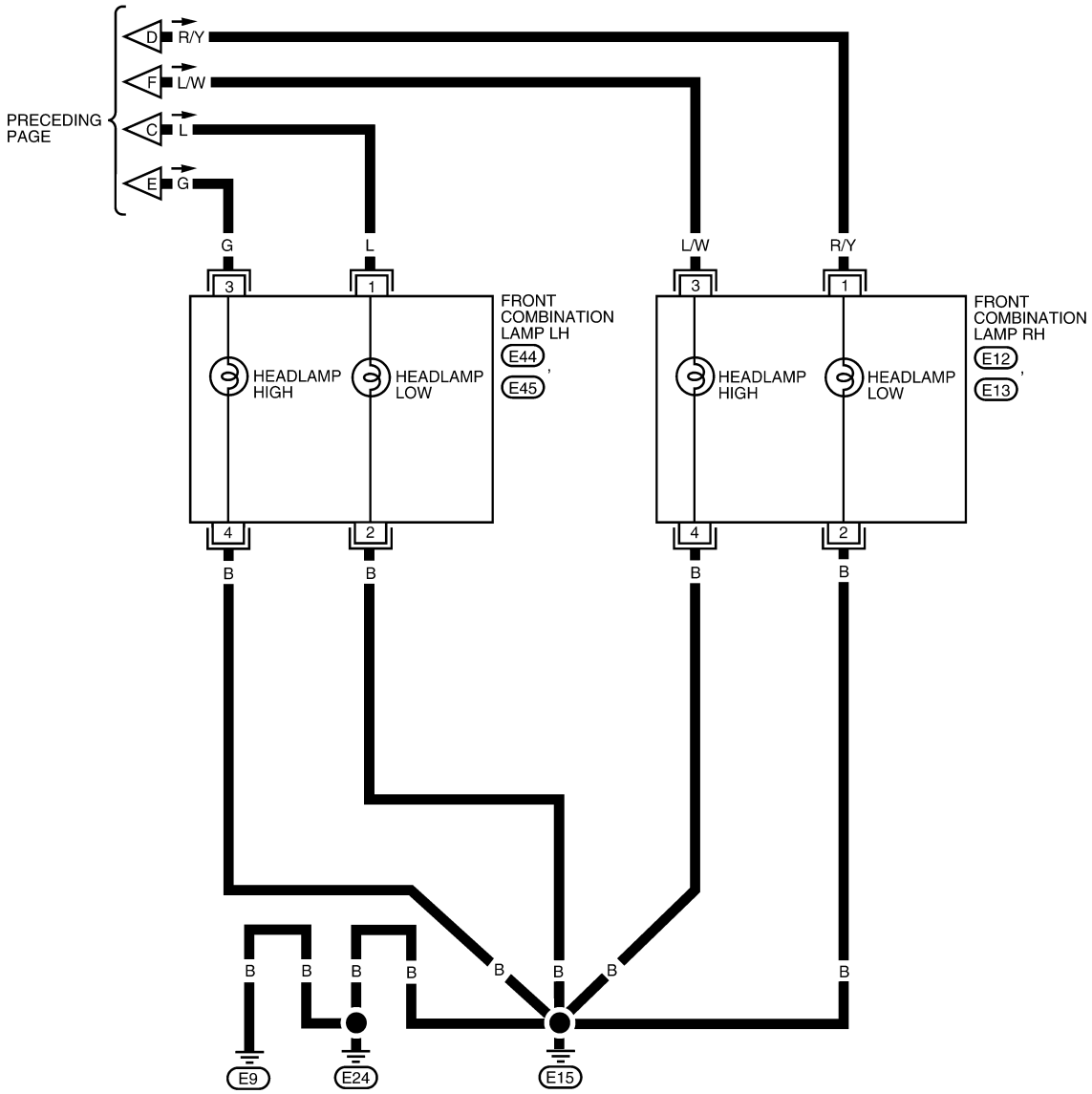
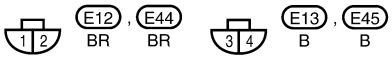
LT-H/LAMP-03





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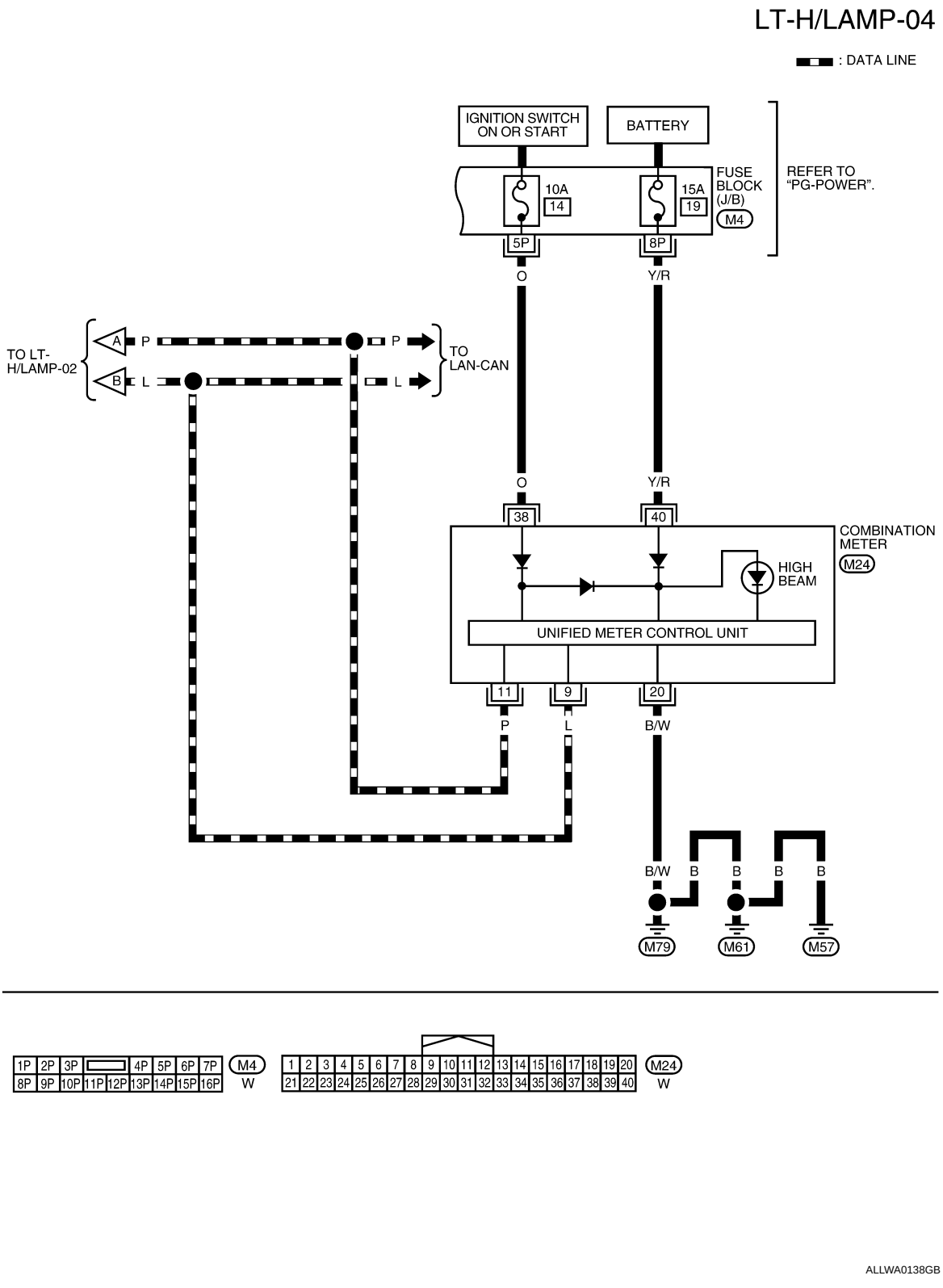

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Terminal and Reference Value for BCM

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Refer to BCS-11, "Terminal and Reference Value for BCM".

Terminal and Reference Value for IPDM E/R

INFOID:0000000004277624

Refer to PG-24, "Terminal and Reference Value for IPDM E/R".

How to Proceed with Trouble Diagnosis

INFOID:0000000004277625

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-5, "System Description".
3. Perform the Preliminary Check. Refer to LT-12, "Preliminary Check".
4. Check symptom and repair or replace the cause of malfunction.
5. Does the headlamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

Preliminary Check

INFOID:0000000004277626

CHECK POWER SUPPLY AND GROUND CIRCUIT

Refer to BCS-15, "BCM Power Supply and Ground Circuit Inspection".
Refer to PG-27, "IPDM E/R Power/Ground Circuit Inspection".

CONSULT-III Function (BCM)

INFOID:0000000004277627

CONSULT-III can display each diagnostic item using the diagnostic test modes shown following.

BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.
	DATA MONITOR	Displays BCM input/output data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
	SELF-DIAG RESULTS	Displays BCM self-diagnosis results.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
	ECU PART NUMBER	BCM part number can be read.
	CONFIGURATION	Performs BCM configuration read/write functions.

WORK SUPPORT

Operation Procedure

1. Touch "HEAD LAMP" on "SELECT TEST ITEM" screen.
2. Touch "WORK SUPPORT" on "SELECT DIAG MODE" screen.
3. Touch item 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-III	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 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 "SELECT MONITOR ITEM" screen.

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

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

Display Item List

Monitor item		Contents
IGN ON SW	"ON/OFF"	Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from the ignition switch signal.
ACC ON SW	"ON/OFF"	Displays "ACC (ON)/OFF, Ignition OFF (OFF)" status judged from ignition switch signal.
HI BEAM SW	"ON/OFF"	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
HEAD LAMP SW 1	"ON/OFF"	Displays status (headlamp switch 1: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
HEAD LAMP SW 2	"ON/OFF"	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
LIGHT SW 1ST	"ON/OFF"	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting 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)
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 lamp switch: ON/Others: OFF) of front fog lamp switch judged from lighting switch signal.
DOOR SW-DR	"ON/OFF"	Displays status of the front door LH as judged from the front door switch LH signal. (Door is open: ON/Door is closed: OFF)
DOOR SW-AS	"ON/OFF"	Displays status of the front door RH as judged from the front door switch RH signal. (Door is open: ON/Door is closed: OFF)
DOOR SW-RR	"ON/OFF"	Displays status of the rear door as judged from the rear door switch (RH) signal. (Door is open: ON/Door is closed: OFF)
DOOR SW-RL	"ON/OFF"	Displays status of the rear door as judged from the rear door switch (LH) signal. (Door is open: ON/Door is closed: OFF)
BACK DOOR SW	"ON/OFF"	Displays status of the back door as judged from the back door switch signal. (Door is open: ON/Door is closed: OFF)
TURN SIGNAL R	"ON/OFF"	Displays status (Turn right: ON/Others: OFF) as judged from lighting switch signal.
TURN SIGNAL L	"ON/OFF"	Displays status (Turn left: ON/Others: OFF) as judged from lighting switch signal.
CARGO LAMP SW	"ON/OFF"	Displays status of cargo lamp switch.
OPTICAL SENSOR	[0 - 5V]	Displays "ambient light (close to 5V when dark/close to 0V when light)" judged from optical sensor signal.

ACTIVE TEST

Operation Procedure

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

Display Item List

Test item	Description
TAIL LAMP	Allows tail lamp relay to operate by switching ON-OFF.
HEAD LAMP	Allows headlamp relay (HI, LO) to operate by switching ON-OFF.
FR FOG LAMP	Allows fog lamp relay to operate by switching ON-OFF.
CARGO LAMP	Allows cargo lamp to operate by switching ON-OFF.
CORNERING LAMP	Allows cornering lamp relay (RH, LH) to operate by switching ON-OFF.

SELF-DIAGNOSTIC RESULTS

Operation Procedure

1. Touch “BCM” on “SELECT TEST ITEM” screen.
2. Touch “SELF-DIAG RESULTS” on “SELECT DIAG MODE” screen.
3. Self-diagnostic results are displayed.

Display Item List

Monitored item	CONSULT-III display	Description
CAN communication	CAN communication [U1000]	Malfunction is detected in CAN communication.
CAN communication system	CAN communication system 1 to 6 [U1000]	Malfunction is detected in CAN system.

CONSULT-III Function (IPDM E/R)

INFOID:0000000004277628

CONSULT-III can display each diagnostic item using the diagnostic test modes shown following.

IPDM E/R diagnostic Mode	Description
SELF-DIAG RESULTS	Displays IPDM E/R self-diagnosis results.
DATA MONITOR	Displays IPDM E/R input/output data in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.

DATA MONITOR

Operation Procedure

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

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

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

All Signals, Main Signals, Selection From Menu

Item name	CONSULT–III screen display	Display or unit	Monitor item selection			Description
			ALL SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	
Parking, license plate and tail lamps request	TAIL&CLR REQ	ON/OFF	×	×	×	Signal status input from BCM
Headlamp low beam request	HL LO REQ	ON/OFF	×	×	×	Signal status input from BCM
Headlamp high beam request	HL HI REQ	ON/OFF	×	×	×	Signal status input from BCM
Cornering lamp	CRNRNG LMP REQ	ON/OFF	×	–	×	Signal status input from BCM
Front fog lamps request	FR FOG REQ	ON/OFF	×	×	×	Signal status input from BCM

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

ACTIVE TEST

Operation Procedure

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

Test item	CONSULT–III screen display	Description
Tail lamp relay output	TAIL LAMP	Allows tail lamp relay to operate by switching operation ON-OFF at your option.
Headlamp relay (HI, LO) output	LAMPS	Allows headlamp relay (HI, LO) to operate by switching operation (OFF, HI, LO) at your option (Head lamp high beam repeats ON-OFF every 1 second).
Front fog lamp relay (FOG) output		Allows fog lamp relay (FOG) to operate by switching operation ON-OFF at your option.
Cornering lamp relay (RH, LH) output	CORNERING LAMP	Allows cornering lamp relay (RH, LH) to operate by switching operation ON-OFF at your option.

Headlamp HI Does Not Illuminate (Both Sides)

INFOID:0000000004277629

1.CHECK COMBINATION SWITCH INPUT SIGNAL

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

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

OK or NG

OK >> GO TO 2.
NG >> Check lighting switch. Refer to LT-81, "Combination Switch Inspection".

2.HEADLAMP ACTIVE TEST

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

Headlamp high beam should operate.

OK or NG

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

3. CHECK IPDM E/R

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

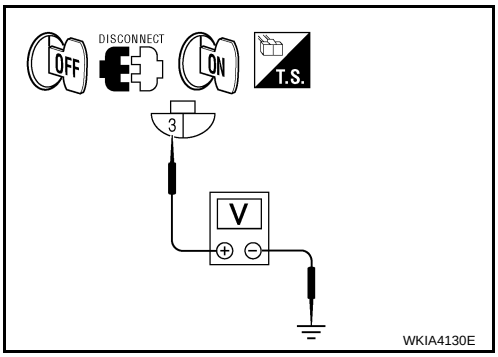
When lighting switch is in	**: HL LO REQ ON**
HIGH position	**: HL HI REQ ON**

OK or NG

OK >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".
NG >> Replace BCM. Refer to BCS-17, "Removal and Installation of BCM".

4. CHECK HEADLAMP INPUT SIGNAL

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



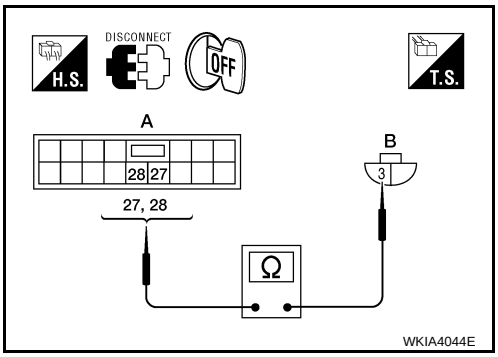
Terminals			(–)	Voltage
(+)				
Front combination lamp connector		Terminal		
RH	E13	3	Ground	Battery voltage
LH	E45			

OK or NG

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

5. CHECK HEADLAMP CIRCUIT

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



A		B		Continuity
IPDM E/R connector	Terminal	Front combination lamp connector	Terminal	
E122	27	RH E13	3	Yes
	28	LH E45		

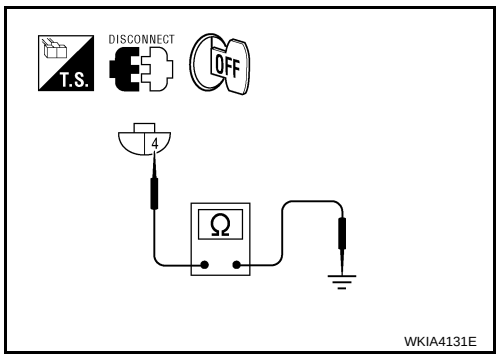
OK or NG

OK >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".
NG >> Repair harness or connector.

6. CHECK HEADLAMP GROUND

1. Turn ignition switch OFF.

2. Check continuity between front combination lamp RH and LH harness connector terminals and ground.



Terminals				Continuity
Front combination lamp connector		Terminal		
RH	E13	4	Ground	Yes
LH	E45			

OK or NG

OK >> Check front combination lamp connector for damage or poor connection. Repair as necessary.
NG >> Repair harness or connector.

Headlamp HI Does Not Illuminate (One Side)

INFOID:0000000004277630

1.BULB INSPECTION

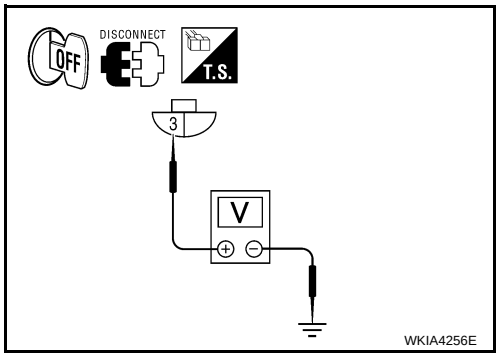
Inspect inoperative headlamp bulb.

OK or NG

OK >> GO TO 2.
NG >> Replace headlamp bulb. Refer to LT-22, "Bulb Replacement".

2.CHECK POWER TO HEADLAMP

1. Disconnect inoperative front combination lamp connector.
2. Turn the high beam headlamps ON.
3. Check voltage between inoperative front combination lamp harness connector terminal and ground.



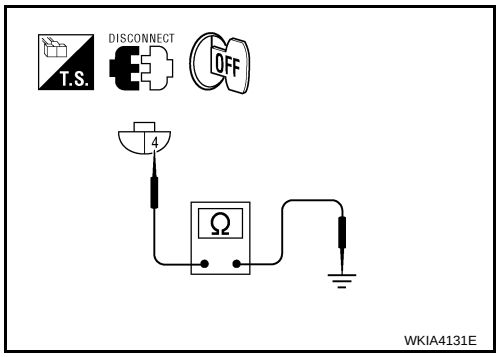
Terminals			(–)	Voltage (Approx.)
(+)				
Front combination lamp connector		Terminal		
RH	E13	3	Ground	Battery voltage
LH	E45			

OK or NG

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

3.CHECK HEADLAMP GROUND

1. Turn the high beam headlamps OFF.
2. Check continuity between inoperative front combination lamp harness connector terminal and ground.



Terminals				Continuity
Front combination lamp connector		Terminal		
RH	E13	4	Ground	Yes
LH	E45			

OK or NG

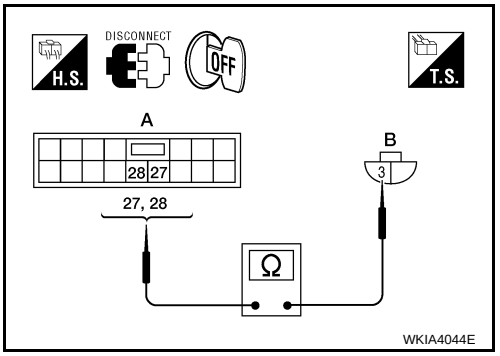
OK >> Check front combination lamp connector for damage or poor connection. Repair as necessary.
NG >> Repair open circuit in harness between inoperative headlamp and ground.

4.INSPECTION BETWEEN IPDM E/R AND HEADLAMPS

1. Disconnect IPDM E/R connector.

2. Check continuity between IPDM E/R harness connector terminal and inoperative front combination lamp harness connector terminal.

A		B			Continuity
IPDM E/R connector	Terminal	Front combination lamp connector		Terminal	
E122	27	RH	E13	3	Yes
	28	LH	E45		



OK or NG

OK >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".
NG >> Check for short circuits and open circuits in harness between IPDM E/R and headlamps. Repair as necessary.

High-Beam Indicator Lamp Does Not Illuminate

INFOID:0000000004277631

1.CAN COMMUNICATION SYSTEM INSPECTION

Inspect CAN communication system. Refer to LAN-39.

OK or NG

OK >> Replace combination meter. Refer to DI-22, "Combination Meter".
NG >> Repair as necessary.

Headlamp LO Does Not Illuminate (Both Sides)

INFOID:0000000004277632

1.CHECK COMBINATION SWITCH INPUT SIGNAL

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

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

OK or NG

OK >> GO TO 2.
NG >> Check lighting switch. Refer to LT-81, "Combination Switch Inspection".

2.HEADLAMP ACTIVE TEST

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

Headlamp low beam should operate.

OK or NG

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

3.CHECK IPDM E/R

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

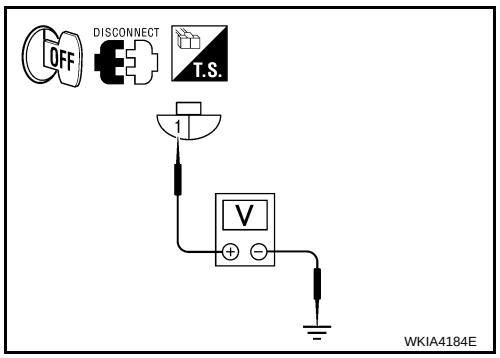
When lighting switch is in 2ND position : HL LO REQ ON

OK or NG

OK >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".
NG >> Replace BCM. Refer to BCS-17, "Removal and Installation of BCM".

4. CHECK HEADLAMP INPUT SIGNAL

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



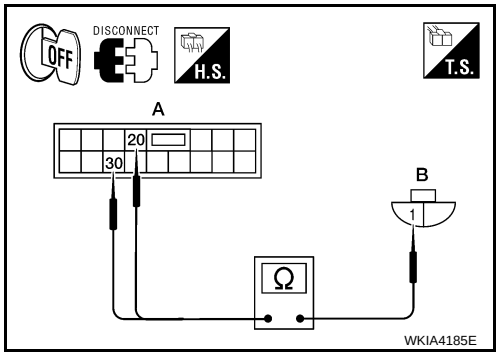
Terminals			(–)	Voltage
(+)				
Front combination lamp connector		Terminal		
RH	E12	1	Ground	Battery voltage
LH	E44			

OK or NG

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

5. CHECK HEADLAMP CIRCUIT

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



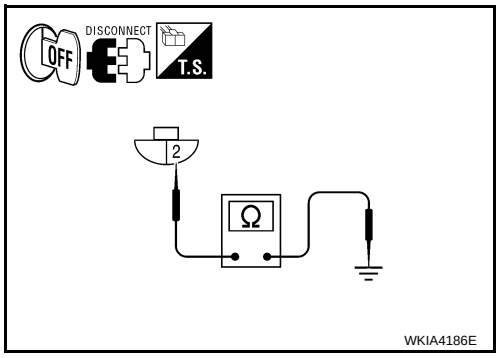
A		B		Continuity
IPDM E/R connector	Terminal	Front combination lamp connector	Terminal	
E122	20	RH E12	1	Yes
	30	LH E44		

OK or NG

OK >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".
NG >> Repair harness or connector.

6. CHECK HEADLAMP GROUND

1. Turn ignition switch OFF.
2. Check continuity between front combination lamp harness connector terminal and ground.



Terminals				Voltage
Front combination lamp connector		Terminal		
RH	E12	2	Ground	Battery voltage
LH	E44			

OK or NG

OK >> Check front combination lamp connector for damage or poor connection. Repair as necessary.
NG >> Repair harness or connector.

Headlamp LO Does Not Illuminate (One Side)

INFOID:0000000004277633

1.BULB INSPECTION

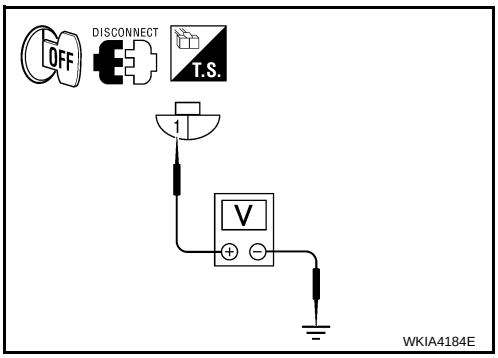
Inspect inoperative headlamp bulb.

OK or NG

OK >> GO TO 2.
NG >> Replace headlamp bulb. Refer to LT-22, "Bulb Replacement".

2.CHECK POWER TO HEADLAMP

1. Disconnect inoperative front combination lamp connector.
2. Turn the low beam headlamps ON.
3. Check voltage between inoperative front combination lamp connector terminal and ground.



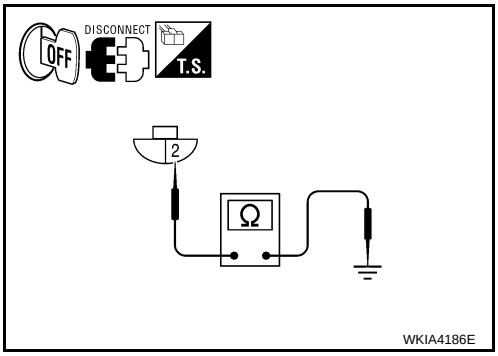
Terminals			(–)	Voltage (Approx.)
(+)				
Front combination lamp connector		Terminal		
RH	E12	1	Ground	Battery voltage
LH	E44			

OK or NG

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

3.CHECK HEADLAMP GROUND

1. Turn the low beam headlamps OFF.
2. Check continuity between inoperative front combination lamp connector terminal and ground.



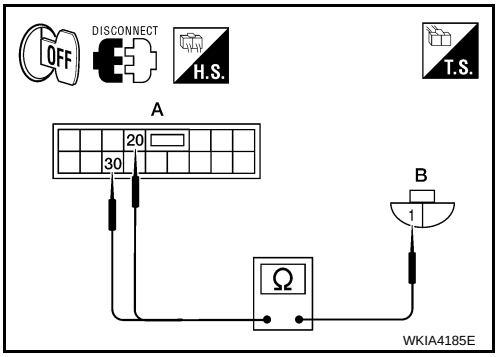
Terminals				Continuity
Front combination lamp connector		Terminal		
RH	E12	2	Ground	Yes
LH	E44			

OK or NG

OK >> Check headlamp and IPDM E/R connector. Repair as necessary.
NG >> Repair open circuit in harness between inoperative headlamp and ground.

4.INSPECTION BETWEEN IPDM E/R AND HEADLAMPS

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



A		B		Continuity
IPDM E/R connector	Terminal	Front combination lamp connector	Terminal	
E122	20	RH E12	1	Yes
	30	LH E44		

OK or NG

OK >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".

NG >> Check for short circuits and open circuits in harness between IPDM E/R and headlamps. Repair as necessary.

Headlamps Do Not Turn OFF

INFOID:0000000004277634

1. CHECK COMBINATION SWITCH INPUT SIGNAL

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

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

OK or NG

OK >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".
NG >> GO TO 2.

2. CHECK LIGHTING SWITCH

Check lighting switch. Refer to LT-81, "Combination Switch Inspection".

OK or NG

OK >> GO TO 3.
NG >> Replace lighting switch. Refer to LT-83, "Removal and Installation".

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

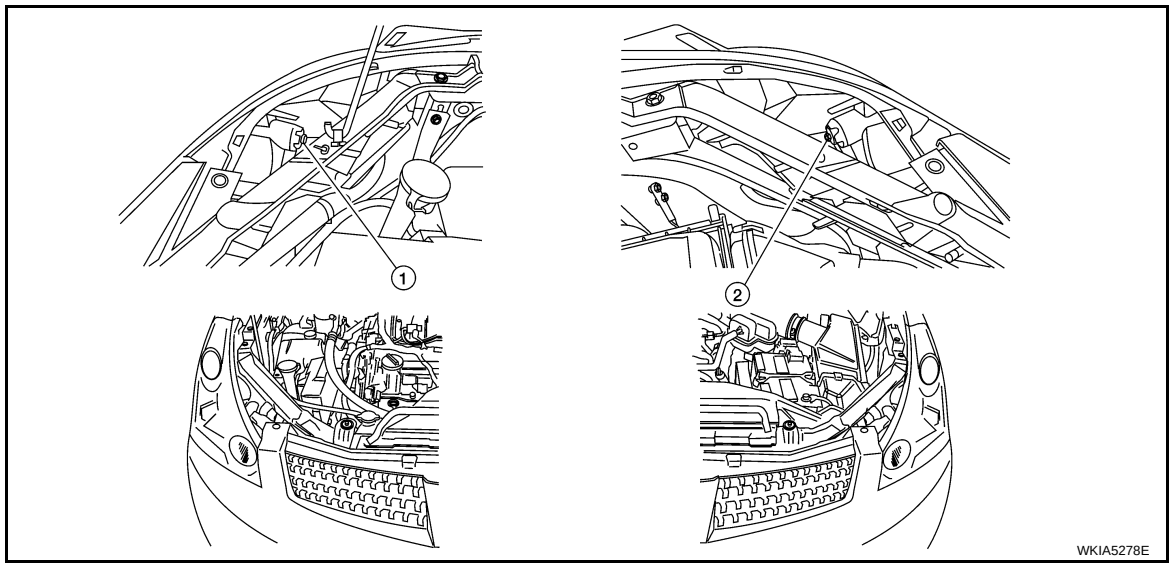
Select "BCM" on CONSULT-III and perform self-diagnosis for BCM.

Display of self-diagnosis results

NO DTC>>Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".
CAN COMM CIRCUIT>> Refer to BCS-17, "CAN Communication Inspection Using CONSULT-III (Self-Diagnosis)".

Aiming Adjustment

INFOID:0000000004277635



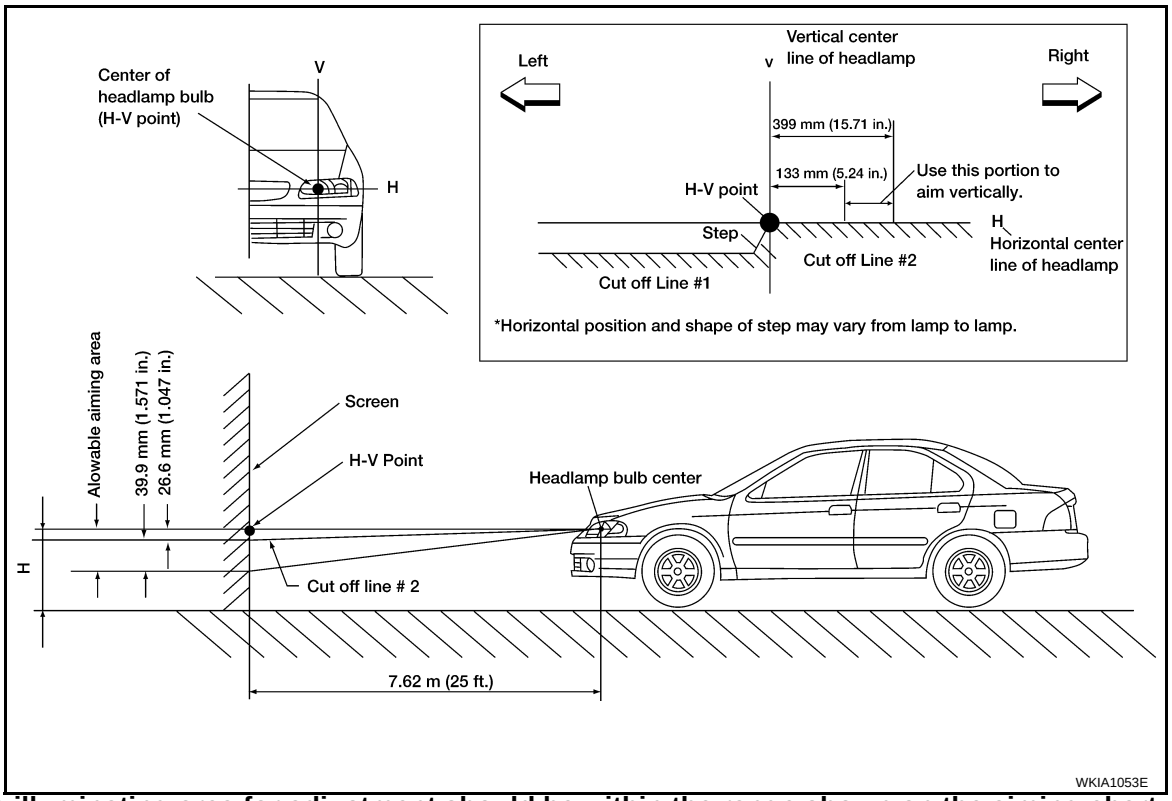
1. RH headlamp (low beam) adjustment screw 2. LH headlamp (low beam) adjustment screw

For details, refer to the regulations in your area.
NOTE:
If vehicle front body has been repaired and /or the headlamp assembly has been replaced, check headlamp aiming.

HEADLAMP AIMING

NOTE:

- Before performing aiming adjustment, check the following:
- Confirm headlamp aiming switch is set to "0" (zero) position (if equipped).
- Ensure all tires are inflated to correct pressure.
- Place vehicle and screen on level surface.
- Ensure there is no load in vehicle other than the driver (or equivalent weight placed in driver's position). Coolant and engine oil filled to correct level, and fuel tank full.
- Confirm spare tire, jack and tools are properly stowed.
- Use adjusting screw to perform aiming adjustment.



- **Basic illuminating area for adjustment should be within the range shown on the aiming chart. Adjust headlamps accordingly.**

LOW BEAM AND HIGH BEAM

NOTE:

Aim each headlamp individually and ensure other headlamp beam pattern is blocked from screen.

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

Bulb Replacement

INFOID:0000000004277636

CAUTION:

- **Do not touch bulb by hand right after being turned off. Burning may result.**
- **Do not touch the glass of bulb directly by hand. Keep grease and other oily substances away from it.**
- **Do not leave bulb out of front combination lamp assembly for a long time because dust, moisture, smoke, etc. may affect the performance of the lamp. When replacing headlamp bulb, be sure to replace it with a new one.**
- **After installing the bulb, be sure to install the bulb socket securely to ensure watertightness.**

HEADLAMP (OUTER SIDE), FOR LOW BEAM

Removal

1. Turn headlamp switch OFF.
2. Disconnect the electrical connector.
3. Turn bulb socket counterclockwise and remove bulb.

Installation
Installation is in the reverse order of removal.

HEADLAMP (INNER SIDE), FOR HIGH BEAM

Removal
1. Turn headlamp switch OFF.
2. Disconnect the electrical connector.
3. Turn bulb socket counterclockwise and remove bulb.

Installation
Installation is in the reverse order of removal.

FRONT TURN SIGNAL/PARKING LAMP

Removal
1. Turn the front turn signal/parking lamp bulb socket counterclockwise to unlock it.
2. Pull bulb to remove it from socket.

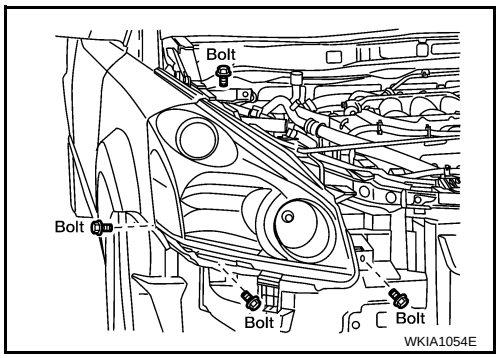
Installation
Installation is in the reverse order of removal.

Removal and Installation

INFOID:0000000004277637

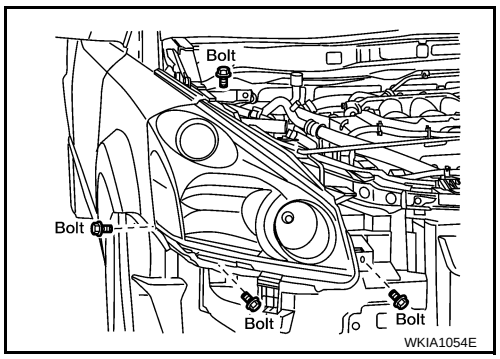
FRONT COMBINATION LAMP

Removal
1. Remove front fascia. Refer to EI-13, "Removal and Installation".
2. Remove front combination lamp bolts.



3. Pull front combination lamp toward front of the vehicle, disconnect connectors, and remove front combination lamp.

Installation
1. Connect front combination lamp connectors.
2. Install front combination lamp bolts.

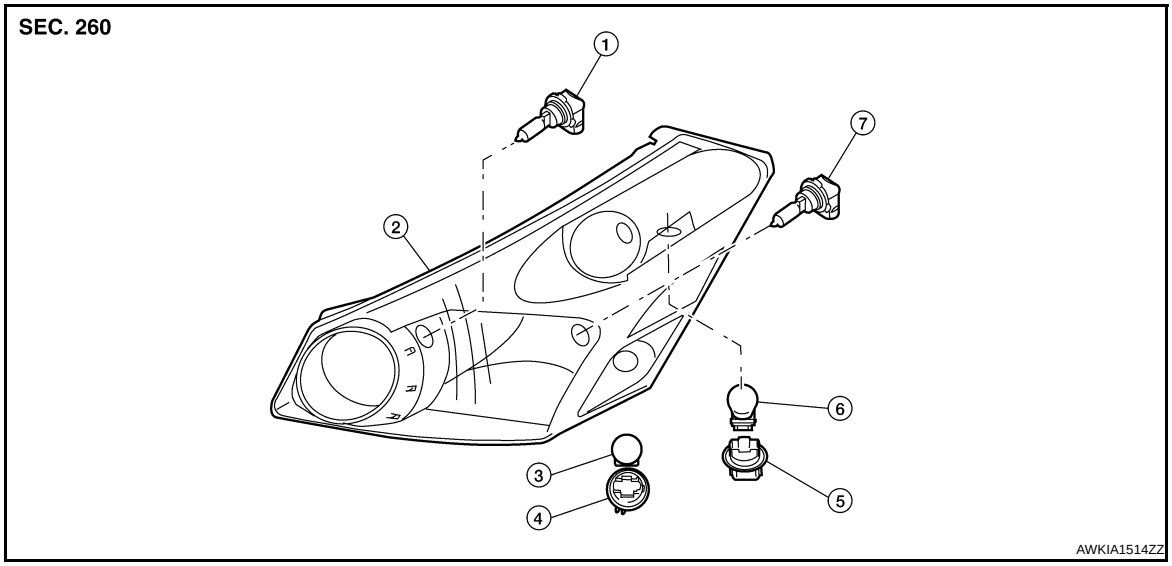


3. Install front fascia. Refer to EI-13, "Removal and Installation".
4. Verify headlamp aiming. Refer to LT-21, "Aiming Adjustment".

Disassembly and Assembly

INFOID:0000000004277638

FRONT COMBINATION LAMP



1. Headlamp bulb (High beam)
2. Headlamp assembly
3. Cornering lamp bulb
4. Cornering lamp bulb socket
5. Parking/turn signal lamp bulb socket
6. Parking/turn signal lamp bulb
7. Headlamp bulb (Low beam)

Disassembly

1. Turn high beam bulb counterclockwise to unlock and remove high beam bulb.
2. Turn low beam bulb counterclockwise to unlock and remove low beam bulb.
3. Turn turn signal/parking lamp (front) bulb socket counterclockwise to unlock and remove turn signal/parking lamp (front) bulb.
4. Turn cornering lamp bulb socket counterclockwise to unlock and remove cornering lamp bulb.

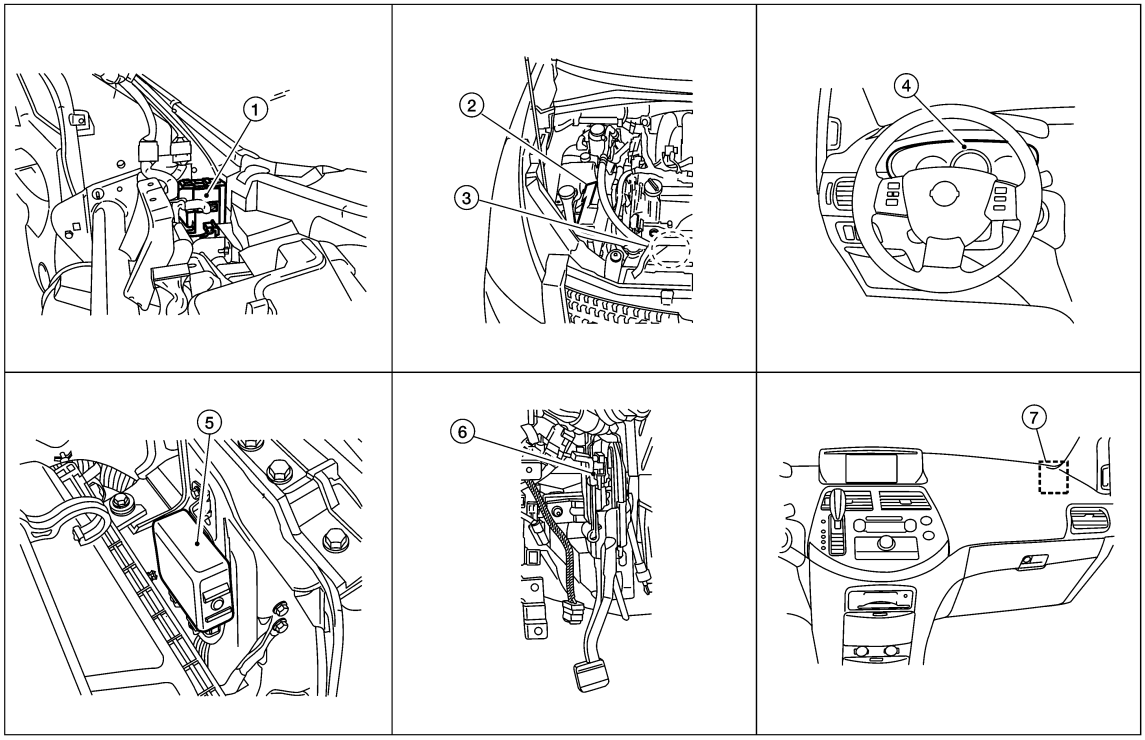
Assembly

Assembly is in the reverse order of disassembly.

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

Component Parts and Harness Connector Location

INFOID:0000000004277639



WKIA5260E

1. BCM M18, M20 (view with instrument panel removed)
2. IPDM E/R E121, E122, E124
3. Generator F1, E112
4. Combination meter M24
5. Daytime light control unit E103, E104
6. Parking brake switch E140
7. Daytime light relay E148

System Description

INFOID:0000000004277640

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 and the lighting switch is in the OFF or 1st position. 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.

Power is supplied at all times

- to ignition relay, located in the IPDM E/R (intelligent power distribution module engine room), and
- to headlamp high relay, located in the IPDM E/R, and
- to headlamp low relay, located in the IPDM E/R, and
- through 50A fusible link (letter **j**, located in the fuse and fusible link box)
- to BCM terminal 70, and
- through 15A fuse [No. 3, located in the fuse block (J/B)]
- to BCM terminal 57, and
- through 15A fuse (No. 29, located in the fuse and fusible link box)
- to daytime light control unit terminals 2 and 3, and
- through 15A fuse (No. 34, located in the IPDM E/R)
- to CPU in the IPDM E/R, and
- through 15A fuse (No. 41, located in the IPDM E/R)
- to CPU in the IPDM E/R.

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

- through 10A fuse [No. 12, located in the fuse block (J/B)]
- to daytime light control unit terminal 12, and

• through 10A fuse [No. 16, located in the fuse block (J/B)]
• to BCM terminal 38.
With the ignition switch in the ACC or ON position, power is supplied
• through 10A fuse [No. 4, located in the fuse block (J/B)]
• to BCM terminal 11.
With the ignition switch in the START position, power is supplied
• through 10A fuse [No. 9, located in the fuse block (J/B)]
• to daytime light control unit terminal 1.
Ground is supplied
• to IPDM E/R terminals 38 and 60, and
• to daytime light control unit terminal 9
• through grounds E9, E15 and E24, and
• to BCM terminal 67
• through grounds M57, M61 and M79.

HEADLAMP OPERATION

Low Beam Operation

With the lighting switch in 2ND position, the BCM receives input requesting the headlamps to illuminate. This input is communicated to the IPDM E/R across the CAN communication lines. The CPU (central processing unit) of the IPDM E/R controls the headlamp low relay coil. When energized, this relay directs power
• through 15A fuse (No. 45, located in the IPDM E/R)
• through IPDM E/R terminal 30, and
• to front combination lamp LH terminal 1, and
• to daytime light control unit terminal 4
• through 15A fuse (No. 36, located in the IPDM E/R)
• through IPDM E/R terminal 20
• to front combination lamp RH terminal 1, and
• through diode 3
• to daytime light control unit terminal 1.
Ground is supplied
• to front combination lamp LH and RH terminal 2
• through grounds E9, E15 and E24.
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 requesting the headlamp high beams to illuminate. This input is communicated to the IPDM E/R across the CAN communication lines. The CPU of the combination meter controls the ON/OFF status of the HIGH BEAM indicator. The CPU of the IPDM E/R controls the headlamp high relay coil. When energized, this relay directs power
• through 10A fuse (No. 40, located in the IPDM E/R)
• through IPDM E/R terminal 27
• to daytime light relay terminal 2, and
• through diode-3
• to daytime light control unit terminal 1, and
When energized, the daytime light relay directs power
• through daytime light relay terminal 3
• to daytime light control unit terminal 8 and
• to front combination lamp RH terminal 3.
Also when the headlamp high relay is energized, it directs power
• through 10A fuse (No. 38, located in the IPDM E/R)
• through IPDM E/R terminal 28
• to daytime light control unit terminal 5
• through daytime light control unit terminal 6
• to front combination lamp LH terminal 3.
Ground is supplied
• to front combination lamp RH terminal 4
• through grounds E9, E15 and E24, and
• to front combination lamp LH terminal 4
• to daytime light control unit terminal 7
• through daytime light control unit terminal 9
• through grounds E9, E15 and E24.

With power and ground supplied, the high beam headlamps illuminate.

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 feature is activated.
Under this condition, the headlamps remain illuminated for 5 minutes unless the combination switch (lighting switch) position is changed. If the combination switch (lighting switch) position is changed, then the headlamps are turned off.

AUTO LIGHT OPERATION (IF EQUIPPED)

For auto light operation, refer to LT-35, "System Description".

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 front combination lamp LH terminal 3
- through front combination lamp LH terminal 4
- to daytime light control unit terminal 7, and
- through daytime light control unit terminal 8
- to front combination lamp RH terminal 3.

Ground is supplied
- to front combination lamp RH terminal 4
- through grounds E9, E15 and E24.

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

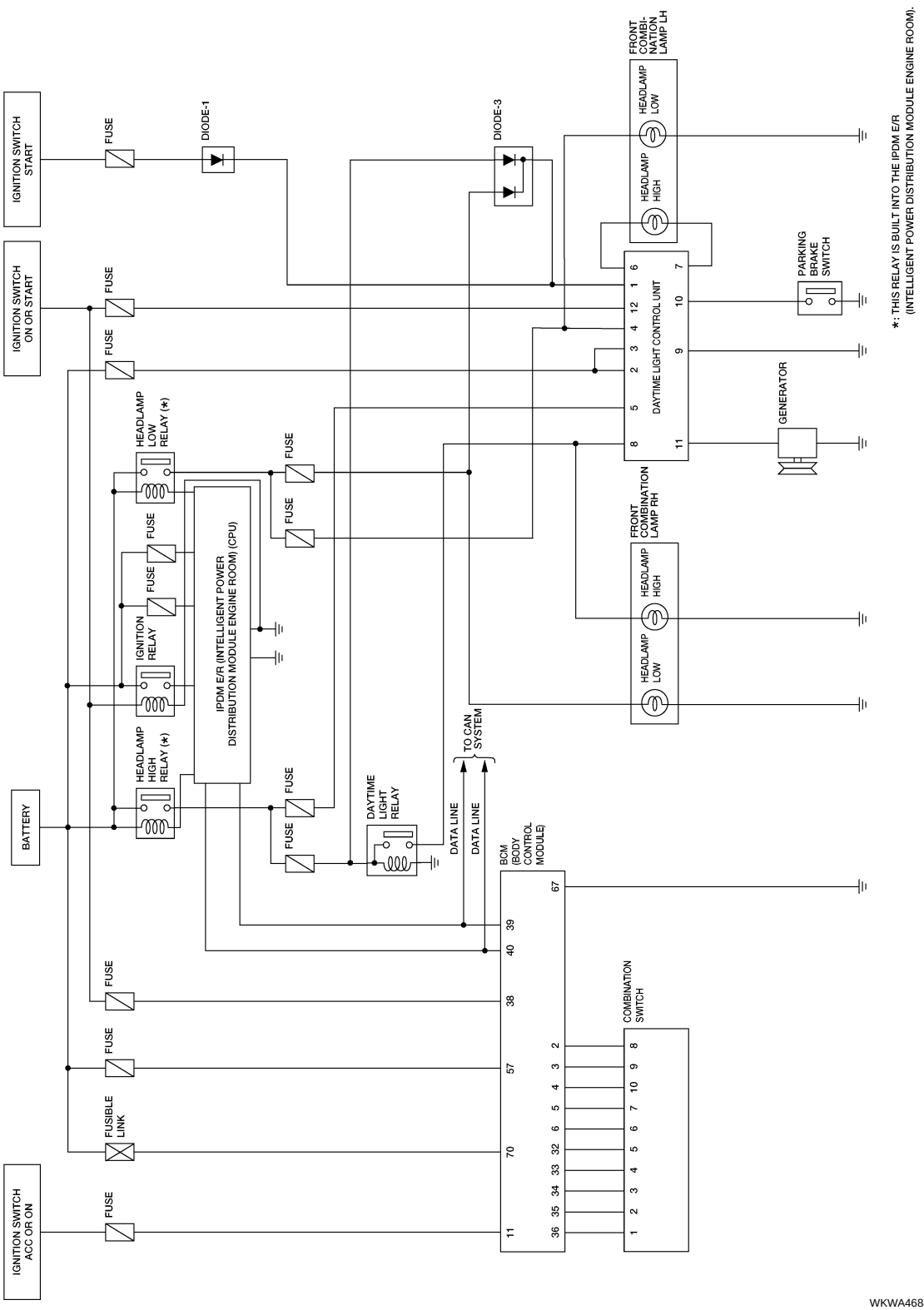
CAN Communication System Description

INFOID:0000000004277641

Refer to LAN-3, "CAN Communication System".

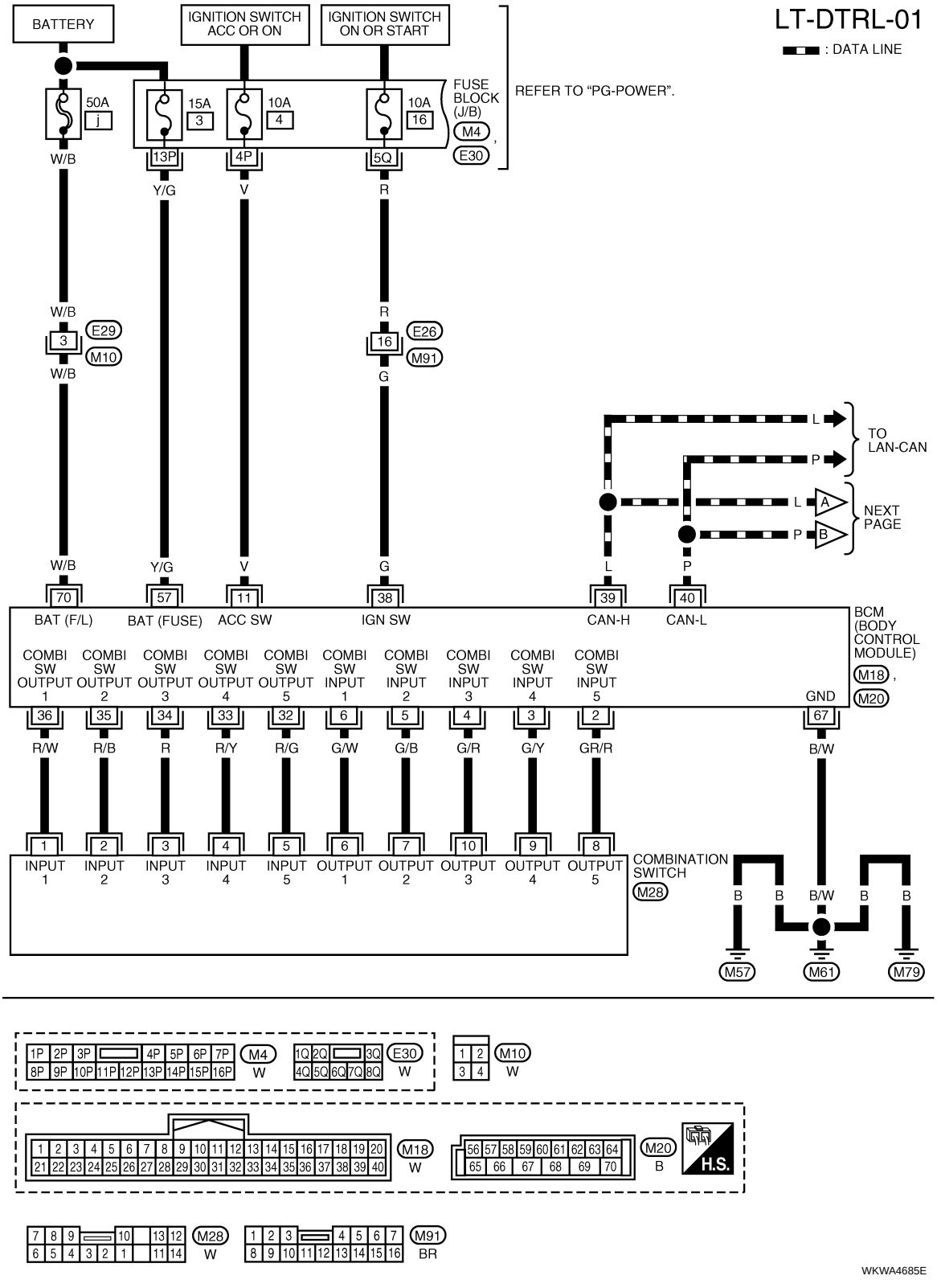
Schematic

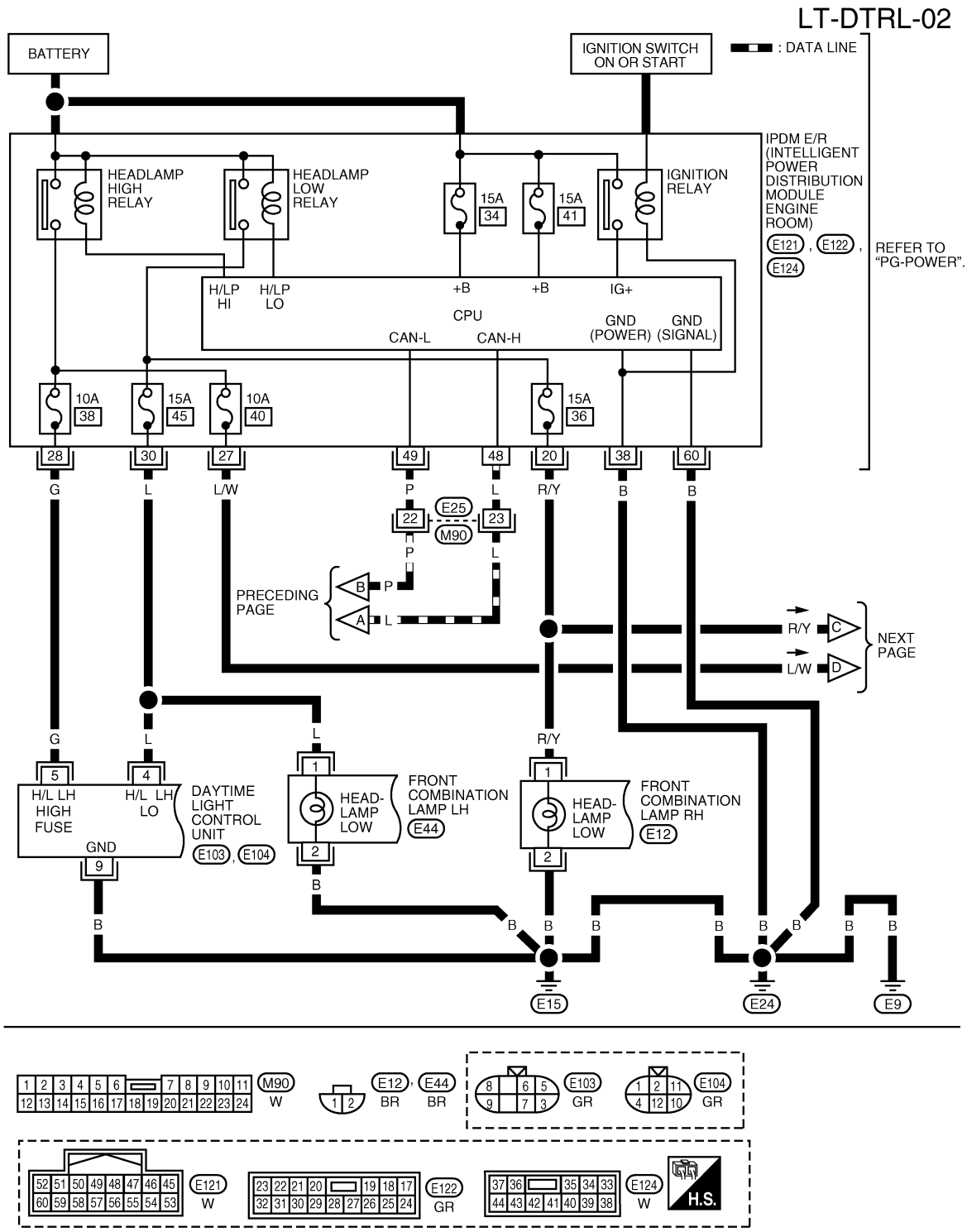
INFOID:0000000004277642



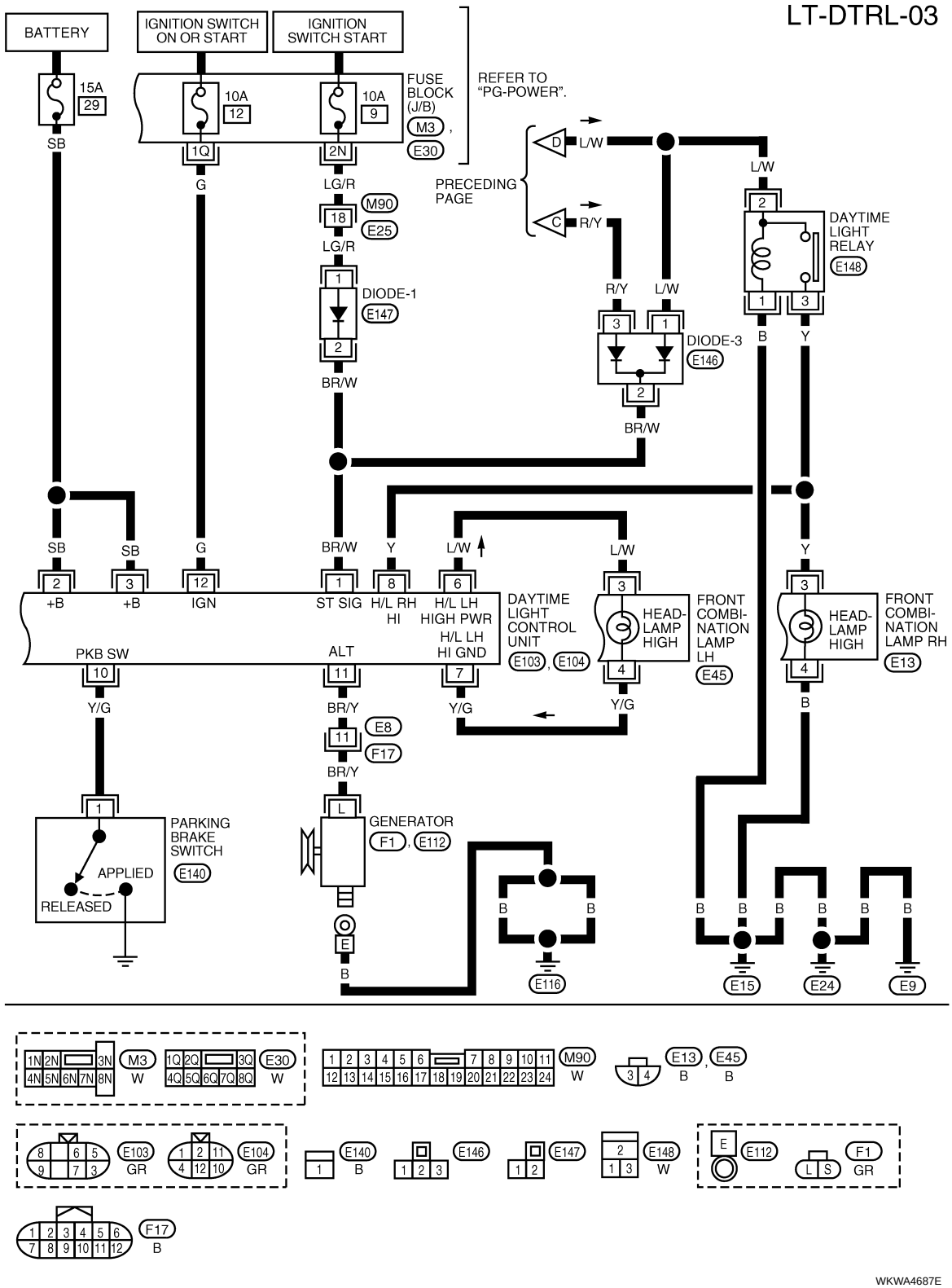
Wiring Diagram - DTRL -

INFOID:0000000004277643




LT-DTRL-02
BATTERY
IGNITION SWITCH ON OR START
: DATA LINE
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E121, E122, E124
REFER TO "PG-POWER".
HEADLAMP HIGH RELAY
HEADLAMP LOW RELAY
IGNITION RELAY
15A 34
15A 41
H/LP HI
H/LP LO
+B
+B
IG+
CPU
CAN-L
CAN-H
GND (POWER)
GND (SIGNAL)
10A 38
15A 45
10A 40
15A 36
28
30
27
49
48
20
38
60
G
L
L/W
P
L
R/Y
B
B
E25
M90
22
23
PRECEDING PAGE
NEXT PAGE
R/Y
L/W
C
D
5
4
1
2
9
H/L LH HIGH FUSE
H/L LH LO
GND
DAYTIME LIGHT CONTROL UNIT
E103, E104
HEAD-LAMP LOW
FRONT COMBINATION LAMP LH
E44
FRONT COMBINATION LAMP RH
E12
E15
E24
E9
M90 W
E12 BR
E44 BR
E103 GR
E104 GR
E121 W
E122 GR
E124 W
H.S.

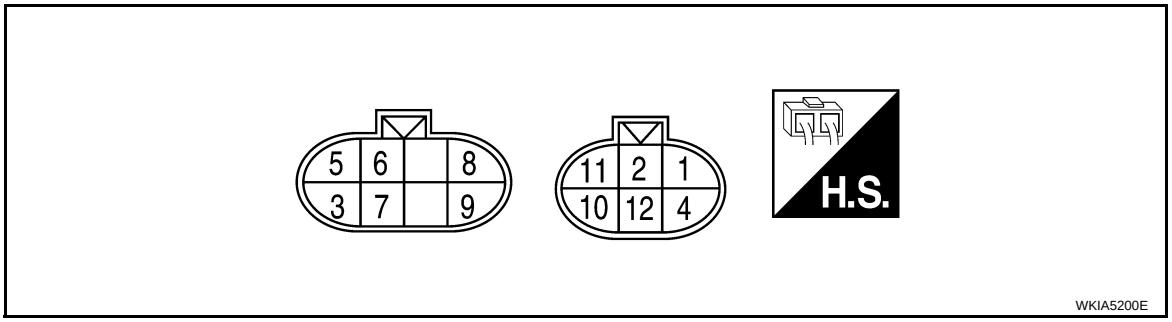
WKWA4686E


LT-DTRL-03
BATTERY
IGNITION SWITCH ON OR START
IGNITION SWITCH START
15A 29
10A 12
10A 9
FUSE BLOCK (J/B) M3, E30
REFER TO "PG-POWER".
PRECEDING PAGE
D L/W
C R/Y
DAYTIME LIGHT RELAY E148
DIODE-1 E147
DIODE-3 E146
M90 E25
SB
G
LG/R
BR/W
R/Y
L/W
B
Y
+B
IGN
ST SIG
H/L RH HI
H/L LH HIGH PWR
H/L LH HI GND
DAYTIME LIGHT CONTROL UNIT E103, E104
HEAD-LAMP HIGH
FRONT COMBI-NATION LAMP LH E45
FRONT COMBI-NATION LAMP RH E13
PKB SW
ALT
Y/G
BR/Y
E8
F17
PARKING BRAKE SWITCH E140
APPLIED
RELEASED
GENERATOR F1, E112
E116
E15
E24
E9
M3 W
E30 W
M90 W
E13, E45 B B
E103 GR
E104 GR
E140 B
E146
E147
E148 W
E112
F1 GR
F17 B
WKWA4687E

Trouble Diagnosis

INFOID:0000000004277644

DAYTIME LIGHT CONTROL UNIT HARNESS CONNECTOR TERMINAL LAYOUT



DAYTIME LIGHT CONTROL UNIT INSPECTION TABLE

Terminal No.	Wire color	Item	Condition	Voltage (Approx.)
1	BR/W	Ignition switch start signal	Ignition switch in START position	Battery voltage
			All other conditions	0V
2	SB	Battery	Ignition switch in all positions	Battery voltage
3	SB	Battery	Ignition switch in all positions	Battery voltage
4	L	Lighting switch headlamp LH low beam output	Lighting switch in the headlamp ON (2ND) position and low beam (B) position	Battery voltage
			All other conditions	0V
5	G	Lighting switch headlamp LH high beam output	Lighting switch in the flash-to-pass (C) position or headlamp ON (2ND) position and high beam (A) position	Battery voltage
			All other conditions	0V
6	L/W	Headlamp LH high beam	Lighting switch in the flash-to-pass (C) position or headlamp ON (2ND) position and high beam (A) position	Battery voltage
			With parking brake released, engine running and lighting switch in OFF or parking and tail lamp ON (1ST) positions **CAUTION:** **Block wheels and ensure selector lever is in P or N position.**	Battery voltage
			All other conditions	0V
7	Y/G	Headlamp LH (high) control	Lighting switch in the flash-to-pass (C) position or headlamp ON (2ND) position and high beam (A) position and high beam position	0V
			With parking brake released, engine running and lighting switch in OFF or parking and tail lamp ON (1ST) positions **CAUTION:** **Block wheels and ensure selector lever is in P or N position.**	Battery voltage
			All other conditions	0V
8	Y	Lighting switch headlamp RH high beam output	Lighting switch in the flash-to-pass (C) position or headlamp ON (2ND) position and high beam (A) position	Battery voltage
			With parking brake released, engine running and lighting switch in OFF or parking and tail lamp ON (1ST) positions **CAUTION:** **Block wheels and ensure selector lever is in P or N position.**	6V
			All other conditions	0V

9	B	Ground	—	—
10	Y/G	Parking brake switch	Parking brake released	Battery voltage
			Parking brake set	0V
11	BR/Y	Generator (L terminal)	When engine is running	Battery voltage
			All other conditions	0V
12	G	Ignition switch on signal	Ignition switch OFF, ACC positions	0V
			Ignition switch ON, START positions	Battery voltage

Aiming Adjustment

INFOID:0000000004277645

Refer to LT-21, "Aiming Adjustment".

Bulb Replacement

INFOID:0000000004277646

Refer to LT-22, "Bulb Replacement".

Removal and Installation

INFOID:0000000004277647

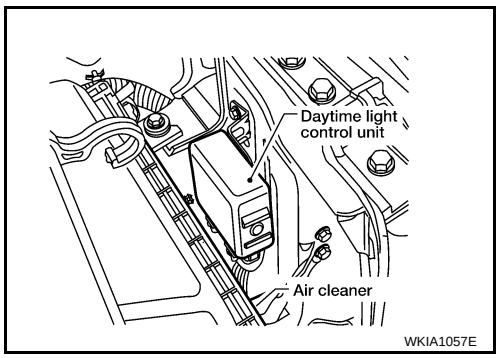
FRONT COMBINATION LAMP

Refer to LT-23, "Removal and Installation".

DAYTIME LIGHT CONTROL UNIT

Removal

1. Remove the daytime light control unit bolt.
2. Disconnect connectors.
3. Remove daytime light control unit.



Installation

Installation is in the reverse order of removal.

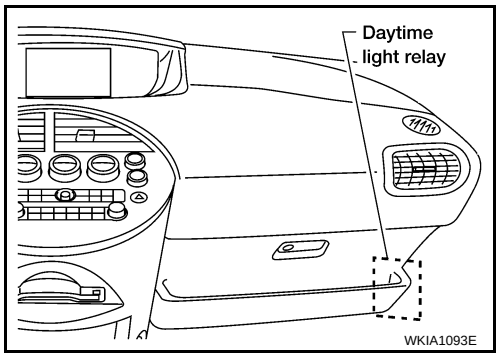
DAYTIME LIGHT RELAY

Removal

NOTE:

The daytime light relay is taped to the main wiring harness near the lower dash side finisher RH.

1. Remove the glove box assembly. Refer to IP-14, "Glove Box".
2. Carefully remove the tape holding the daytime light relay to the main harness.
3. Disconnect the connector.
4. Remove daytime light relay.



INSTALLATION

Installation is in the reverse order of removal.

Disassembly and Assembly

INFOID:0000000004277648

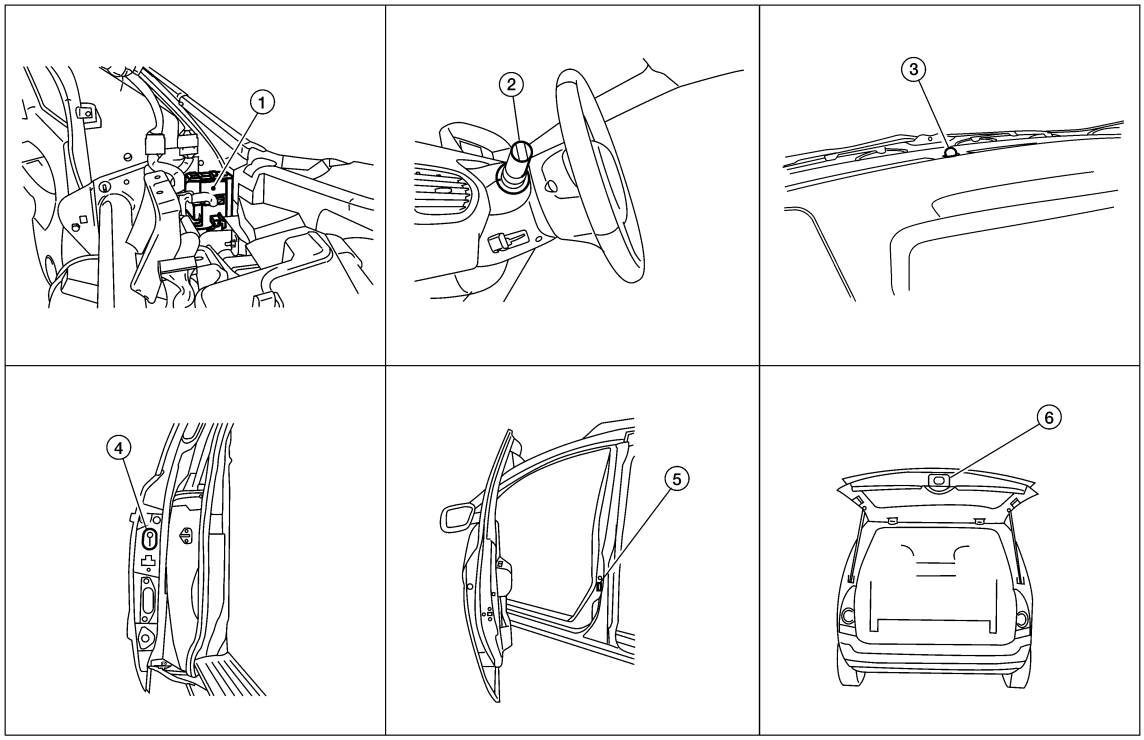
FRONT COMBINATION LAMP

Refer to LT-24, "Disassembly and Assembly".

AUTO LIGHT SYSTEM

Component Parts and Harness Connector Location

INFOID:0000000004277649



WKIA5261E

1. BCM M18, M19, M20 (view with instrument panel removed)
2. Combination switch M28
3. Optical sensor M16
4. Sliding door switch LH B46, RH B135
5. Front door switch LH B8, RH B108
6. Back door latch (door ajar switch) D511

System Description

INFOID:0000000004277650

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 eight modes. Mode selections are accessed through the vehicle electronic settings menu of the color display (refer to owners manual) or with CONSULT-III.

OUTLINE

The auto light control system uses an optical sensor 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 using four modes. For the details of the setting, refer to LT-41, "CONSULT-III Function (BCM)".
Optical sensor ground is supplied
- to optical sensor terminal 3
- through BCM (body control module) terminal 18.

When ignition switch is turned to "ON" position and when outside brightness is darker than prescribed level, input is supplied
- to BCM terminal 58
- from optical sensor terminal 4.

The headlamps will then illuminate. For a description of headlamp operation, refer to LT-5, "System Description".

COMBINATION SWITCH READING FUNCTION

Refer to BCS-3, "System Description".

EXTERIOR LAMP BATTERY SAVER CONTROL

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

DELAY TIMER FUNCTION

When the ignition switch is ON and auto light switch is ON, the BCM turns on/off the headlamps. In delay timer function, ignition is OFF, auto light sensor power source is OFF and the headlamps are not turned on/off by the BCM. On condition that:

- when the state of ignition switch ON or ACC is ON and output judgment by auto light function is headlamp ON changes to ignition switch and ACC are OFF and any door switch is ON, output judgment by BCM should be headlamp ON for 5 minutes by timer. After time out, output judgment by BCM should be headlamp OFF.
- when the state of any door switch is turned to ON from OFF while 45 second or 5 minute timer is counting, timer stops, and restarts counting for 5 minutes, then BCM judges output as headlamp ON. After time out, BCM judges output as headlamp OFF.
- when the state of front door switch LH, front door switch RH, rear door switch LH, rear door switch RH or back door latch (door ajar switch) is ON turns to all door switches are OFF while 45 second or 5 minute timer is counting, timer stops, and restarts counting for 45 seconds, then BCM judges output as headlamp ON. After timer out, BCM judges output as headlamp OFF.
- when the state is ignition switch ON or ACC is ON or auto light switch OFF while timer is counting, timer stops counting and BCM turns on/off lamps according to headlamp function, front fog lamp function, auto light function and headlamp battery save function.

Delay timer control mode can be changed by the function setting of CONSULT-III or with the display (with color display).

CAN Communication System Description

INFOID:0000000004277651

Refer to LAN-3, "CAN Communication System".

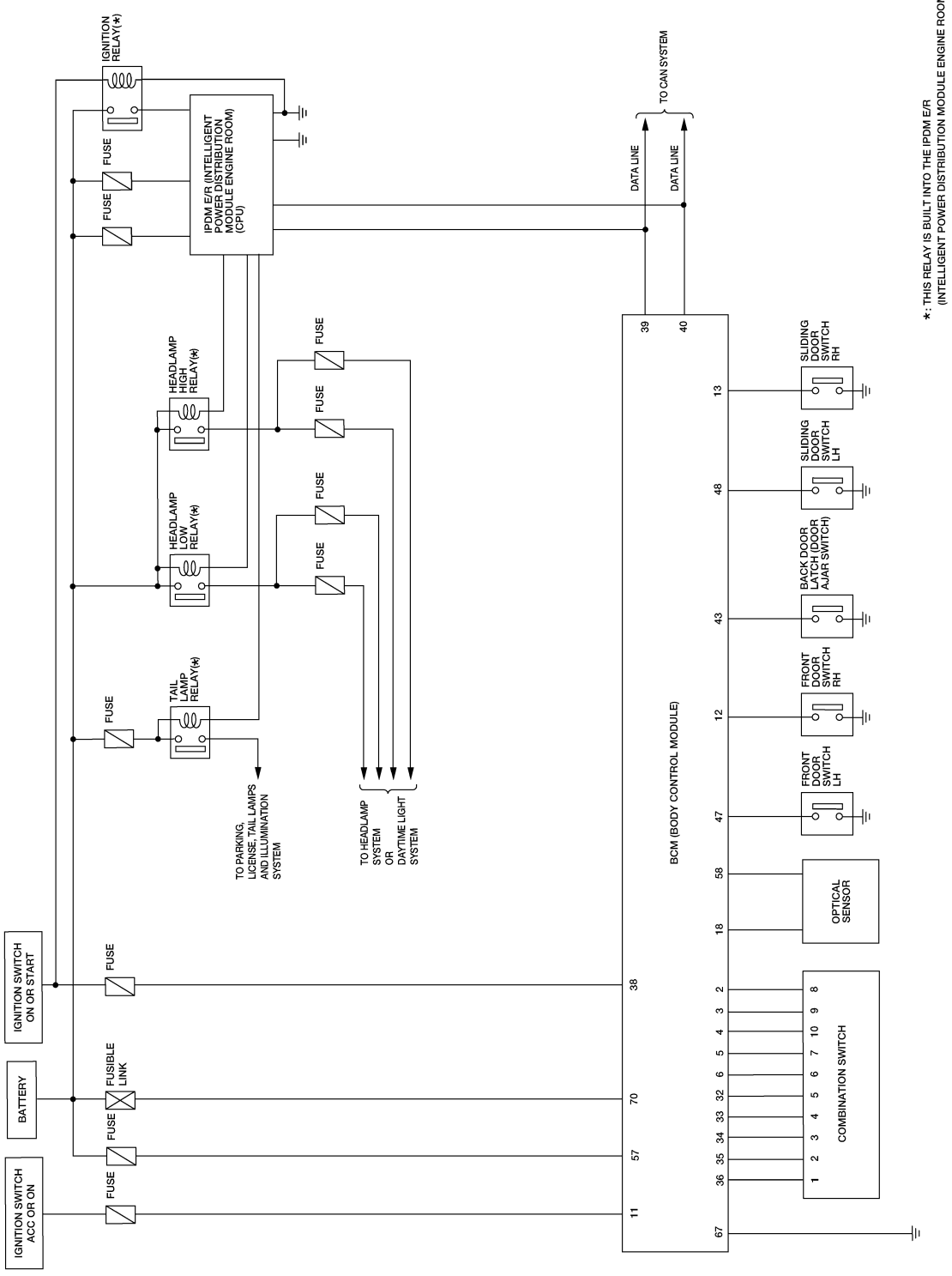
Major Component and Functions

INFOID:0000000004277652

Components	Functions
BCM	• Turns on/off circuits of tail light and headlamp according to signals from light sensor, lighting switch (AUTO), front door switch LH, front door switch RH, sliding door switch LH and RH, back door latch (door ajar switch), and ignition switch (ON, OFF).
Optical sensor	• Converts ambient light (lux) to voltage and sends it to BCM. (Detects lightness of 50 to 1,300 lux)

Schematic

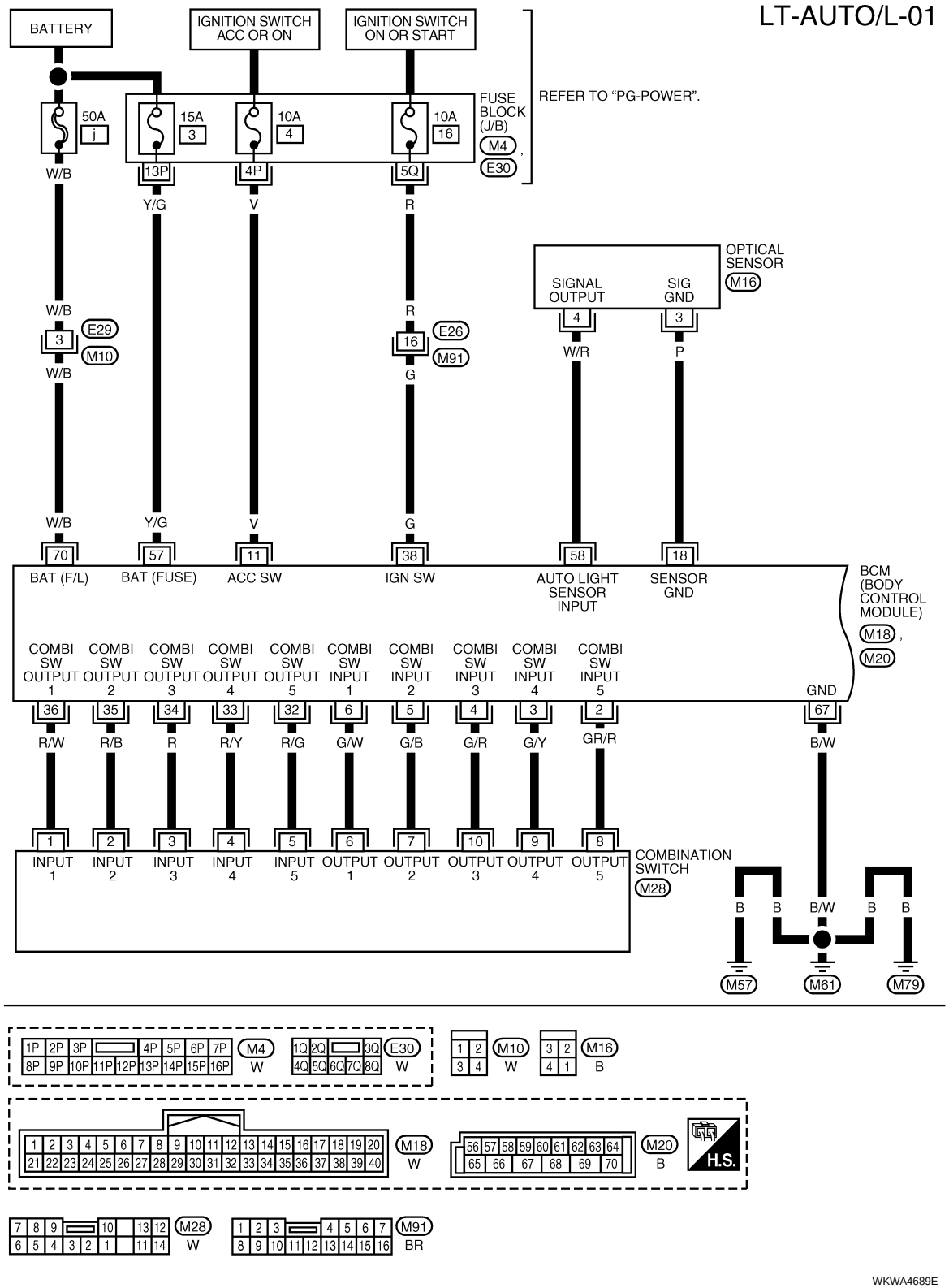
INFOID:0000000004277653



WKWA4688E

Wiring Diagram - AUTO/L -

INFOID:0000000004277654



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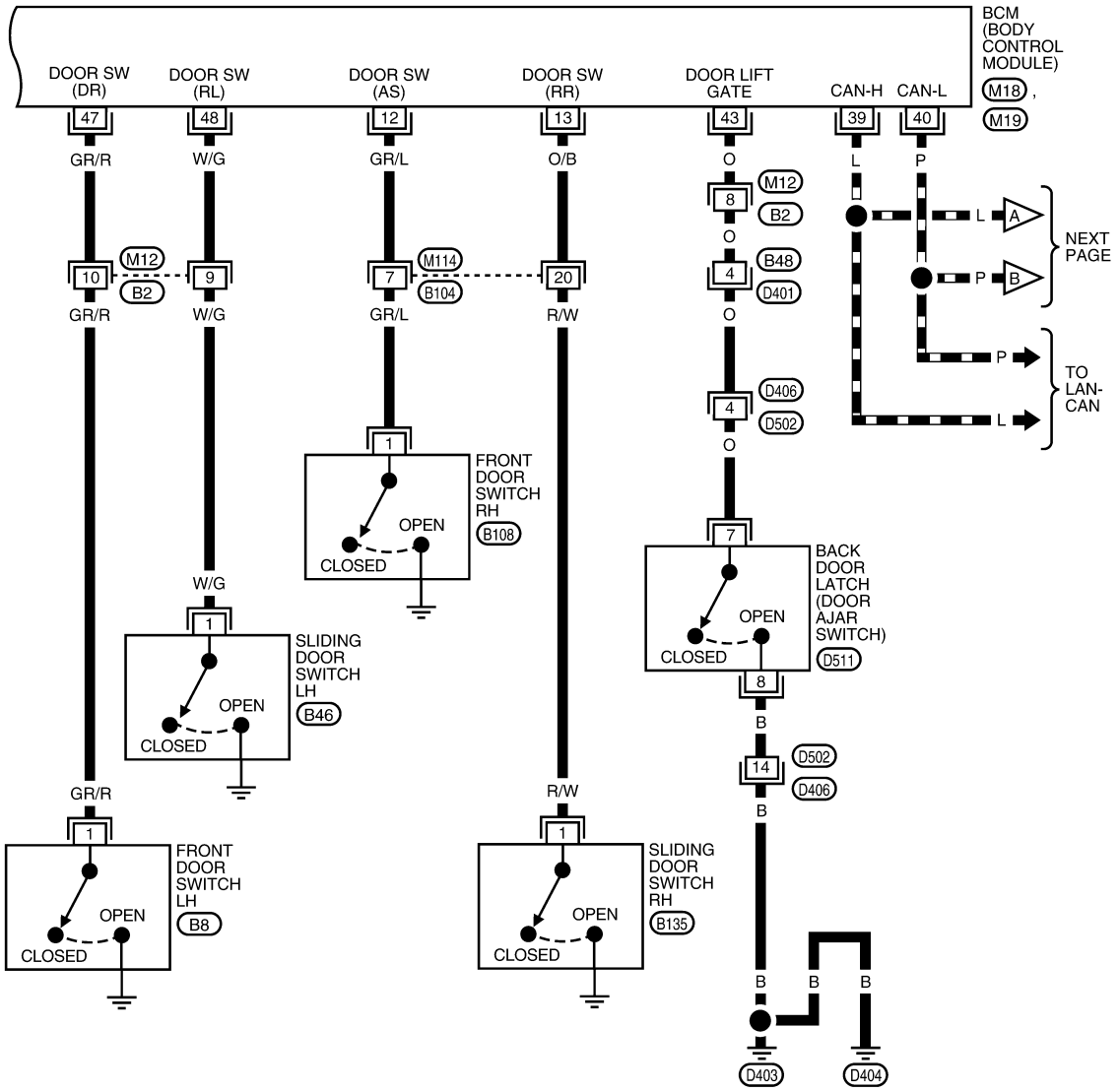
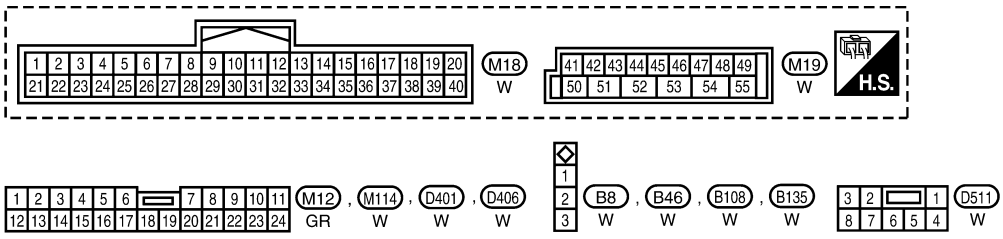
LT-AUTO/L-02

: DATA LINE





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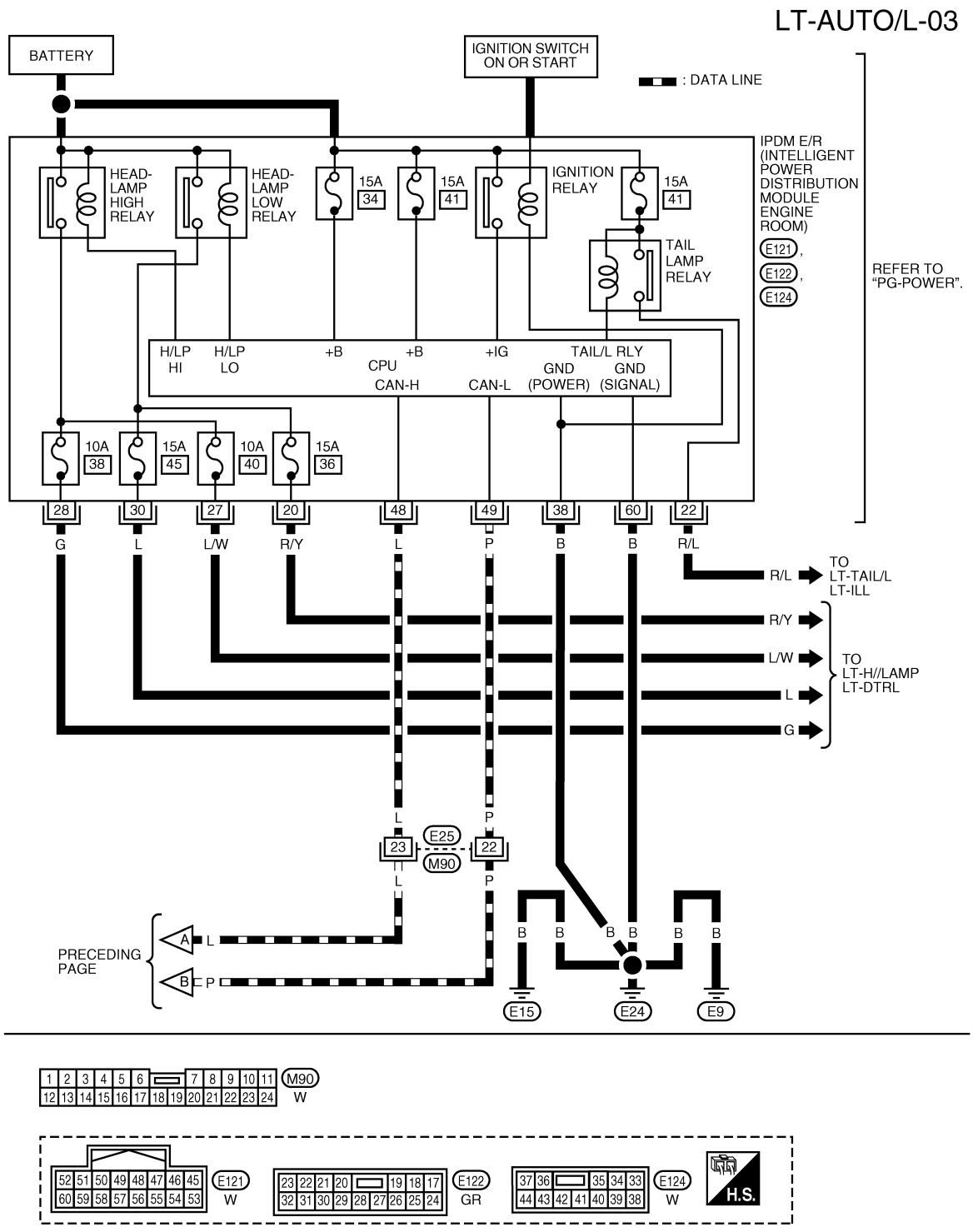


WKWA4691E

Terminal and Reference Value for BCM

INFOID:0000000004277655

Refer to BCS-11, "Terminal and Reference Value for BCM".

Terminal and Reference Value for IPDM E/R

INFOID:0000000004277656

Refer to PG-24, "Terminal and Reference Value for IPDM E/R".

How to Proceed with Trouble Diagnosis

INFOID:0000000004277657

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-35, "System Description".
3. Carry out the Preliminary Check. Refer to LT-41, "Preliminary Check".
4. Check symptom and repair or replace the cause of malfunction. Refer to LT-44, "Trouble Diagnosis Chart by Symptom".
5. Does the auto light system operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

Preliminary Check

INFOID:0000000004277658

SETTING CHANGE FUNCTIONS

- Sensitivity of auto light system can be adjusted using CONSULT-III. Refer to LT-41, "CONSULT-III Function (BCM)".

CHECK BCM CONFIGURATION

1.CHECK BCM CONFIGURATION

Confirm BCM configuration for "AUTO LIGHT" is set to "WITH". Refer to BCS-17, "Configuration".

OK or NG

OK >> Continue preliminary check. Refer to "CHECK POWER SUPPLY AND GROUND CIRCUIT".
NG >> Change BCM configuration for "AUTO LIGHT" to "WITH". Refer to BCS-17, "Configuration".

CHECK POWER SUPPLY AND GROUND CIRCUIT

Refer to BCS-15, "BCM Power Supply and Ground Circuit Inspection".
Refer to PG-27, "IPDM E/R Power/Ground Circuit Inspection".

CONSULT-III Function (BCM)

INFOID:0000000004277659

CONSULT-III can display each diagnostic item using the diagnostic test modes shown following.

BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.
	DATA MONITOR	Displays BCM input/output data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
	SELF-DIAG RESULTS	Displays BCM self-diagnosis results.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
	ECU PART NUMBER	BCM part number can be read.
	CONFIGURATION	Performs BCM configuration read/write functions.

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 "MODE 1-4" of setting to be changed (CUSTOM A/LIGHT SETTING). Touch "MODE1-8" of setting to be changed (ILL DELAY SET).
6. Touch "CHANGE SETT".
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 "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 "SELECT MONITOR ITEM" screen.

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

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

Display Item List

Monitor item		Contents
IGN ON SW	"ON/OFF"	Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from the ignition switch signal.
ACC ON SW	"ON/OFF"	Displays "ACC (ON)/OFF, Ignition OFF (OFF)" status judged from ignition switch signal.
HI BEAM SW	"ON/OFF"	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
HEAD LAMP SW 1	"ON/OFF"	Displays status (headlamp switch 1: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
HEAD LAMP SW 2	"ON/OFF"	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
LIGHT SW 1ST	"ON/OFF"	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting 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)
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 lamp switch: ON/Others: OFF) of front fog lamp switch judged from lighting switch signal.
DOOR SW-DR	"ON/OFF"	Displays status of the front door LH as judged from the front door switch LH signal. (Door is open: ON/Door is closed: OFF)
DOOR SW-AS	"ON/OFF"	Displays status of the front door RH as judged from the front door switch RH signal. (Door is open: ON/Door is closed: OFF)
DOOR SW-RR	"ON/OFF"	Displays status of the sliding door as judged from the sliding door switch (RH) signal. (Door is open: ON/Door is closed: OFF)
DOOR SW-RL	"ON/OFF"	Displays status of the sliding door as judged from the sliding door switch (LH) signal. (Door is open: ON/Door is closed: OFF)
BACK DOOR SW	"ON/OFF"	Displays status of the back door as judged from the back door switch signal. (Door is open: ON/Door is closed: OFF)

Monitor item		Contents
TURN SIGNAL R	"ON/OFF"	Displays status (Turn right: ON/Others: OFF) as judged from lighting switch signal.
TURN SIGNAL L	"ON/OFF"	Displays status (Turn left: ON/Others: OFF) as judged from lighting switch signal.
CARGO LAMP SW	"ON/OFF"	Displays status of cargo lamp.
OPTICAL SENSOR	[0 - 5V]	Displays "ambient light (close to 5V when dark/close to 0V when light)" judged from optical sensor signal.

ACTIVE TEST

Operation Procedure

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

Display Item List

Test item	Description
TAIL LAMP	Allows tail lamp relay to operate by switching ON-OFF.
HEAD LAMP	Allows headlamp relay (HI, LO) to operate by switching ON-OFF.
FR FOG LAMP	Allows fog lamp relay to operate by switching ON-OFF.
CARGO LAMP	Allows cargo lamp to operate by switching ON-OFF.
CORNERING LAMP	Allows cornering lamp relay (RH, LH) to operate by switching ON-OFF.

CONSULT-III Function (IPDM E/R)

INFOID:0000000004277660

CONSULT-III can display each diagnostic item using the diagnostic test modes shown following.

IPDM E/R diagnostic Mode	Description
SELF-DIAG RESULTS	Displays IPDM E/R self-diagnosis results.
DATA MONITOR	Displays IPDM E/R input/output data in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.

DATA MONITOR

Operation Procedure

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

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

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

All Signals, Main Signals, Selection From Menu

Item name	CONSULT-III screen display	Display or unit	Monitor item selection			Description
			ALL SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	
Parking, license plate and tail lamps request	TAIL&CLR REQ	ON/OFF	×	×	×	Signal status input from BCM
Headlamp low beam request	HL LO REQ	ON/OFF	×	×	×	Signal status input from BCM
Headlamp high beam request	HL HI REQ	ON/OFF	×	×	×	Signal status input from BCM
Cornering lamp	CRNRNG LMP REQ	ON/OFF	×	–	×	Signal status input from BCM
Front fog lamps request	FR FOG REQ	ON/OFF	×	×	×	Signal status input from BCM

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

ACTIVE TEST

Operation Procedure

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

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

Trouble Diagnosis Chart by Symptom

INFOID:0000000004277661

Trouble phenomenon	Malfunction system and reference
• Parking lamps and headlamps will not illuminate when outside of the vehicle becomes dark. (Lighting switch 1st position and 2nd position operate normally.) • Parking lamps and headlamp will not go out when outside of the vehicle becomes light. (Lighting switch 1st position and 2nd position operate normally.) • Headlamps go out when outside of the vehicle becomes light, but parking lamps stay on.	• Refer to LT-41, "CONSULT-III Function (BCM)". • Refer to LT-45, "Lighting Switch Inspection". • Refer to LT-45, "Optical Sensor System Inspection". If above systems are normal, replace BCM. Refer to BCS-17, "Removal and Installation of BCM".
Parking lamps illuminate when outside of the vehicle becomes dark, but headlamps stay off. (Lighting switch 1st position and 2nd position operate normally.)	• Refer to LT-41, "CONSULT-III Function (BCM)". • Refer to LT-45, "Optical Sensor System Inspection". If above systems are normal, replace BCM. Refer to BCS-17, "Removal and Installation of BCM".
Auto light adjustment system will not operate. (Lighting switch AUTO, 1st position and 2nd position operate normally.)	• Refer to LT-45, "Optical Sensor System Inspection". If above systems is normal, replace BCM. Refer to BCS-17, "Removal and Installation of BCM".

Trouble phenomenon	Malfunction system and reference
Auto light adjustment system will not operate.	• CAN communication line to BCM inspection. Refer to BCS-17, "CAN Communication Inspection Using CONSULT-III (Self-Diagnosis)".
Shut off delay feature will not operate.	• CAN communication line inspection between BCM and combination meter. Refer to BCS-17, "CAN Communication Inspection Using CONSULT-III (Self-Diagnosis)". • Refer to BL-35, "Door Switch Check (Without Automatic Back Door System)". If above systems is normal, replace BCM. Refer to BCS-17, "Removal and Installation of BCM".

Lighting Switch Inspection

INFOID:0000000004277662

1.CHECK LIGHTING SWITCH INPUT SIGNAL

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

When lighting switch is in AUTO position : AUTO LIGHT SW ON

Without CONSULT-III
Refer to LT-81, "Combination Switch Inspection".

OK or NG

OK >> Inspection End.
NG >> Check lighting switch. Refer to LT-81, "Combination Switch Inspection".

Optical Sensor System Inspection

INFOID:0000000004277663

1.CHECK OPTICAL SENSOR INPUT SIGNAL

With CONSULT-III
Select "BCM" on CONSULT-III. With "OPTICAL SENSOR" data monitor, check difference in the voltage when the optical 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 completely subjected to work lamp light. If the optical sensor is insufficiently illuminated, the measured value may not satisfy the standard.

Without CONSULT-III
GO TO 2.

OK or NG

OK >> Inspection End.
NG >> GO TO 2.

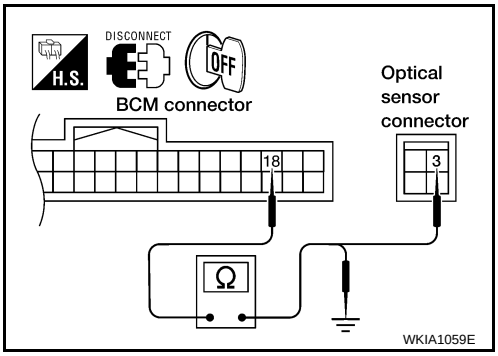
2.CHECK OPTICAL SENSOR SIGNAL GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and optical sensor connector.
3. Check continuity (open circuit) between BCM harness connector M18 terminal 18 and optical sensor harness connector M16 terminal 3.

18 - 3 : Continuity should exist.

4. Check continuity (short circuit) between BCM harness connector M18 terminal 18 and ground.

18 - Ground : Continuity should not exist.



OK or NG

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

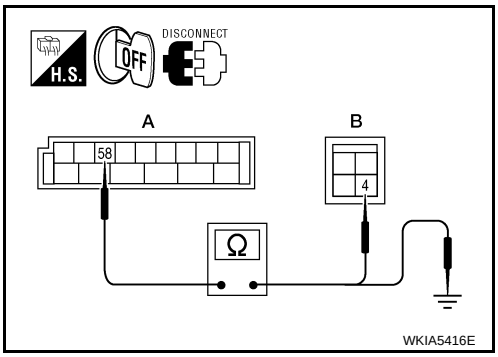
3. CHECK OPTICAL SENSOR SIGNAL CIRCUIT

1. Check continuity (open circuit) between BCM connector M20 (A) terminal 58 and optical sensor connector M16 (B) terminal 4.

58 - 4 : Continuity should exist.

2. Check continuity (short circuit) between BCM harness connector M20 terminal 58 and ground.

58 - Ground : Continuity should not exist.



OK or NG

OK >> Replace optical sensor. Refer to LT-46, "Removal and Installation". Recheck sensor output with CONSULT-III. If NG, replace BCM. Refer to BCS-17, "Removal and Installation of BCM".
NG >> Repair harness or connector.

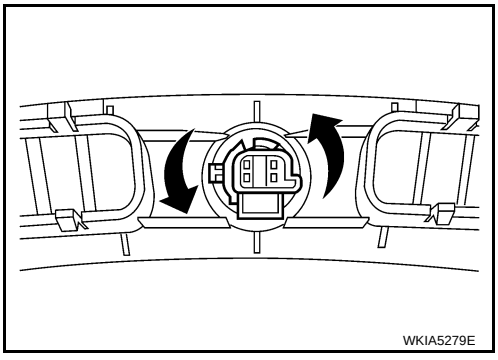
Removal and Installation

INFOID:0000000004277664

OPTICAL SENSOR

Removal

1. Remove defrost grille. Refer to IP-10, "Instrument Panel".
2. Disconnect the connector.
3. Turn the optical sensor counterclockwise to remove it from defroster grille.



Installation

Installation is in the reverse order of removal.

FRONT FOG LAMP

Component Parts and Harness Connector Location

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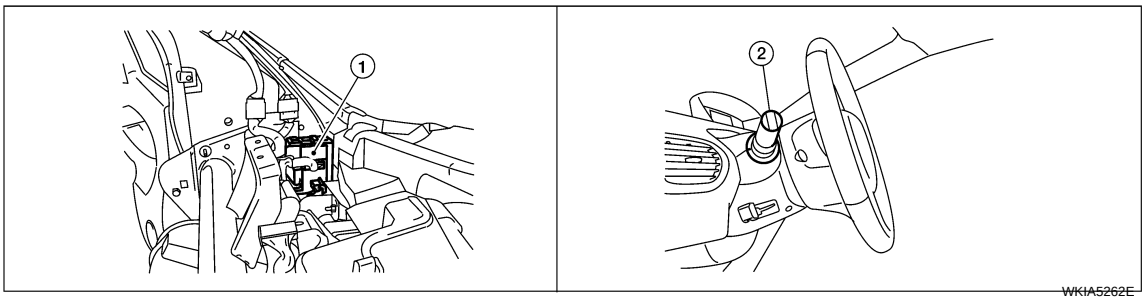


1. BCM M18, M20 (view with instrument panel removed)
2. Combination switch (lighting switch) M28

System Description

INFOID:0000000004277666

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 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 ignition relay, located in the IPDM E/R, and
- through 15A fuse (No. 43, located in the IPDM E/R)
- to front fog lamp relay, located in the IPDM E/R, and
- through 15A fuse (No. 34, located in the IPDM E/R)
- to CPU of the IPDM E/R, and
- through 15A fuse (No. 41, located in the IPDM E/R)
- to CPU of the IPDM E/R, and
- through 50A fusible link (letter **j**, located in the fuse and fusible link box)
- to BCM terminal 70, and
- through 15A fuse [No. 3, located in the fuse block (J/B)]
- to BCM terminal 57.

When the ignition switch is in ON or START position, power is supplied
- to ignition relay, located in the IPDM E/R, and
- through 10A fuse [No. 16, located in the fuse block (J/B)]
- to BCM terminal 38.

When the ignition switch is in ACC or ON position, power is supplied
- through 10A fuse [No. 4, located in the fuse block (J/B)]
- to BCM terminal 11.

Ground is supplied
- to BCM terminal 67
- through grounds M57, M61 and M79, and
- to IPDM E/R terminals 38 and 60
- through grounds E9, E15 and E24.

FOG LAMP OPERATION

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
- through IPDM E/R terminal 37
- to front fog lamp LH terminal +, and

- through IPDM E/R terminal 36
- to front fog lamp RH terminal +.

Ground is supplied

- to front fog lamp LH and RH terminal –
- through grounds E9, E15 and E24.

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

COMBINATION SWITCH READING FUNCTION

Refer to BCS-3, "System Description".

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-III.

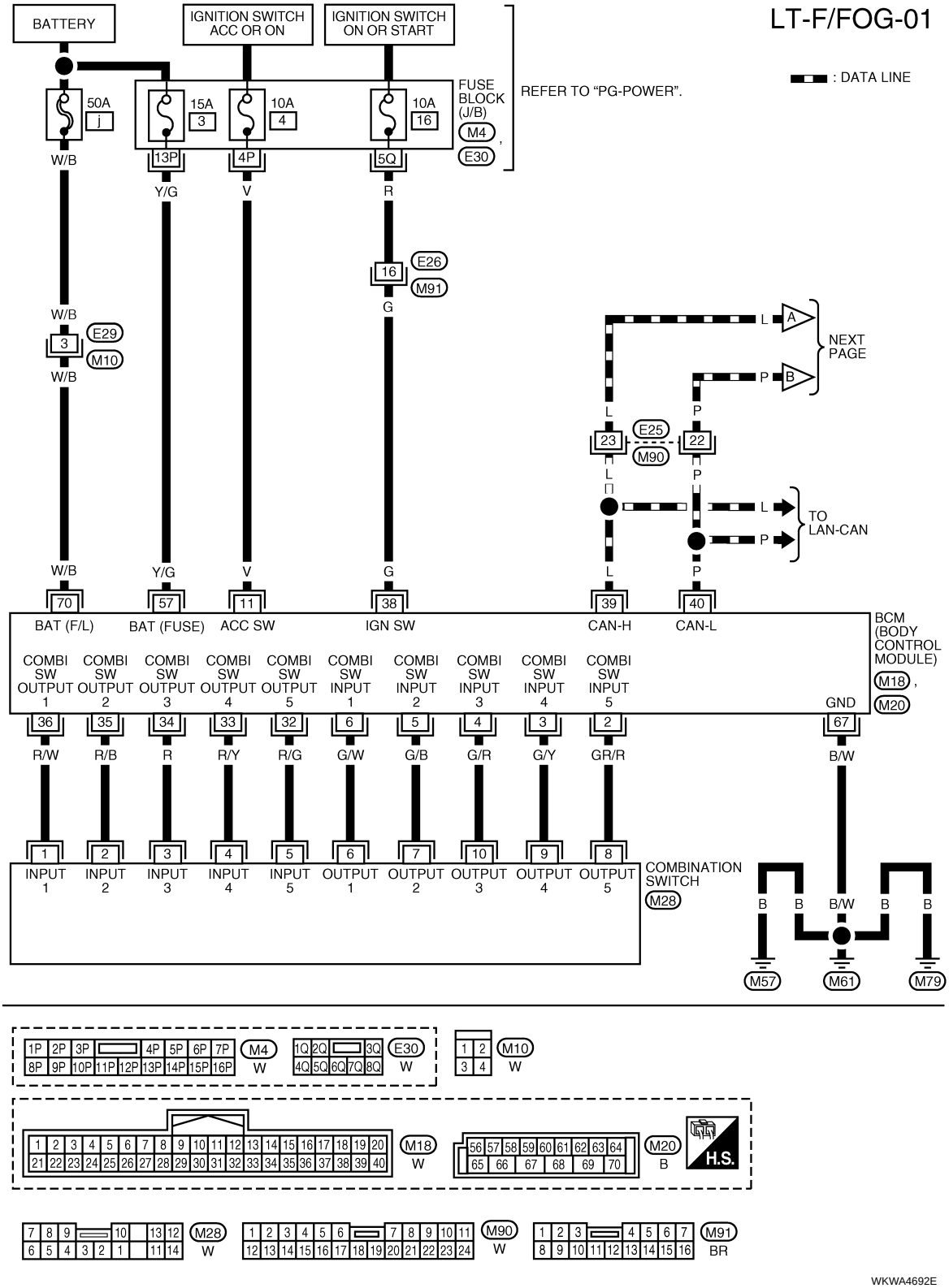
CAN Communication System Description

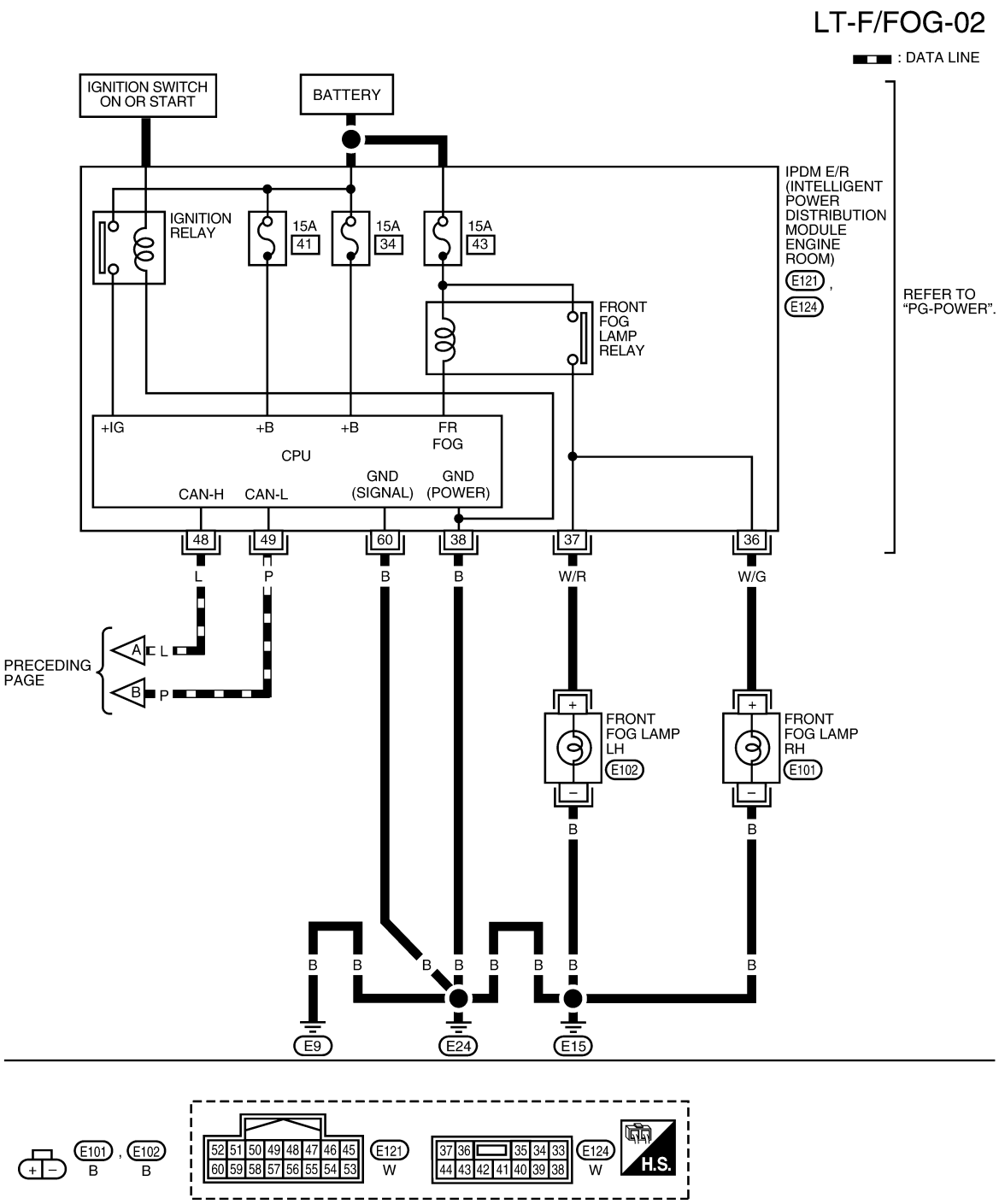
INFOID:0000000004277667

Refer to LAN-3, "CAN Communication System".

Wiring Diagram - F/FOG -

INFOID:0000000004277668





WKWA4693E

Terminal and Reference Value for BCM

INFOID:0000000004277669

Refer to BCS-11, "Terminal and Reference Value for BCM".

Terminal and Reference Value for IPDM E/R

INFOID:0000000004277670

Refer to PG-24, "Terminal and Reference Value for IPDM E/R".

How to Proceed with Trouble Diagnosis

INFOID:0000000004277671

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-47, "System Description".
3. Perform the Preliminary Check. Refer to LT-51, "Preliminary Check".
4. Check symptom and repair or replace the cause of malfunction.
5. Does the front fog lamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

Preliminary Check

INFOID:0000000004277672

CHECK BCM CONFIGURATION

1.CHECK BCM CONFIGURATION

Confirm BCM configuration for "FR FOG LAMP" is set to "WITH". Refer to BCS-17, "Configuration".

OK or NG

OK >> Continue preliminary check. Refer to "CHECK POWER SUPPLY AND GROUND CIRCUIT".
NG >> Change BCM configuration for "FR FOG LAMP" to "WITH". Refer to BCS-17, "Configuration".

CHECK POWER SUPPLY AND GROUND CIRCUIT

Refer to BCS-15, "BCM Power Supply and Ground Circuit Inspection".
Refer to PG-27, "IPDM E/R Power/Ground Circuit Inspection".

CONSULT-III Functions

INFOID:0000000004277673

Refer to LT-12, "CONSULT-III Function (BCM)" in HEADLAMP (FOR USA).
Refer to LT-14, "CONSULT-III Function (IPDM E/R)" in HEADLAMP (FOR USA).

Front Fog Lamps Do Not Illuminate (Both Sides)

INFOID:0000000004277674

1.CHECK COMBINATION SWITCH INPUT SIGNAL

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

When lighting switch is in FOG position : FR FOG SW ON

OK or NG

OK >> GO TO 2.
NG >> Check lighting switch. Refer to LT-81, "Combination Switch Inspection".

2.FOG LAMP ACTIVE TEST

1. Select "IPDM E/R" on CONSULT-III, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "LAMPS" on "SELECT TEST ITEM" screen.
3. Touch "FOG" on "ACTIVE TEST" screen.
4. Make sure fog lamps operate.

Fog lamps should operate.

OK or NG

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

3.CHECK IPDM E/R

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

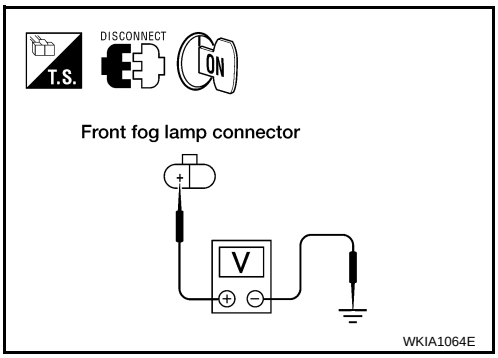
When lighting switch is in FOG position : FR FOG REQ ON

OK or NG

OK >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".
NG >> Replace BCM. Refer to BCS-17, "Removal and Installation of BCM".

4. IPDM E/R INSPECTION

1. Disconnect front fog lamp LH/RH harness connector.
2. Start auto active test. Refer to PG-20, "Auto Active Test". When front fog lamp relay is operating, check voltage between left/right front fog lamp connector terminals and ground.



Front fog lamp		(–)	Voltage (Approx.)
(+)			
Connector	Terminal		
RH E101	+	Ground	Battery voltage
LH E102			

OK or NG

OK >> Check front fog lamp bulbs and replace as necessary.
NG >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".

Front Fog Lamp Does Not Illuminate (One Side)

INFOID:0000000004277675

1. BULB INSPECTION

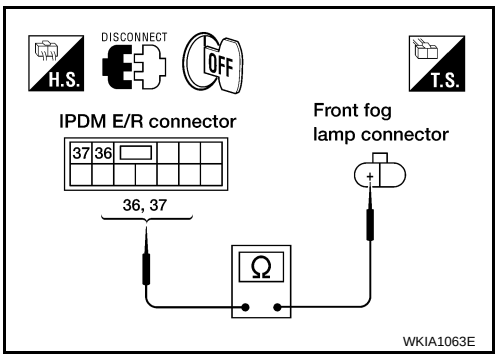
Inspect bulb of lamp which does not illuminate.

OK or NG

OK >> GO TO 2.
NG >> Replace fog lamp bulb. Refer to LT-53, "Bulb Replacement".

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

1. Disconnect IPDM E/R connector and inoperative front fog lamp connector.
2. Check continuity between harness connector terminals of IPDM E/R and inoperative front fog lamp harness connector terminal.



IPDM E/R		Front fog lamp		Continuity
Connector	Terminal	Connector	Terminal	
E124	36	RH E101	+	Yes
	37	LH E102		

OK or NG

OK >> Check ground circuit. If NG, repair harness or connector. If OK, replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".
NG >> Check for short circuits and open circuits in harness between IPDM E/R and inoperative front fog lamp.

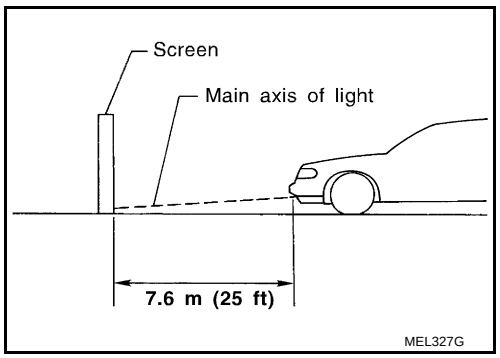
Aiming Adjustment

INFOID:0000000004277676

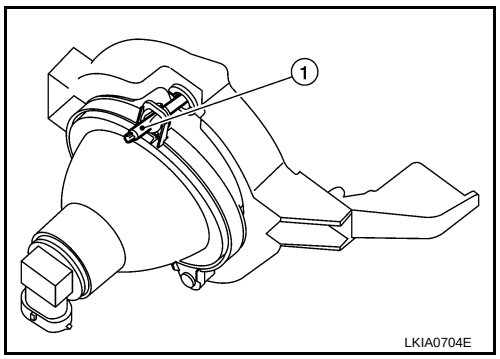
NOTE:

- If vehicle front body has been repaired and /or the fog lamp assembly has been replaced, check fog lamp aiming.
- Before performing aiming adjustment, check the following:
- Ensure all tires are inflated to correct pressure.
- Place vehicle and screen on level surface.
- Ensure there is no load in vehicle other than the driver (or equivalent weight placed in driver's position). Coolant and engine oil is filled to correct level, and fuel tank full.
- Confirm spare tire, jack and tools are properly stowed.

1. Set the distance between the screen and the center of the front fog lamp lens as shown.

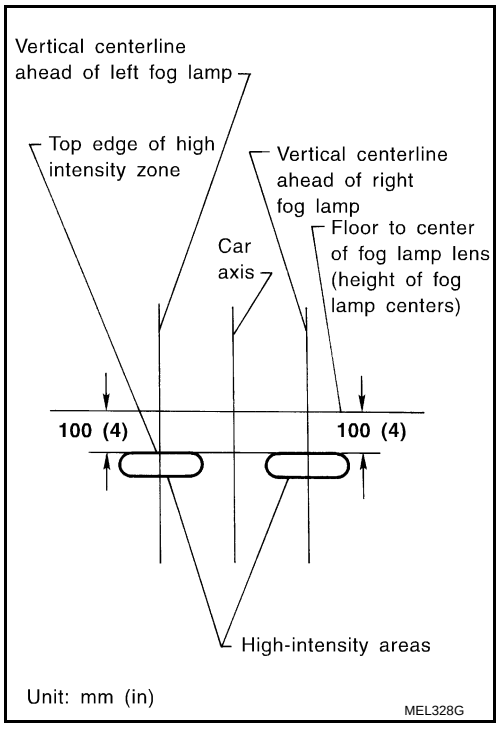


2. Position fender protector aside. Refer to EI-21.
3. Turn front fog lamps ON and adjust front fog lamps using adjusting screw (1) so that the top edge of the high intensity zone is 100 mm (4 in) below the height of the front fog lamp centers as shown.



Bulb Replacement

INFOID:0000000004277677



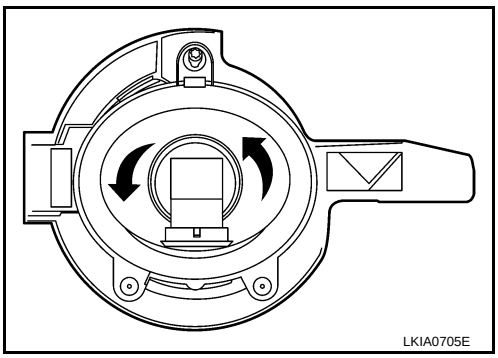
The front fog lamp is a semi-sealed beam type which uses a replaceable halogen bulb.

REMOVAL

CAUTION:

- **Turn fog lamp switch OFF before disconnecting and connecting the connector.**
- **Do not touch bulb by hand while it is lit or right after being turned off. Burning may result.**
- **Grasp only the plastic base when handling the bulb. Never touch the glass envelope. Touching the glass could significantly affect the bulb life and/or fog lamp performance. Keep grease and other oily substances away from bulb.**
- **Do not leave bulb out of fog lamp reflector for a long time because dust, moisture, smoke, etc., may affect the performance of fog lamp. When replacing bulb, be sure to replace it with new one.**

1. Position the front fender protector aside. Refer to EI-21.
2. Disconnect electrical connector.
3. Turn the bulb socket counterclockwise and remove bulb.



INSTALLATION

Installation is in the reverse order of removal.

Front Fog Lamp Assembly

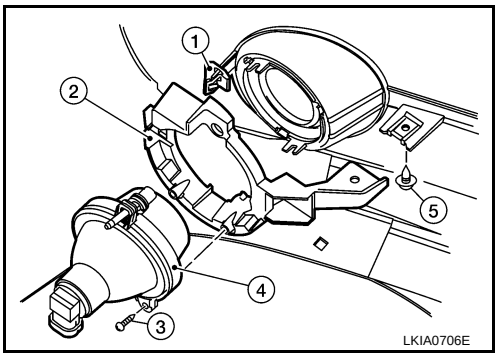
INFOID:0000000004277678

REMOVAL

CAUTION:

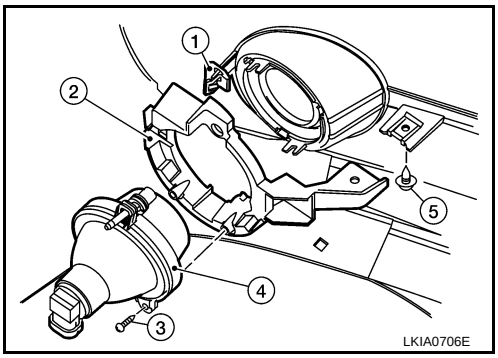
- **Do not touch the glass of bulb directly by hand. Keep grease and other oily substances away from it. Do not touch bulb by hand while it is lit or right after being turned off. Burning may result.**
- **Grasp only the plastic base when handling the bulb. Never touch the glass envelope. Touching the glass could significantly affect the bulb life and/or fog lamp performance.**
- **Do not leave bulb out of fog lamp reflector for a long time because dust, moisture smoke, etc., may affect the performance of fog lamp. When replacing bulb, be sure to replace it with new one.**

1. Position the fender protector aside. Refer to EI-21.
2. Disconnect the electrical connector.
3. Remove the front fog lamp assembly.
   - Remove the screw (5).
   - Pull the bracket (2) toward the rear of vehicle to release the snap clip (1).
   - Remove the front fog lamp screws (3) and remove the front fog lamp housing (4).



INSTALLATION

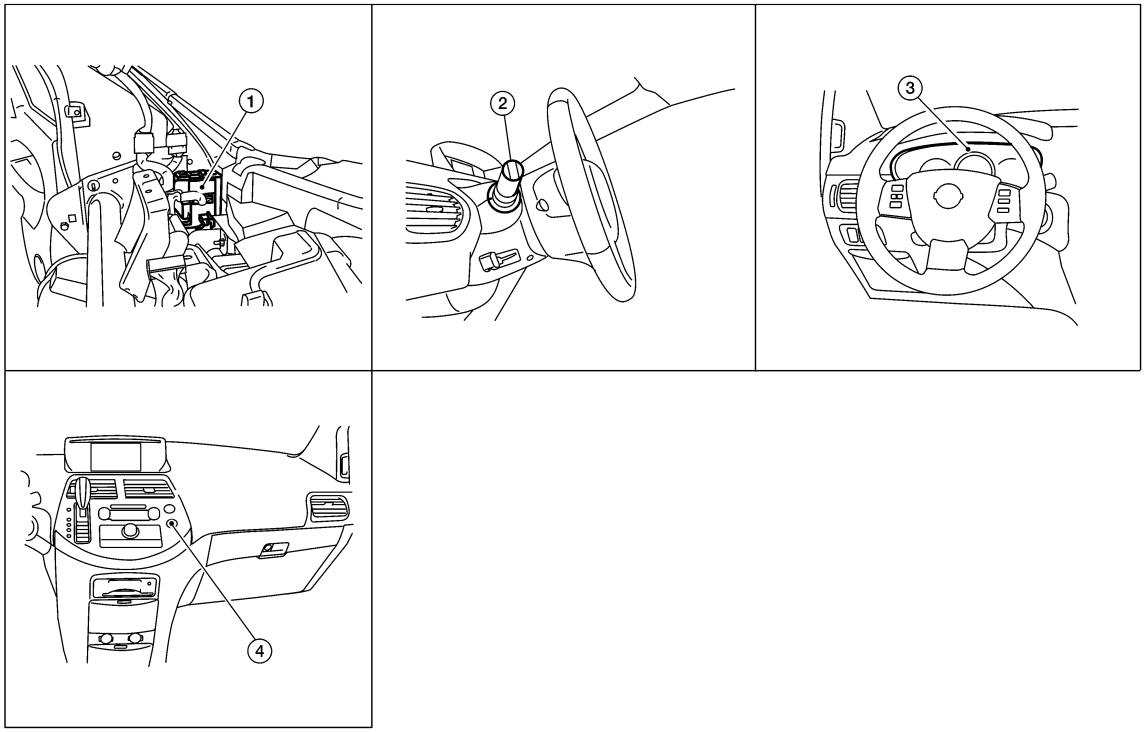
1. Install front fog lamp assembly.
   - Position the front fog lamp housing (4) and install the front fog lamp screws (3).
   - Press the bracket (2) onto the snap clip (1).
   - Install the screws (5).
2. Connect the electrical connector.
3. Verify fog lamp aiming. Refer to LT-52, "Aiming Adjustment".
4. Install the fender protector. Refer to EI-21.



TURN SIGNAL AND HAZARD WARNING LAMPS

Component Parts and Harness Connector Location

INFOID:0000000004277679



WKIA5263E

1. BCM M18, M19, M20 (view with instrument panel removed)
2. Combination switch (lighting switch) M28
3. Combination meter M24
4. Hazard switch M55

System Description

INFOID:0000000004277680

OUTLINE

Power is supplied at all times
- through 50A fusible link (letter **j**, located in the fuse and fusible link box)
- to BCM (body control module) terminal 70, and
- through 15A fuse [No. 3, located in the fuse block (J/B)]
- to BCM terminal 57, and
- through 15A fuse [No. 19, located in the fuse block (J/B)]
- to combination meter terminal 40.

When the ignition switch is in the ON or START position, power is supplied
- through 10A fuse [No. 16, located in the fuse block (J/B)]
- to BCM terminal 38, and
- through 10A fuse [No. 14, located in the fuse block (J/B)]
- to combination meter terminal 38.

When the ignition switch is in the ACC or ON position, power is supplied
- through 10A fuse [No. 4, located in the fuse block (J/B)]
- to BCM terminal 11.

Ground is supplied
- to BCM terminal 67 and
- to combination meter terminal 20
- through grounds M57, M61 and M79.

TURN SIGNAL OPERATION

LH Turn

When the turn signal switch is moved to the left position, the BCM, interpreting it as turn signal is ON, outputs turn signal from BCM terminal 60.
The BCM supplies power
- through BCM terminal 60
- to front combination lamp LH terminal 7
- through front combination lamp LH terminal 6
- to grounds E9, E15 and E24, and
- to rear combination lamp LH terminal 3
- through rear combination lamp LH terminal 5
- to grounds B7 and B19.

BCM sends signal to combination meter through CAN communication lines and turns on turn signal indicator lamp within combination meter.

RH Turn

When the turn signal switch is moved to the right position, the BCM, interpreting it as turn signal is ON, outputs turn signal from BCM terminal 61.
The BCM supplies power
- through BCM terminal 61
- to front combination lamp RH terminal 7
- through front combination lamp RH terminal 6
- to grounds E9, E15 and E24, and
- to rear combination lamp RH terminal 3
- through rear combination lamp RH terminal 5
- to grounds B117 and B132.

BCM sends signal to combination meter through CAN communication lines and turns on turn signal indicator lamp within combination meter.

HAZARD LAMP OPERATION

When the hazard switch is depressed, ground is supplied
- to BCM terminal 29
- through hazard switch terminal 2
- through hazard switch terminal 1
- through grounds M57, M61 and M79.

When the hazard switch is depressed, the BCM, interpreting it as hazard warning lamps are ON, outputs turn signal from BCM terminals 60 and 61.
The BCM supplies power
- through BCM terminals 60 and 61
- to front combination lamp LH and RH terminal 7
- through front combination lamp LH and RH terminal 6
- to grounds E9, E15 and E24, and
- to rear combination lamp LH terminal 3
- through rear combination lamp LH terminal 5
- to grounds B7 and B19, and
- to rear combination lamp RH terminal 3
- through rear combination lamp RH terminal 5
- to grounds B117 and B132.

BCM sends signal to combination meter through CAN communication lines and turns on turn signal indicator lamps within combination meter.

REMOTE KEYLESS ENTRY SYSTEM OPERATION

When the remote keyless entry system is triggered by input from the keyfob, the BCM, interpreting it as turn signal is ON, outputs turn signal from BCM terminals 60 and 61.
The BCM supplies power
- through BCM terminals 60 and 61
- to front combination lamp LH and RH terminal 7
- through front combination lamp LH and RH terminal 6
- to grounds E9, E15 and E24, and
- to rear combination lamp LH terminal 3
- through rear combination lamp LH terminal 5
- to grounds B7 and B19, and
- to rear combination lamp RH terminal 3
- through rear combination lamp RH terminal 5

• to grounds B117 and B132.

BCM sends signal to combination meter through CAN communication lines and turns on turn signal indicator lamps within combination meter.

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

COMBINATION SWITCH READING FUNCTION

Refer to BCS-3, "System Description".

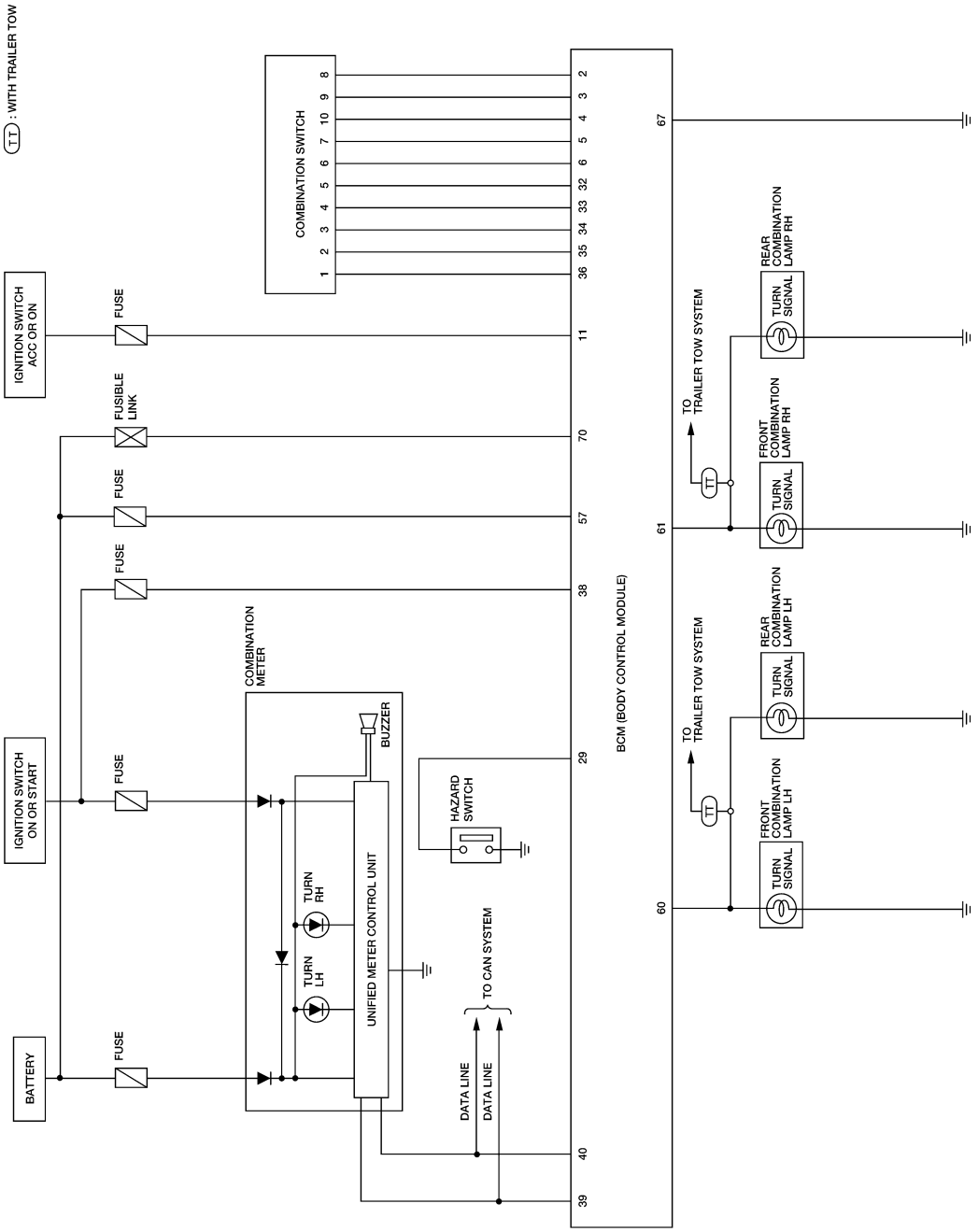
CAN Communication System Description

INFOID:0000000004277681

Refer to LAN-3, "CAN Communication System".

Schematic

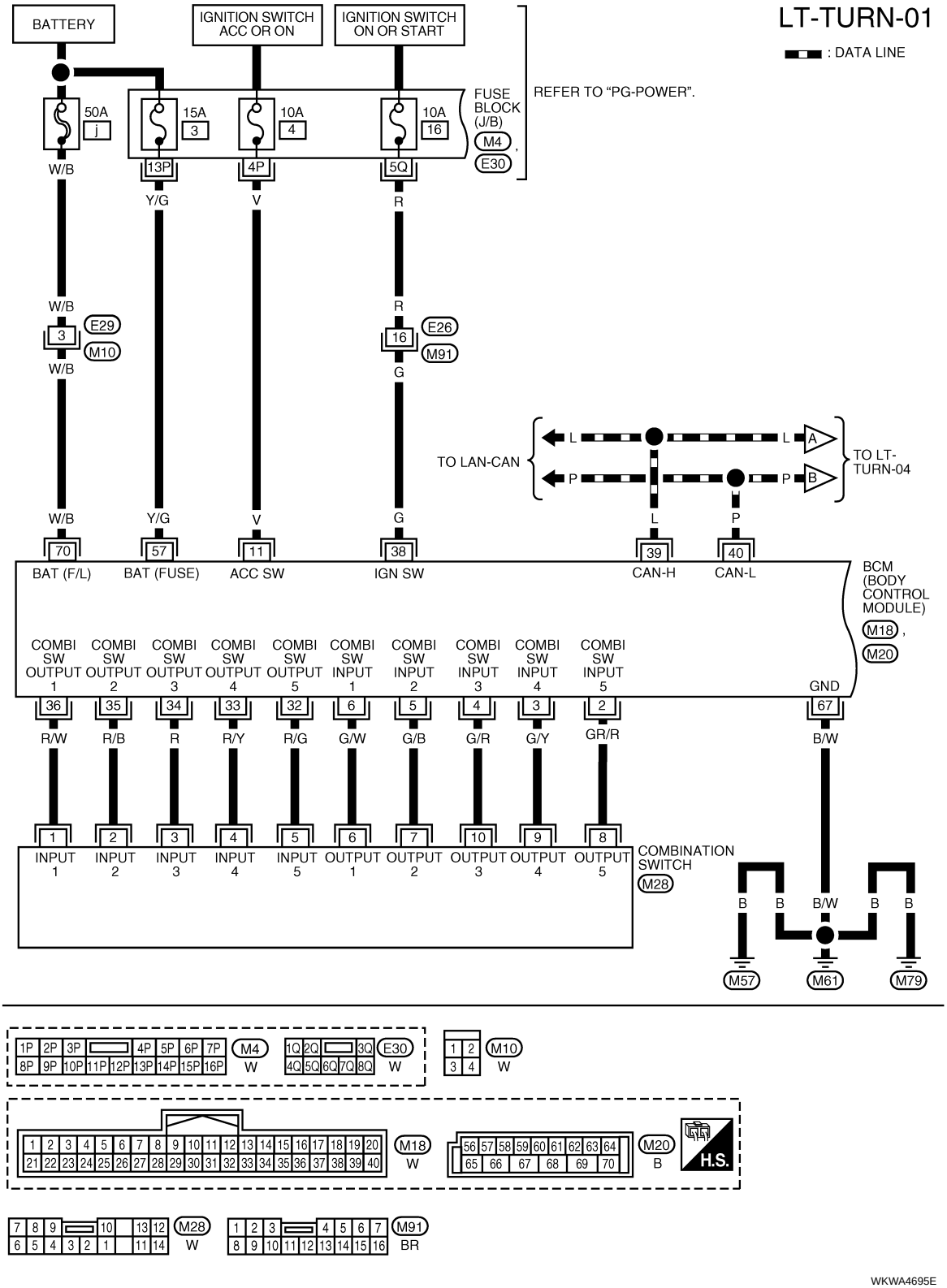
INFOID:0000000004277682



WKWA4694E

Wiring Diagram - TURN -

INFOID:0000000004277683



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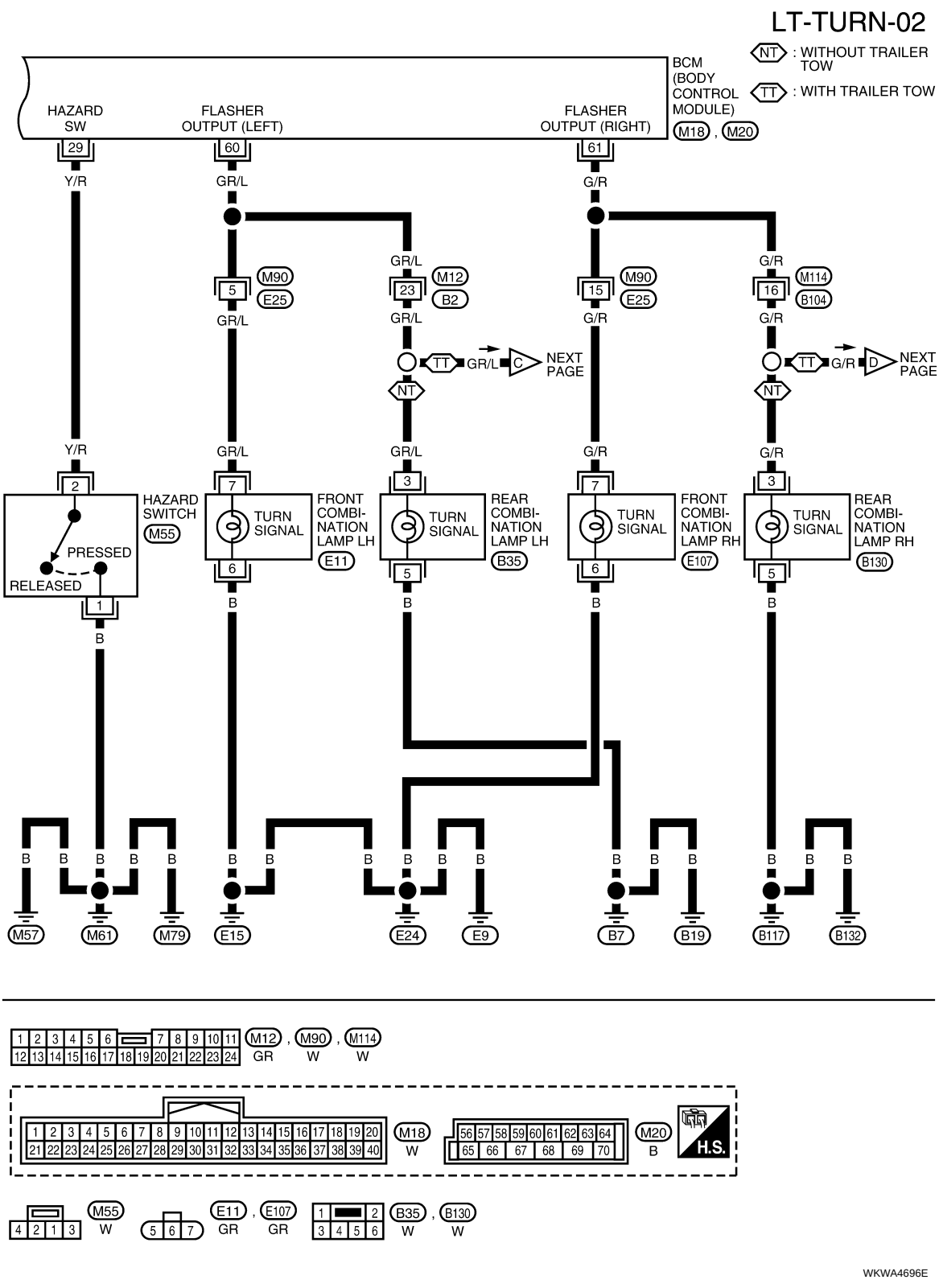
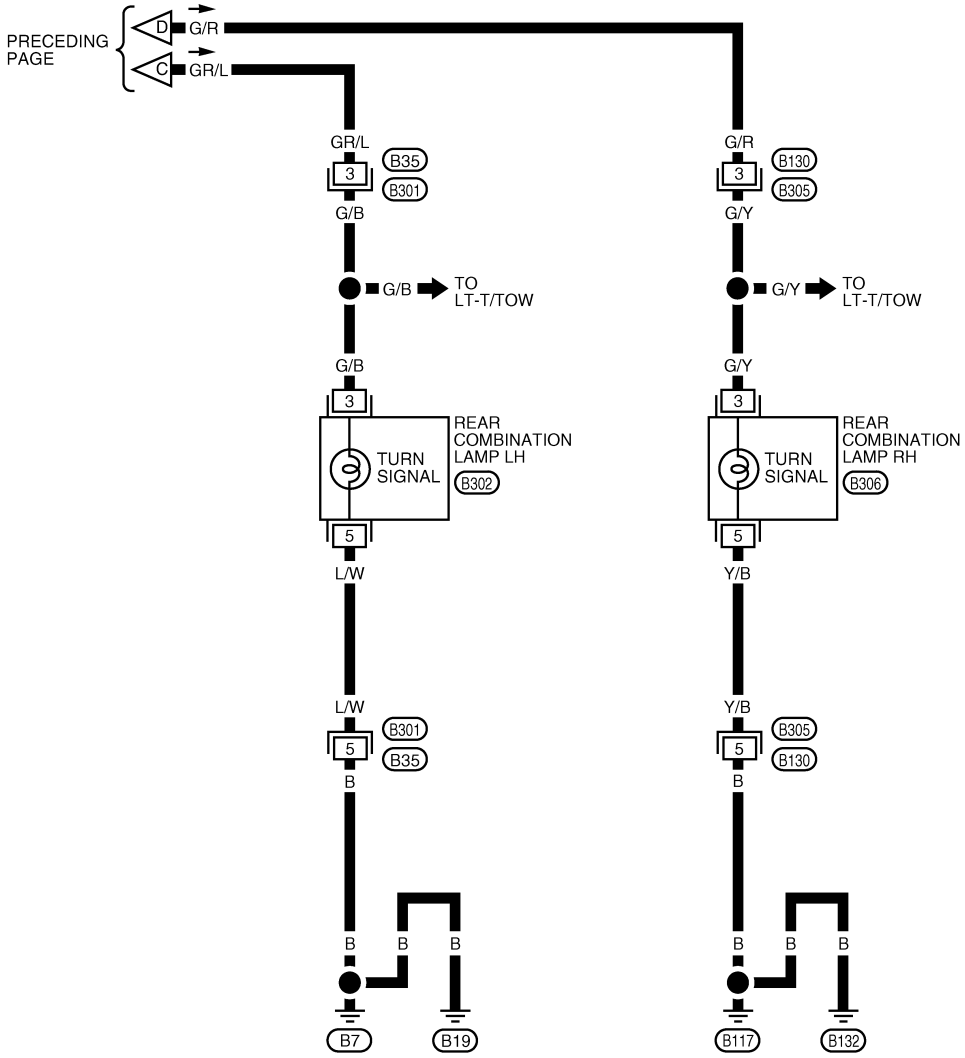
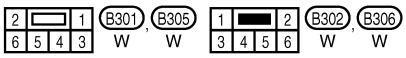

LT-TURN-02
NT : WITHOUT TRAILER TOW
TT : WITH TRAILER TOW
BCM (BODY CONTROL MODULE)
M18 , M20
HAZARD SW
FLASHER OUTPUT (LEFT)
FLASHER OUTPUT (RIGHT)
29
60
61
Y/R
GR/L
G/R
M90
E25
M12
B2
M114
B104
NEXT PAGE
HAZARD SWITCH
M55
PRESSED
RELEASED
TURN SIGNAL
FRONT COMBI-NATION LAMP LH
E11
REAR COMBI-NATION LAMP LH
B35
FRONT COMBI-NATION LAMP RH
E107
REAR COMBI-NATION LAMP RH
B130
M57
M61
M79
E15
E24
E9
B7
B19
B117
B132
M12 , M90 , M114
GR W W
M18
W
M20
B
H.S.
M55
W
E11 , E107
GR GR
B35 , B130
W W
WKWA4696E

LT-TURN-03





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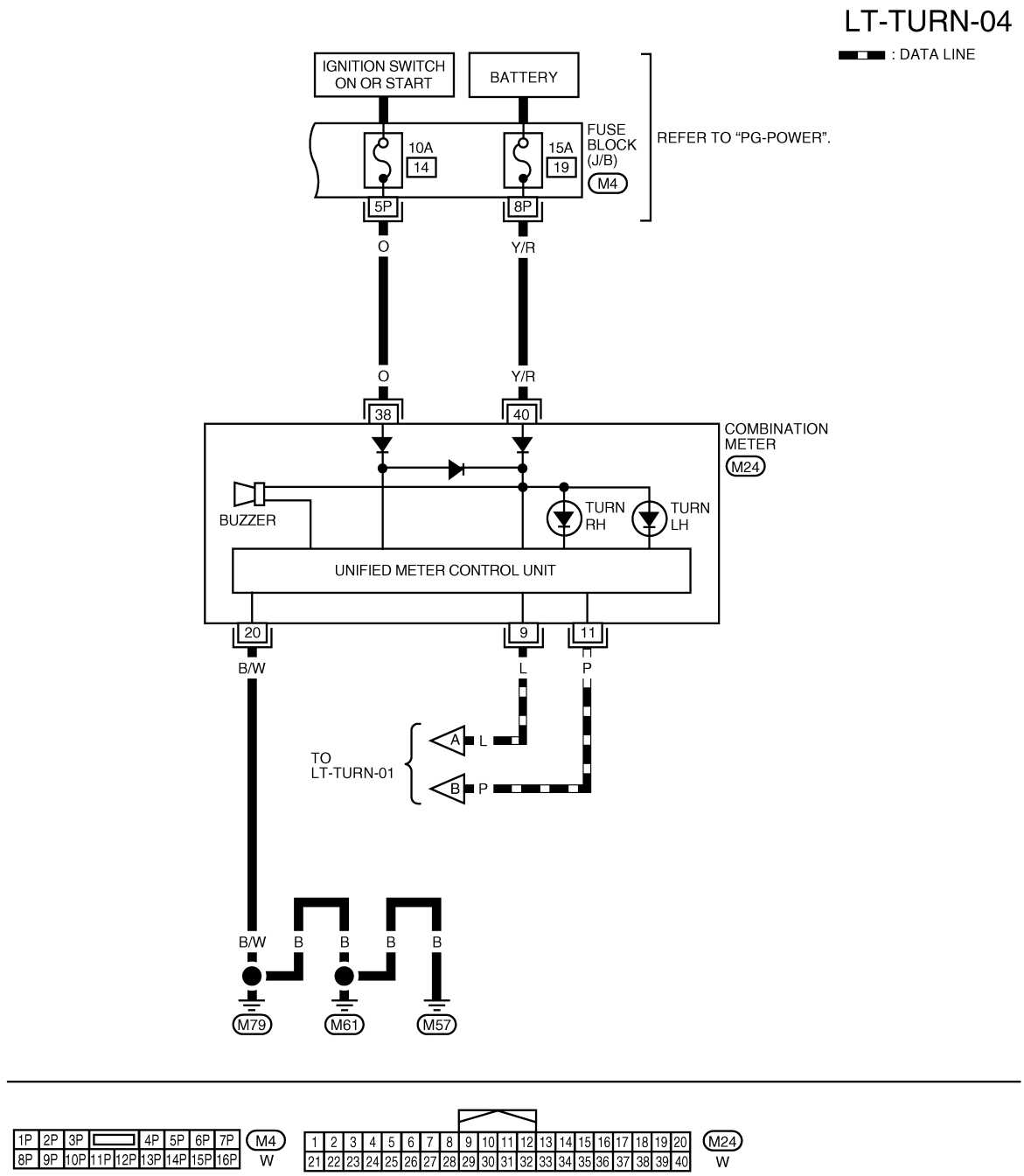


WKWA4698E

Terminal and Reference Value for BCM

INFOID:0000000004277684

Refer to BCS-11, "Terminal and Reference Value for BCM".

How to Proceed with Trouble Diagnosis

INFOID:0000000004277685

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-55, "System Description".

3. Perform preliminary check. Refer to LT-63, "BCM Power Supply and Ground Circuit Inspection".
4. Check symptom and repair or replace the cause of malfunction.
5. Do turn signal and hazard warning lamps operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

BCM Power Supply and Ground Circuit Inspection

INFOID:0000000004277686

Refer to BCS-15, "BCM Power Supply and Ground Circuit Inspection".

CONSULT-III Function (BCM)

INFOID:0000000004277687

CONSULT-III can display each diagnostic item using the diagnostic test modes shown following.

BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.
	DATA MONITOR	Displays BCM input/output data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
	SELF-DIAG RESULTS	Displays BCM self-diagnosis results.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
	ECU PART NUMBER	BCM part number can be read.
	CONFIGURATION	Performs BCM configuration read/write functions.

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 "SELECT MONITOR ITEM" screen.

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

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

Display Item List

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

ACTIVE TEST

Operation Procedure

1. Touch "FLASHER" on "SELECT TEST ITEM" screen.
2. Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Touch item to be tested and check operation of the selected item.

4. During the operation check, touching "BACK" deactivates the operation.

Display Item List

Test item	Description
FLASHER (RH)	Turn signal lamp (RH) can be operated by any ON-OFF operations.
FLASHER (LH)	Turn signal lamp (LH) can be operated by any ON-OFF operations.

Front Turn Signal Lamp Does Not Operate

INFOID:0000000004277688

1.CHECK COMBINATION SWITCH INPUT SIGNAL

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

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

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

Without CONSULT-III
Refer to LT-81, "Combination Switch Inspection".

OK or NG

OK >> GO TO 2.
NG >> Check lighting switch. Refer to LT-81, "Combination Switch Inspection".

2.ACTIVE TEST

With CONSULT-III
1. Select "FLASHER" during active test. Refer to LT-63, "CONSULT-III Function (BCM)".
2. Make sure "FLASHER RH" and "FLASHER LH" operate.

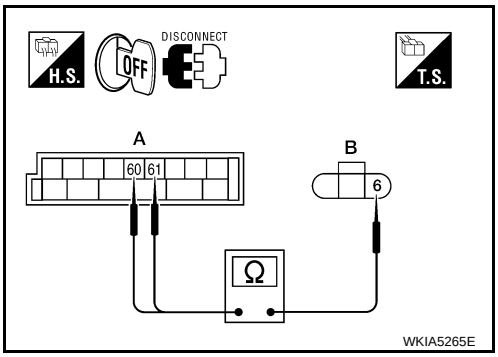
Without CONSULT-III
GO TO 3.

OK or NG

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

3.CHECK TURN SIGNAL LAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and inoperative front combination lamp harness connector.
3. Check continuity between BCM harness connector terminal and inoperative front combination lamp harness connector terminal.



A			B			Continuity
BCM connector		Terminal	Front combination lamp connector		Terminal	
RH	M20	61	RH	E107	6	Yes
LH		60	LH	E11		

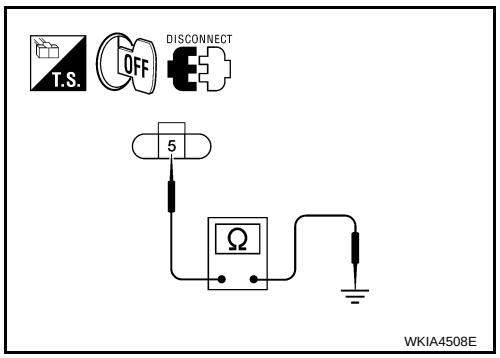
OK or NG

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

4.CHECK GROUND

Check continuity between inoperative front combination lamp harness connector terminal and ground.

Terminals				Continuity
Front combination lamp connector		Terminal		
RH	E107	5	Ground	Yes
LH	E11			



OK or NG

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

5.CHECK BULB

Check bulb standard of each turn signal lamp is correct. Refer to LT-140, "Exterior Lamp".

OK or NG

OK >> Replace BCM if turn signal lamps do not work after setting the connector again. Refer to BCS-17, "Removal and Installation of BCM".
NG >> Replace turn signal lamp bulb. Refer to LT-67, "Bulb Replacement".

Rear Turn Signal Lamp Does Not Operate

INFOID:0000000004277689

1.CHECK TAIL LAMPS AND STOP LAMPS

Check bulb standard of each turn signal lamp is correct. Refer to LT-140, "Exterior Lamp".

OK or NG

OK >> GO TO 2.
NG >> Replace turn signal lamp bulb. Refer to LT-67, "Bulb Replacement".

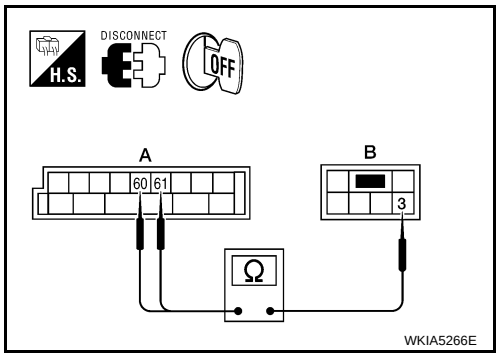
2.CHECK TURN SIGNAL LAMPS CIRCUIT

1. Disconnect BCM connector and rear combination lamp connector.
2. Check continuity between BCM (A) connector M20 terminal 61 and rear combination lamp RH (B) connector B130 (without trailer tow), B306 (with trailer tow) terminal 3.

61 - 3 : Continuity should exist.

3. Check continuity between BCM (A) connector M20 terminal 60 and rear combination lamp LH harness connector B35 (without trailer tow), B302 (with trailer tow) terminal 3.

60 - 3 : Continuity should exist.



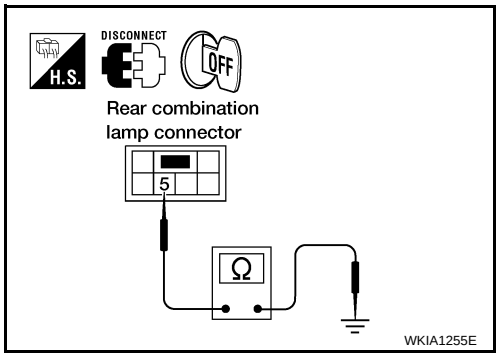
OK or NG

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

3.CHECK GROUND CIRCUIT

Check continuity between rear combination lamp harness connector B35 (without trailer tow), B302 (with trailer tow) LH and B130 (without trailer tow), B306 (with trailer tow) RH terminal 5 and ground.

5 - Ground : Continuity should exist.



OK or NG

OK >> Check rear combination lamp connector for proper connection. Repair as necessary.
NG >> Repair harness or connector.

Hazard Warning Lamp Does Not Operate But Turn Signal Lamp Operates

INFOID:0000000004277690

1. CHECK BULB

Make sure bulb standard of each turn signal lamp is correct. Refer to LT-140, "Exterior Lamp".

OK or NG

OK >> GO TO 2.
NG >> Replace turn signal lamp bulb. Refer to LT-67, "Bulb Replacement" for front turn signal bulb. Refer to LT-67, "Bulb Replacement" for rear turn signal bulb.

2. CHECK HAZARD SWITCH INPUT SIGNAL

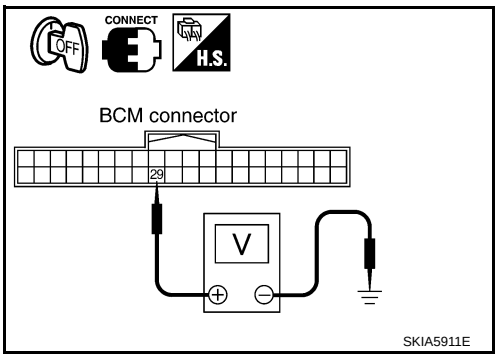
With CONSULT-III

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

When hazard switch is in ON position : HAZARD SW ON

Without CONSULT-III

Check voltage between BCM harness connector M18 terminal 29 and ground.



BCM (+)		(–)	Condition	Voltage (Approx.)
Connector	Terminal			
M18	29	Ground	Hazard switch is ON	0V
			Hazard switch is OFF	5V

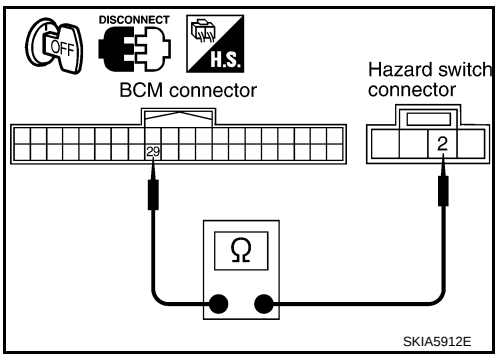
OK or NG

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

3. CHECK HAZARD SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and hazard switch connector.
3. Check continuity between BCM harness connector M18 terminal 29 and hazard switch harness connector M55 terminal 2.

29 - 2 : Continuity should exist.



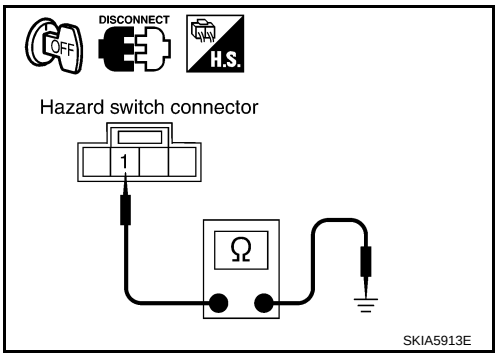
OK or NG

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

4. CHECK GROUND

Check continuity between hazard switch harness connector M55 terminal 1 and ground.

1 - Ground : Continuity should exist.



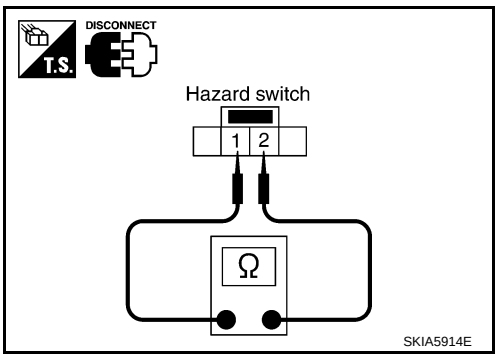
OK or NG

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

5.CHECK HAZARD SWITCH

Check continuity of hazard switch.

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



OK or NG

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

NG >> Replace hazard switch. Refer to LT-78, "Removal and Installation".

Turn Signal Indicator Lamp Does Not Operate

INFOID:0000000004277691

1.CHECK CAN COMMUNICATION SYSTEM

Check CAN communication. Refer to LAN-6, "Condition of Error Detection".

OK or NG

OK >> Replace combination meter. Refer to IP-12, "Combination Meter".

NG >> Repair as necessary.

Bulb Replacement

INFOID:0000000004277692

FRONT TURN SIGNAL LAMP

Refer to LT-22, "Bulb Replacement".

REAR TURN SIGNAL LAMP

Refer to LT-102, "Bulb Replacement".

Removal and Installation

INFOID:0000000004277693

FRONT TURN SIGNAL LAMP

Refer to LT-23, "Removal and Installation".

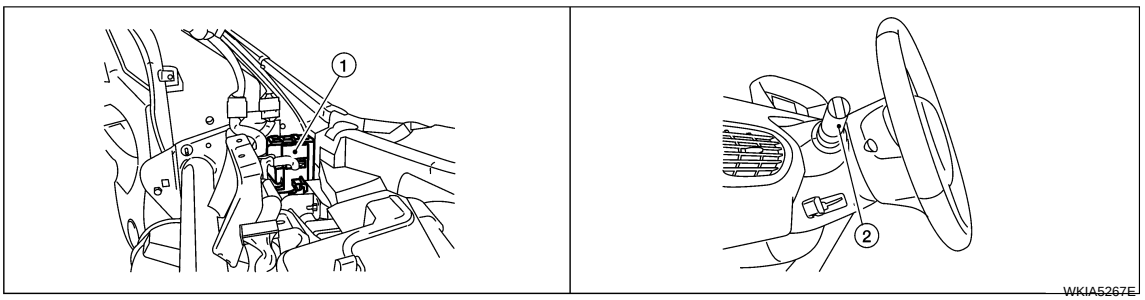
REAR TURN SIGNAL LAMP

Refer to LT-102, "Removal and Installation".

CORNERING LAMP

Component Parts and Harness Connector Location

INFOID:0000000004277694



1. BCM M18, M20 (view with instrument panel removed)
2. Combination switch (lighting switch) M28

System Description

INFOID:0000000004277695

OUTLINE

Power is supplied at all times
- to ignition relay, located in the IPDM E/R, and
- through 50A fusible link (letter **j**, located in the fuse and fusible link box)
- to BCM (body control module) terminal 70, and
- through 15A fuse [No. 3, located in the fuse block (J/B)]
- to BCM terminal 57, and
- through 15A fuse (No. 34, located in the IPDM E/R)
- to CPU (central processing unit) of the IPDM E/R, and
- through 15A fuse (No. 41, located in the IPDM E/R)
- to cornering lamp relay LH and RH, and
- to CPU (central processing unit) of the IPDM E/R.

When the ignition switch is in the ON or START position, power is supplied
- to ignition relay, located in the IPDM E/R, and
- through 10A fuse [No. 16, located in the fuse block (J/B)]
- to BCM terminal 38.

When the ignition switch is in the ACC or ON position, power is supplied
- through 10A fuse [No. 4, located in the fuse block (J/B)]
- to BCM terminal 11.

Ground is supplied
- to BCM terminal 67
- through grounds M57, M61 and M79, and
- to IPDM E/R terminals 38 and 60
- through grounds E9, E15 and E24.

CORNERING LAMP OPERATION

LH Turn

When the lighting switch is in the 2nd position or in the AUTO position (headlamp ON) and turn signal switch is moved to the left position, BCM sends signal through CAN communication lines to IPDM E/R. IPDM E/R then operates cornering lamp relay LH. When this relay is energized, power is supplied
- through IPDM E/R terminal 34
- to front combination lamp LH terminal 9.

Ground is supplied
- to front combination lamp LH terminal 8
- through grounds E9, E15 and E24.

RH Turn

When the lighting switch is in the 2nd position or in the AUTO position (headlamp ON) and turn signal switch is moved to the right position, BCM sends signal through CAN communication lines to IPDM E/R. IPDM E/R then operates cornering lamp relay RH. When this relay is energized, power is supplied

- through IPDM E/R terminal 23
- to front combination lamp RH terminal 9.

Ground is supplied

- to front combination lamp RH terminal 8
- through grounds E9, E15 and E24.

COMBINATION SWITCH READING FUNCTION

Refer to BCS-3, "System Description".

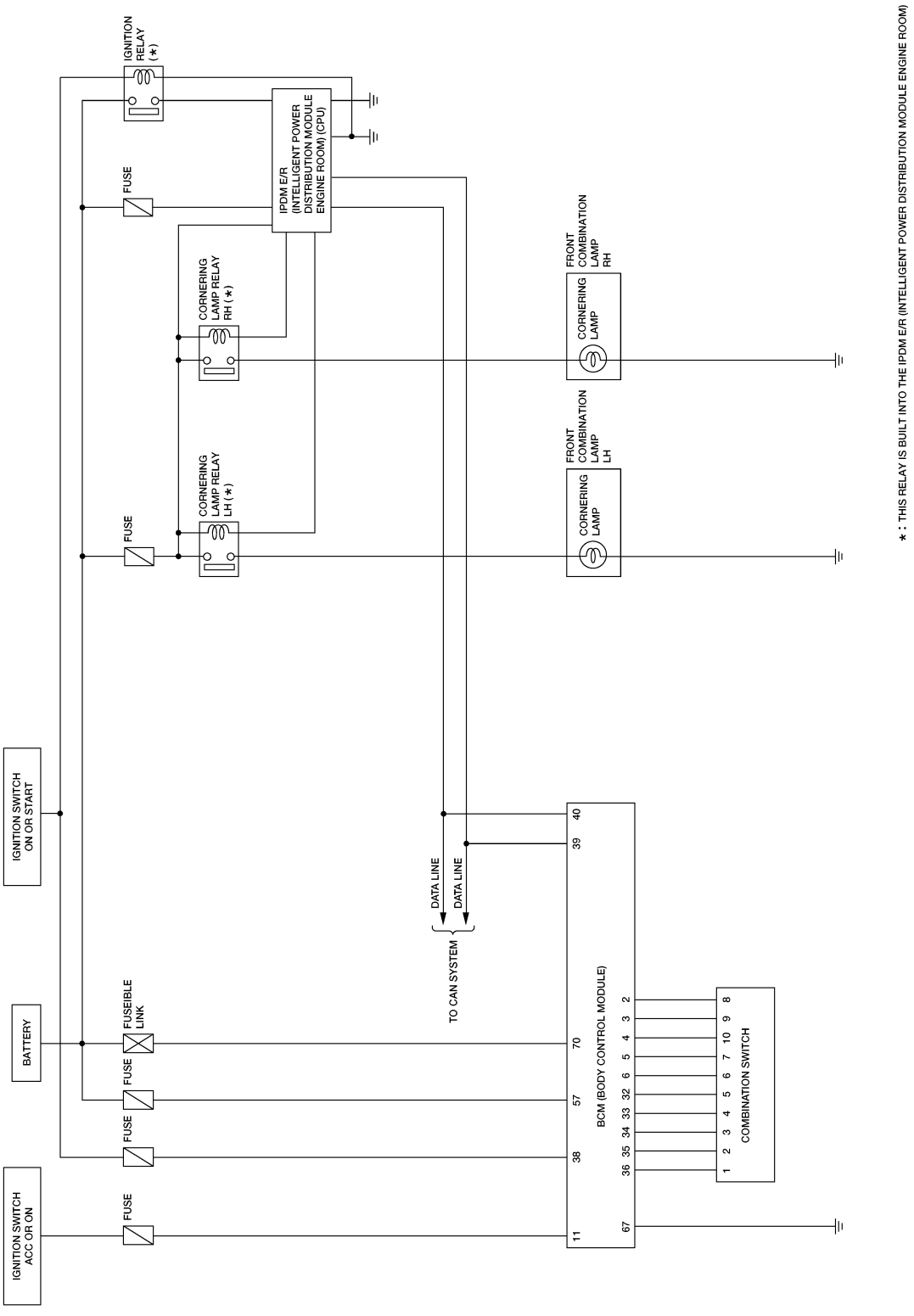
CAN Communication System Description

INFOID:0000000004277696

Refer to LAN-3, "CAN Communication System".

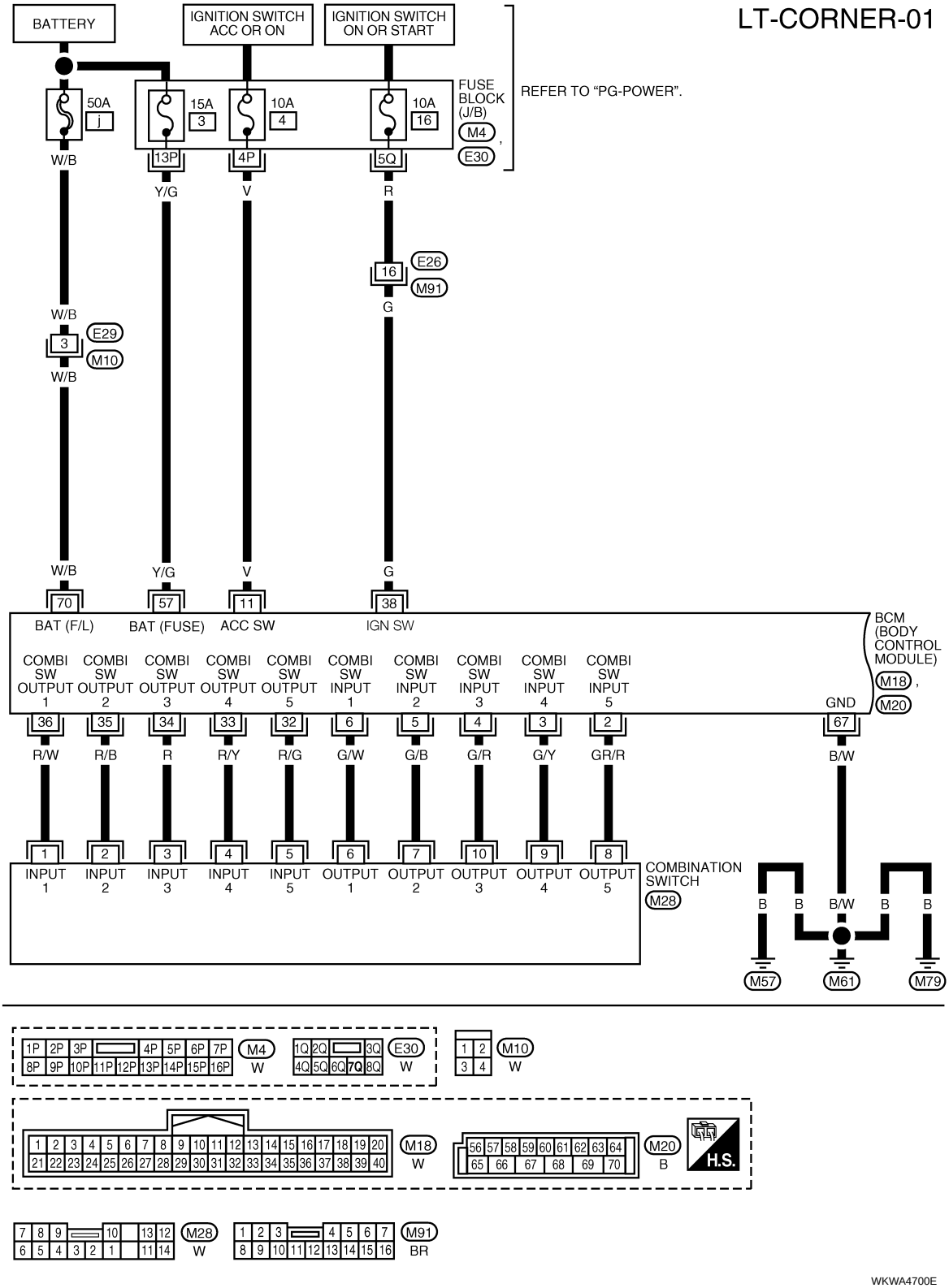
Schematic

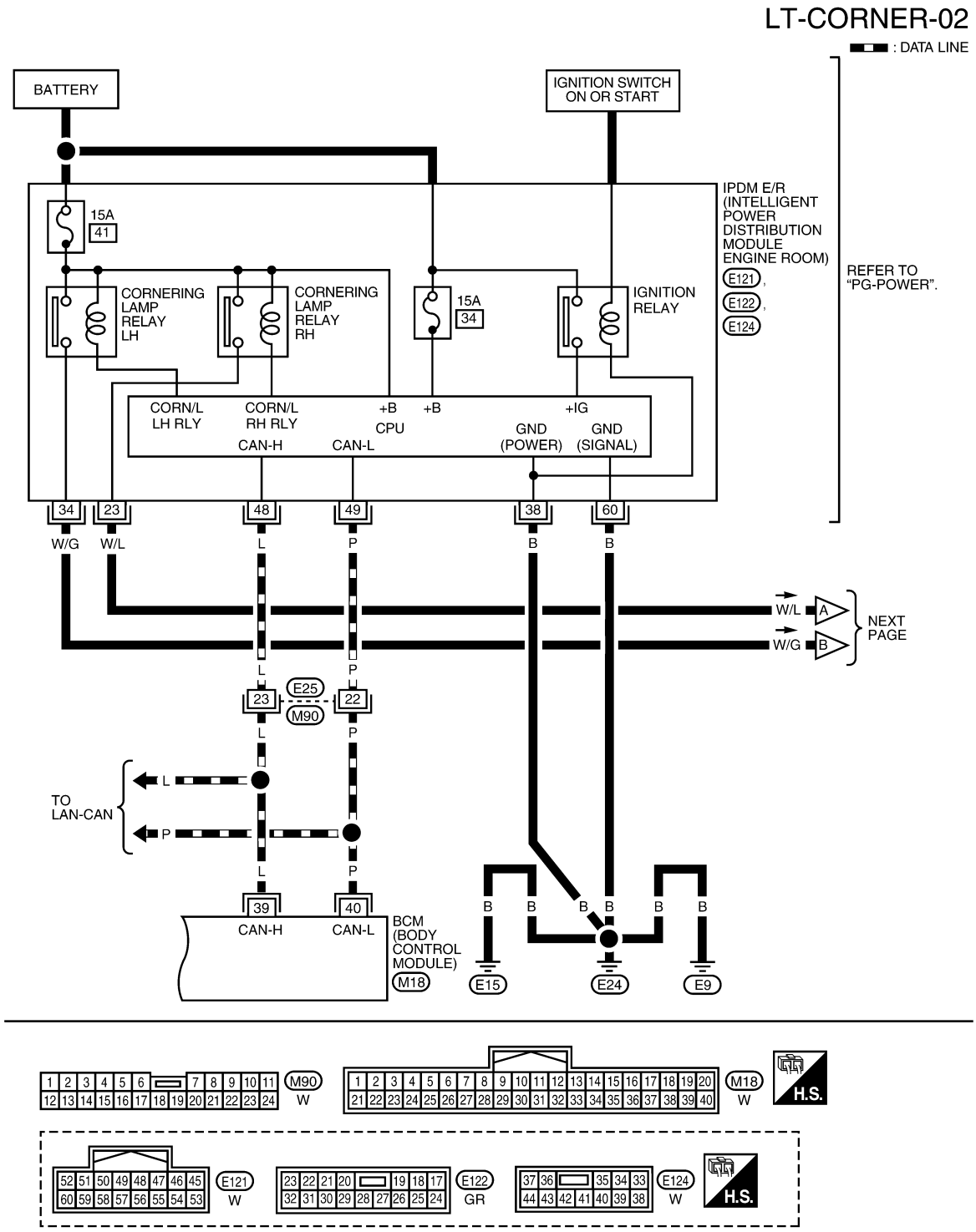
INFOID:0000000004277697



Wiring Diagram - CORNER -

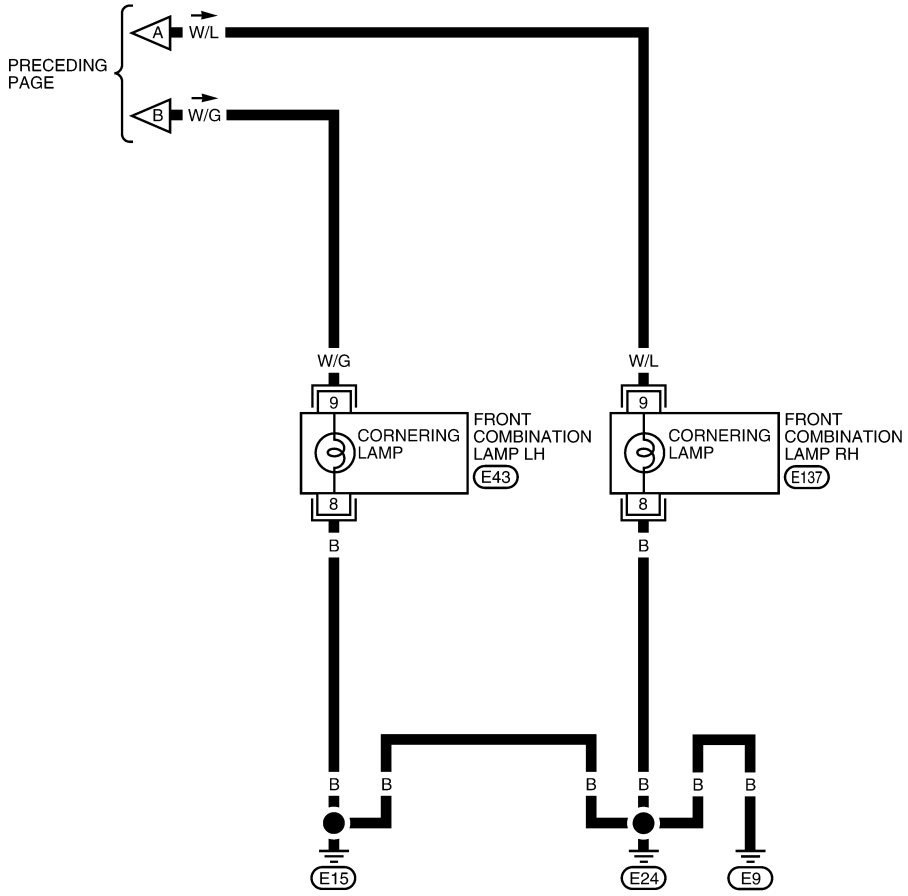
INFOID:0000000004277698

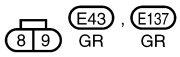




ALLWA0139GB

LT-CORNER-03





ALLWA0140GB

Terminal and Reference Value for BCM

INFOID:0000000004277699

Refer to BCS-11, "Terminal and Reference Value for BCM".

Terminal and Reference Value for IPDM E/R

INFOID:0000000004277700

Refer to PG-24, "Terminal and Reference Value for IPDM E/R".

How to Proceed with Trouble Diagnosis

INFOID:0000000004277701

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-68, "System Description".
3. Perform preliminary check. Refer to LT-74, "Preliminary Check".
4. Check symptom and repair or replace the cause of malfunction.
5. Do turn signal and hazard warning lamps operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

Preliminary Check

INFOID:0000000004277702

CHECK POWER SUPPLY AND GROUND CIRCUIT

Refer to BCS-15, "BCM Power Supply and Ground Circuit Inspection" and PG-27, "IPDM E/R Power/Ground Circuit Inspection"

CONSULT-III Function (IPDM E/R)

INFOID:0000000004277703

CONSULT-III can display each diagnostic item using the diagnostic test modes shown following.

IPDM E/R diagnostic Mode	Description
SELF-DIAG RESULTS	Displays IPDM E/R self-diagnosis results.
DATA MONITOR	Displays IPDM E/R input/output data in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.

DATA MONITOR

Operation Procedure

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

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

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

All Signals, Main Signals, Selection From Menu

Item name	CONSULT–III screen display	Display or unit	Monitor item selection			Description
			ALL SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	
Cornering lamp	CRNRNG LMP REQ	ON/OFF	×	–	×	Signal status input from BCM

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

ACTIVE TEST

Operation Procedure

1. Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Touch "CORNERING LAMP" on "SELECT TEST ITEM" screen.
3. Touch "RH" or "LH" 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
CORNERING LAMP (RH)	Cornering lamp (RH) can be operated by any ON-OFF operations.
CORNERING LAMP (LH)	Cornering lamp (LH) can be operated by any ON-OFF operations.

Cornering Lamp Does Not Operate

INFOID:0000000004277704

1.ACTIVE TEST

With CONSULT-III
1. Select "IPDM E/R" on CONSULT-III, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "CORNERING LAMP" during active test.
3. Select "RH", then "LH" on "ACTIVE TEST" screen.
4. Make sure cornering lamp LH and RH operate.

Without CONSULT-III
GO TO 3.

OK or NG

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

2.CHECK COMBINATION SWITCH INPUT SIGNAL

1. Select "IPDM E/R" on CONSULT-III, and select "DATA MONITOR" on "SELECT DIAG MODE" screen.
2. Make sure "CRNRNG LMP REQ" turns ON-OFF linked with operation of lighting switch.

NOTE:
Lighting switch must not be in OFF position.

When lighting switch is in TURN RH position : CRNRNG LMP REQ R
When lighting switch is in TURN LH position : CRNRNG LMP REQ L

OK or NG

OK >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".
NG >> Replace BCM. Refer to BCS-17, "Removal and Installation of BCM".

3.CHECK BULB

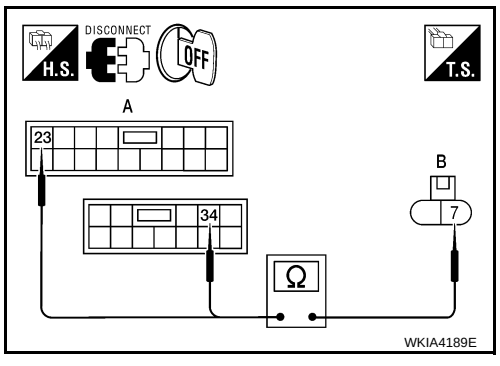
Check bulb standard of each cornering lamp is correct. Refer to LT-140, "Exterior Lamp".

OK or NG

OK >> GO TO 4.
NG >> Replace cornering lamp bulb. Refer to LT-76, "Bulb Replacement".

4.CHECK CORNERING LAMPS CIRCUIT

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



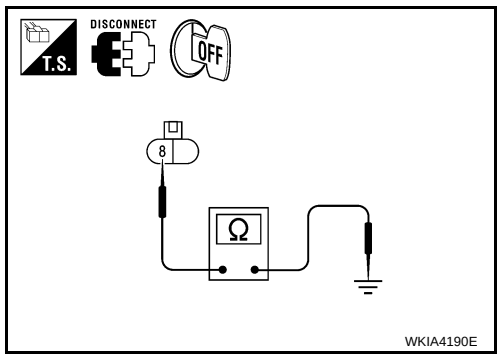
A			B			Continuity
IPDM E/R connector		Terminal	Front combination lamp connector		Terminal	
RH	E122	23	RH	E137	7	Yes
LH	E124	34	LH	E43		

OK or NG

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

5.CHECK GROUND

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



Terminals				Continuity
Front combination lamp connector		Terminal		
RH	E137	8	Ground	No
LH	E43			

OK or NG

OK >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".

NG >> Repair harness or connector.

Bulb Replacement

INFOID:0000000004277705

Refer to "LT-22, "Bulb Replacement"".

Removal and Installation

INFOID:0000000004277706

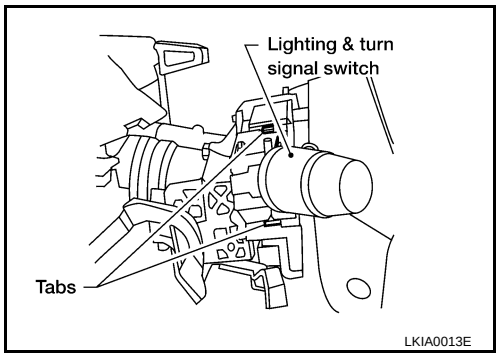
Refer to LT-23, "Removal and Installation".

LIGHTING AND TURN SIGNAL SWITCH

Removal

INFOID:0000000004277707

1. Remove steering column cover. Refer to IP-12, "Steering Column Cover".
2. While pressing tabs, pull lighting and turn signal switch toward driver door and disconnect from the base.



Installation

INFOID:0000000004277708

Installation is in the reverse order of removal.

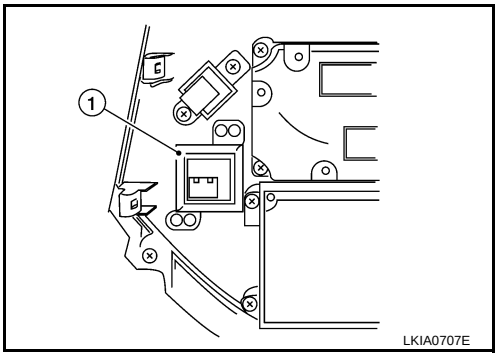
HAZARD SWITCH

Removal and Installation

INFOID:0000000004277709

Removal

1. Remove cluster lid C. Refer to IP-13, "Cluster Lid C".
2. Press tabs and remove hazard switch (1).



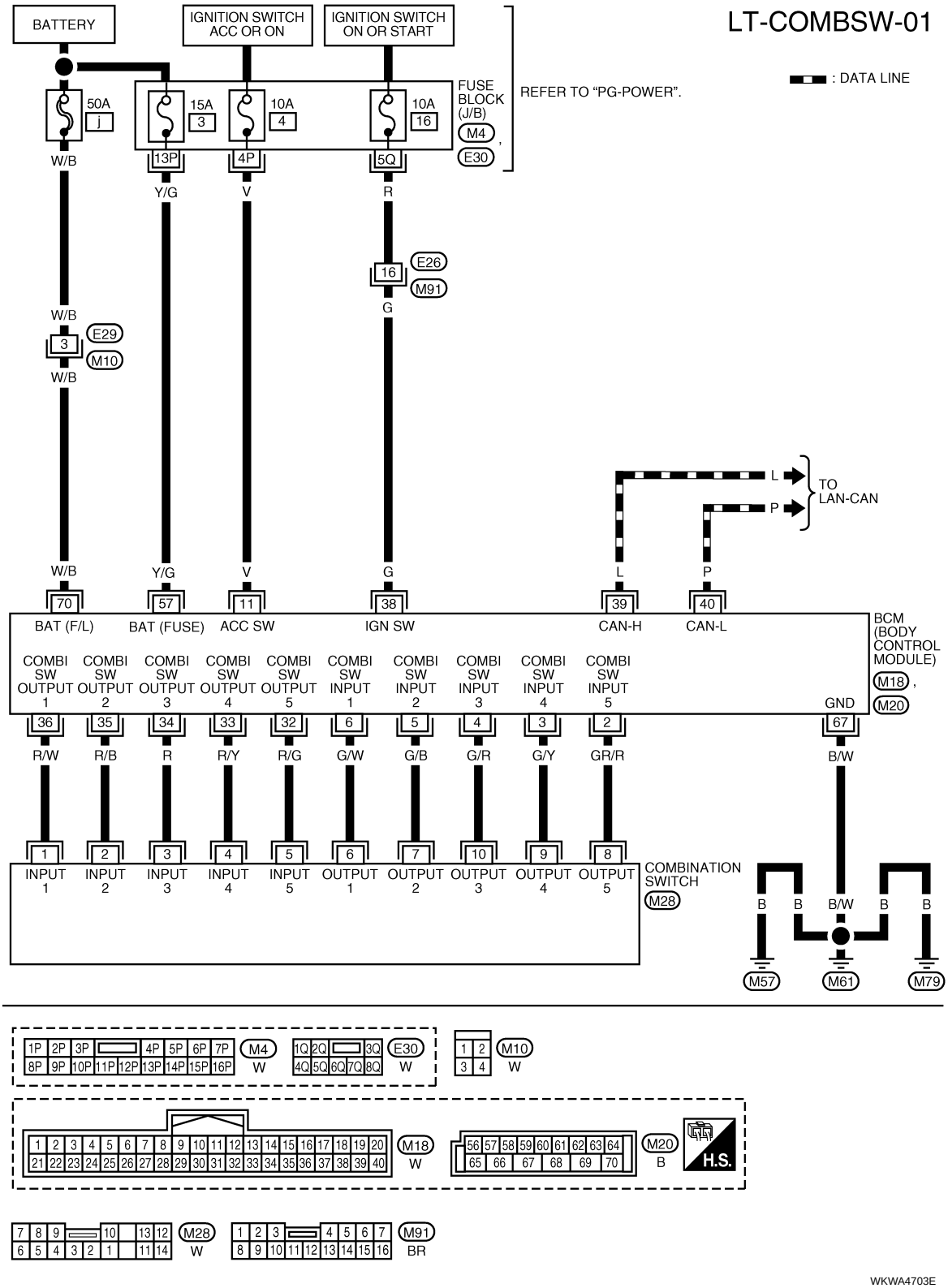
Installation

Installation is in the reverse order of removal.

COMBINATION SWITCH

Wiring Diagram - COMBSW -

INFOID:0000000004277710



WKWA4703E

Combination Switch Reading Function

INFOID:0000000004277711

For details, refer to BCS-3, "System Description".

CONSULT-III Function (BCM)

INFOID:0000000004277712

CONSULT-III can display each diagnostic item using the diagnostic test modes shown following.

BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.
	DATA MONITOR	Displays BCM input/output data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
	SELF-DIAG RESULTS	Displays BCM self-diagnosis results.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
	ECU PART NUMBER	BCM part number can be read.
	CONFIGURATION	Performs BCM configuration read/write functions.

DATA MONITOR

Operation Procedure

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

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

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

Display Item List

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

Monitor item name "OPERATION OR UNIT"		Contents
RR WIPER ON	"ON/OFF"	Displays "Rear Wiper (ON)/(OFF)" status, determined from wiper switch signal.
RR WIPER INT	"ON/OFF"	Displays "Rear Wiper INT (ON)/(OFF)" status, determined from wiper switch signal.
RR WASHER SW	"ON/OFF"	Displays "Rear Washer (ON)/(OFF)" status, determined from wiper switch signal.

Combination Switch Inspection

INFOID:0000000004277713

1.SYSTEM CHECK

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

System 1	System 2	System 3	System 4	System 5
—	FR WASHER	FR WIPER LO	TURN LH	TURN RH
FR WIPER HI	—	FR WIPER INT	PASSING	HEAD LAMP1
INT VOLUME 1	RR WASHER	—	HEAD LAMP2	HI BEAM
RR WIPER INT	INT VOLUME 3	AUTO LIGHT	—	TAIL LAMP
INT VOLUME 2	RR WIPER ON	—	FR FOG	—

>> GO TO 2.

2.SYSTEM CHECK

With CONSULT-III

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

Without CONSULT-III

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

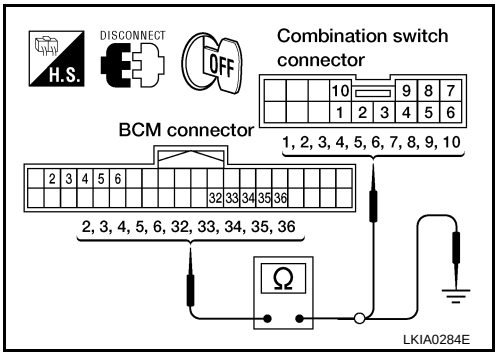
Check results

Other switches in malfunctioning system operate normally.>>Replace lighting switch or wiper switch.
Other switches in malfunctioning system do not operate normally.>>GO TO 3.

3.HARNESS INSPECTION

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

Suspect system	BCM			Combination switch		Continuity
	Connector	Terminal		Connector	Terminal	
1	M18	Input 1	6	M28	6	Yes
		Output 1	36		1	
2		Input 2	5		7	
		Output 2	35		2	
3		Input 3	4		10	
		Output 3	34		3	
4		Input 4	3		9	
		Output 4	33		4	
5		Input 5	2		8	
		Output 5	32		5	



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

Suspect system	BCM				Continuity
	Connector	Terminal			
1	M18	Input 1	6	Ground	No
		Output 1	36		
2		Input 2	5		
		Output 2	35		
3		Input 3	4		
		Output 3	34		
4		Input 4	3		
		Output 4	33		
5		Input 5	2		
		Output 5	32		

OK or NG

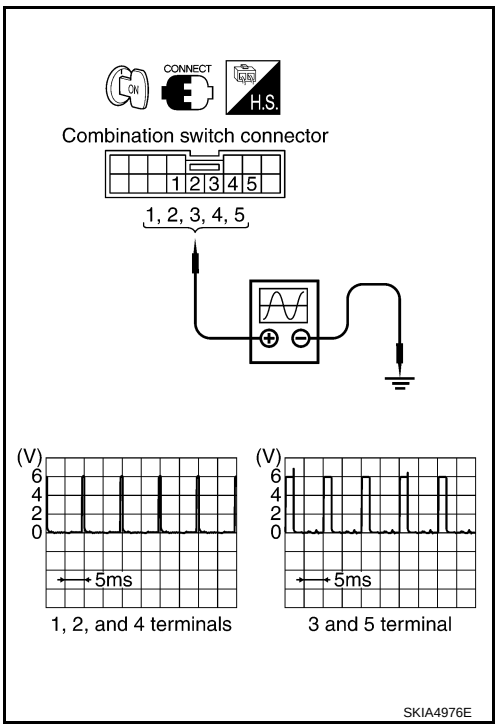
OK >> GO TO 4.
NG >> Check harness between BCM and combination switch for open or short circuit.

4. BCM OUTPUT TERMINAL INSPECTION

1. Turn lighting switch and wiper switch to OFF.
2. Set wiper dial to position 4.
3. Connect BCM and combination switch connectors.

4. Turn ignition switch ON, and check combination switch input (BCM output) terminal voltage waveform of suspect malfunctioning system.

Suspect system	Combination switch (+)		
	Connector	Terminal	
1	M28	Input 1	1
2		Input 2	2
3		Input 3	3
4		Input 4	4
5		Input 5	5



OK or NG

OK >> Open circuit in combination switch, GO TO 5.
NG >> Replace BCM. Refer to BCS-17, "Removal and Installation of BCM".

5. COMBINATION SWITCH INSPECTION

Referring to table below, perform combination switch inspection.

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

>> Inspection End.

Removal and Installation

INFOID:0000000004277714

Refer to LT-77, "Removal".

Switch Circuit Inspection

INFOID:0000000004277715

Refer to LT-81, "Combination Switch Inspection".

STOP LAMP

System Description

INFOID:0000000004277716

Power is supplied at all times
- through 10A fuse [No. 20, located in fuse block (J/B)]
- to stop lamp switch terminal 1.

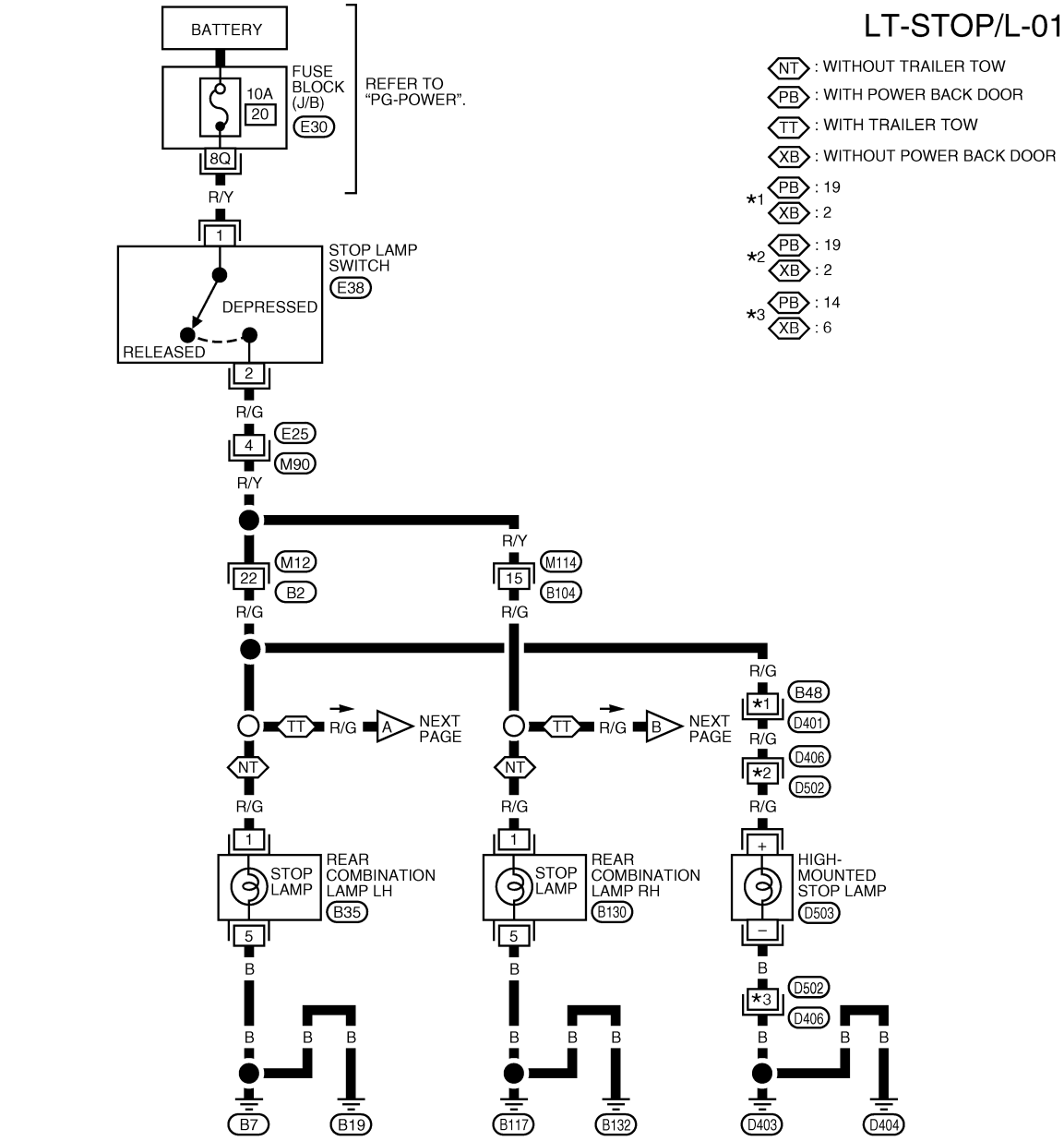
When the brake pedal is pressed, the stop lamp switch is closed and power is supplied
- through stop lamp switch terminal 2
- to rear combination lamp LH and RH terminal 1, and
- to high-mounted stop lamp terminal +.

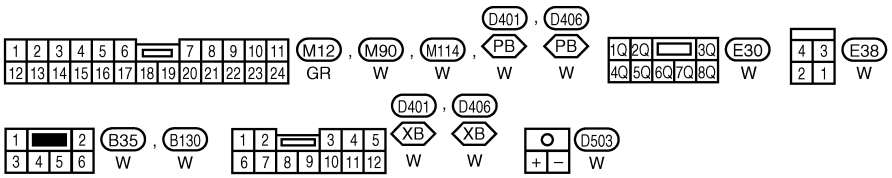
Ground is supplied
- to rear combination lamp LH terminal 5
- through grounds B7 and B19, and
- to rear combination lamp RH terminal 5
- through grounds B117 and B132, and
- to high-mounted stop lamp terminal –
- through grounds D403 and D404.

With power and ground supplied, the stop lamps illuminate.

Wiring Diagram - STOP/L -

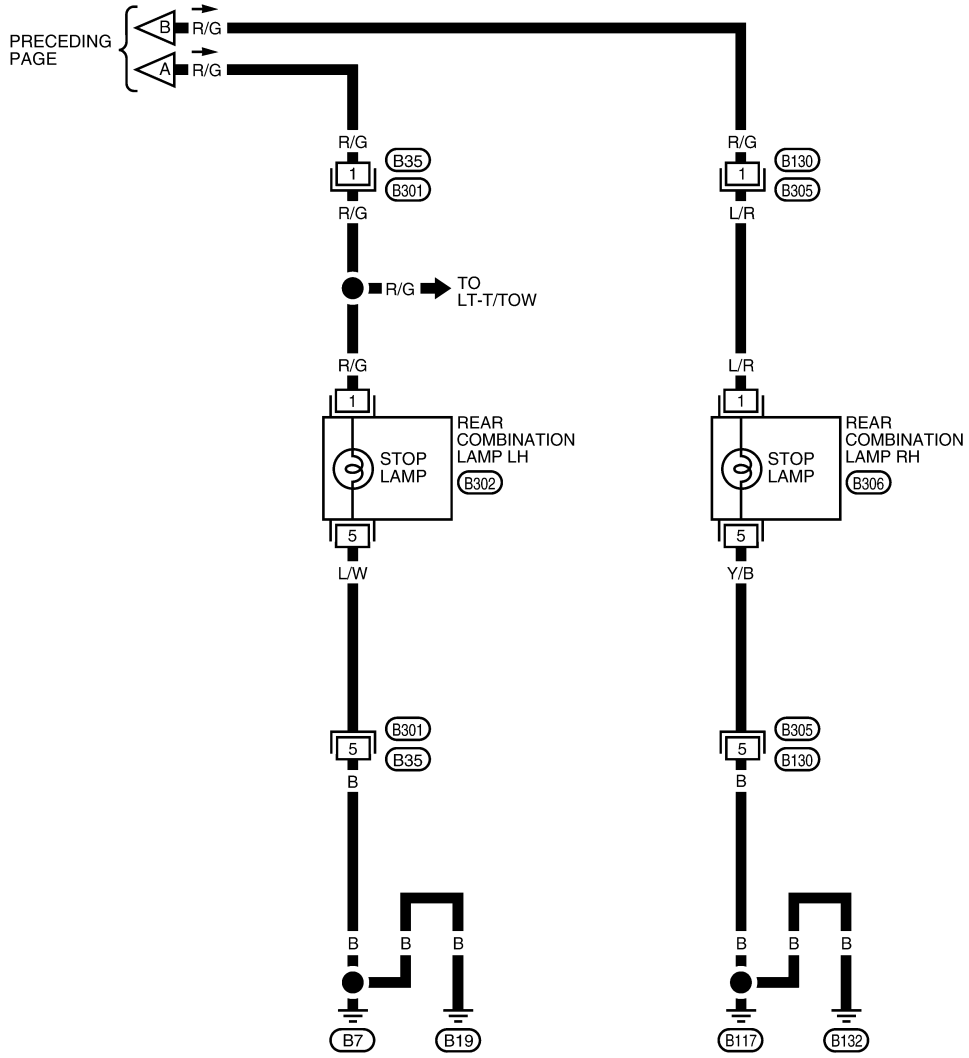
INFOID:0000000004277717

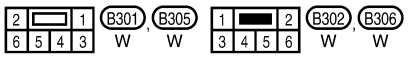




WKWA4704E

LT-STOP/L-02





WKWA4705E

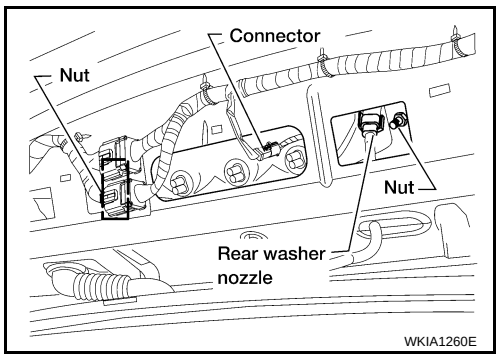
Bulb Replacement

INFOID:0000000004277718

HIGH-MOUNTED STOP LAMP

Removal

1. Remove the rear washer nozzle. Refer to WW-36, "Rear Washer Nozzle".
2. Disconnect the electrical connector.
3. Remove the nuts and remove the high-mounted stop lamp.
4. Turn the bulb socket counterclockwise to remove it from the high-mounted stop lamp housing.
5. Pull the bulb from the socket.



Installation
Installation is in the reverse order of removal.

STOP LAMP
Refer to LT-102, "Bulb Replacement".

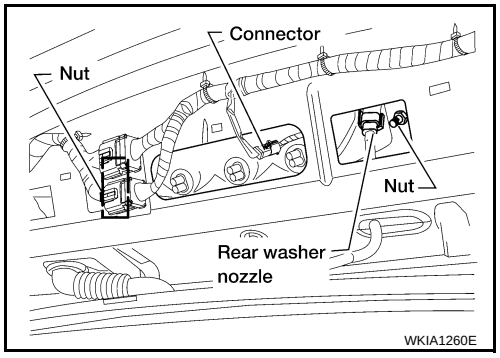
Removal and Installation

INFOID:0000000004277719

HIGH-MOUNTED STOP LAMP

Removal

1. Remove the rear washer nozzle. Refer to WW-36, "Rear Washer Nozzle".
2. Disconnect the electrical connector.
3. Remove the nuts and remove the high-mounted stop lamp.



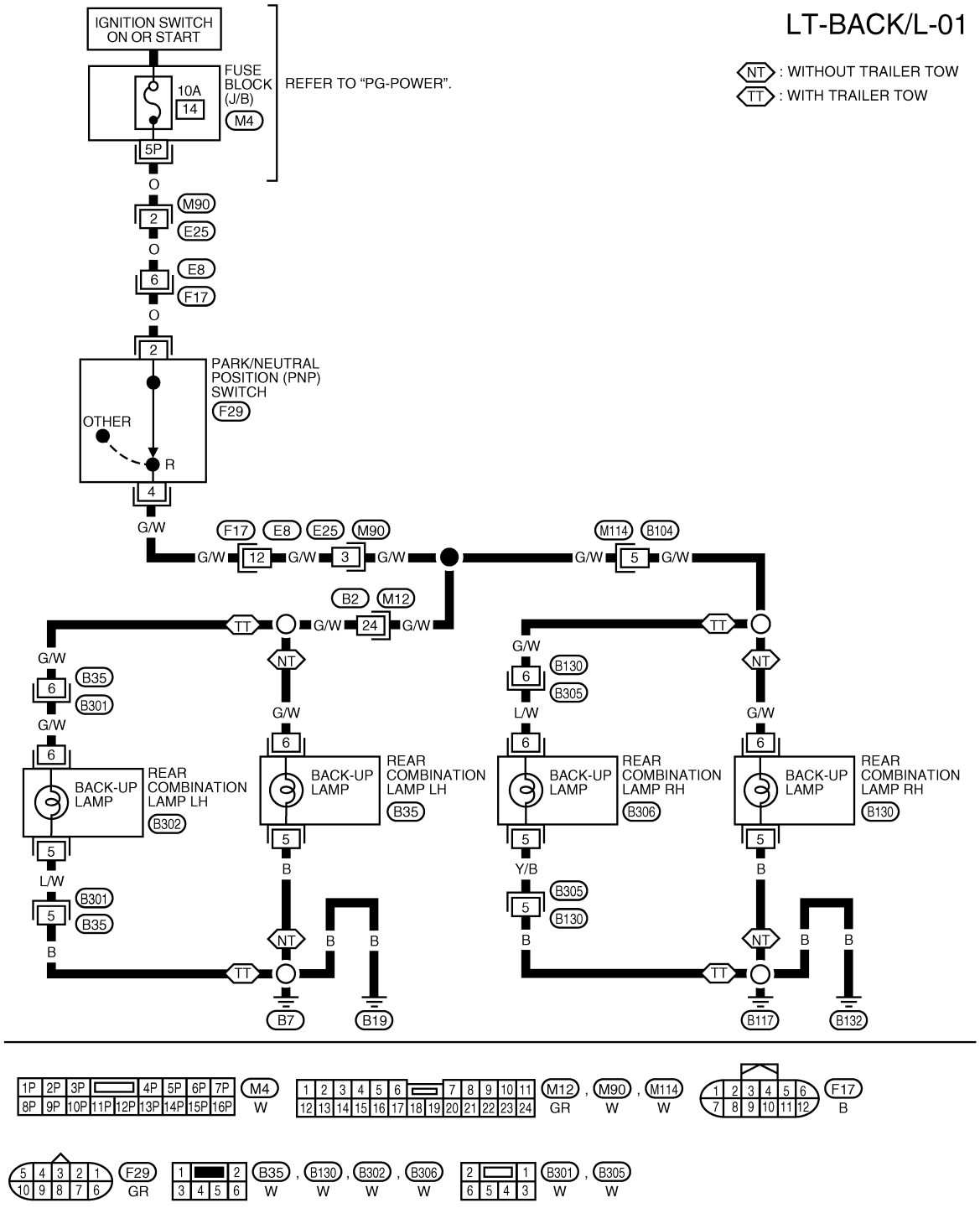
Installation
Installation is in the reverse order of removal.

STOP LAMP
Refer to LT-102, "Removal and Installation".

BACK-UP LAMP

Wiring Diagram - BACK/L -

INFOID:0000000004277720



WKWA4706E

Bulb Replacement

INFOID:0000000004277721

Refer to LT-102, "Bulb Replacement".

Removal and Installation

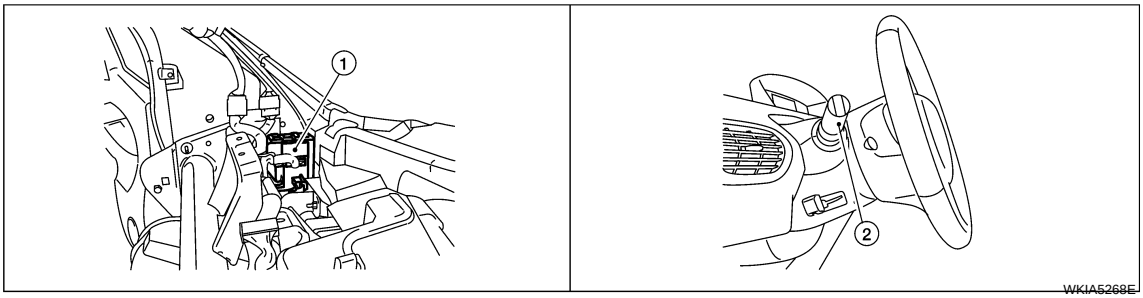
INFOID:0000000004277722

Refer to LT-102, "Removal and Installation".

PARKING, LICENSE PLATE AND TAIL LAMPS

Component Parts and Harness Connector Location

INFOID:0000000004277723



1. BCM M18, M20 (view with instrument panel removed)
2. Combination switch (lighting switch) M28

System Description

INFOID:0000000004277724

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 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 controls the tail lamp relay coil. This relay, when energized, directs power to the parking, license plate and tail lamps, which then illuminate.

Power is supplied at all times
- to ignition relay, located in the IPDM E/R, and
- through 15A fuse (No. 41, located in the IPDM E/R)
- to tail lamp relay, located in the IPDM E/R, and
- to CPU of the IPDM E/R, and
- through 15A fuse (No. 34 located in the IPDM E/R)
- to CPU of the IPDM E/R, and
- through 50A fusible link (letter **j**, located in the fuse and fusible link box)
- to BCM terminal 70, and
- through 15A fuse [No. 3, located in the fuse block (J/B)]
- to BCM terminal 57.

With the ignition switch in the ON or START position, power is supplied
- to ignition relay, located in the IPDM E/R, and
- through 10A fuse [No. 16, located in the fuse block (J/B)]
- to BCM terminal 38.

With the ignition switch in the ACC or ON position, power is supplied
- through 10A fuse [No. 4, located in the fuse block (J/B)]
- to BCM terminal 11.

Ground is supplied
- to BCM terminal 67
- through grounds M57, M61 and M79, and
- to IPDM E/R terminals 38 and 60
- through grounds E9, E15 and E24.

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 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 22
- to front combination lamp LH and RH terminal 5
- to license plate lamp LH and RH terminal +
- to rear combination lamp LH and RH terminal 2.

Ground is supplied

- to front combination lamp LH and RH terminal 6
- through grounds E9, E15 and E24, and
- to license plate lamp LH and RH terminal –
- through grounds D403 and D404, and
- to rear combination lamp LH terminal 5
- through grounds B7 and B19, and
- to rear combination lamp RH terminal 5
- through grounds B117 and B132.

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

COMBINATION SWITCH READING FUNCTION

Refer to BCS-3, "System Description".

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 and tail lamps remain illuminated for 5 minutes, then the parking, license plate and tail lamps are turned off.
Exterior lamp battery saver control mode can be changed by the function setting of CONSULT-III.

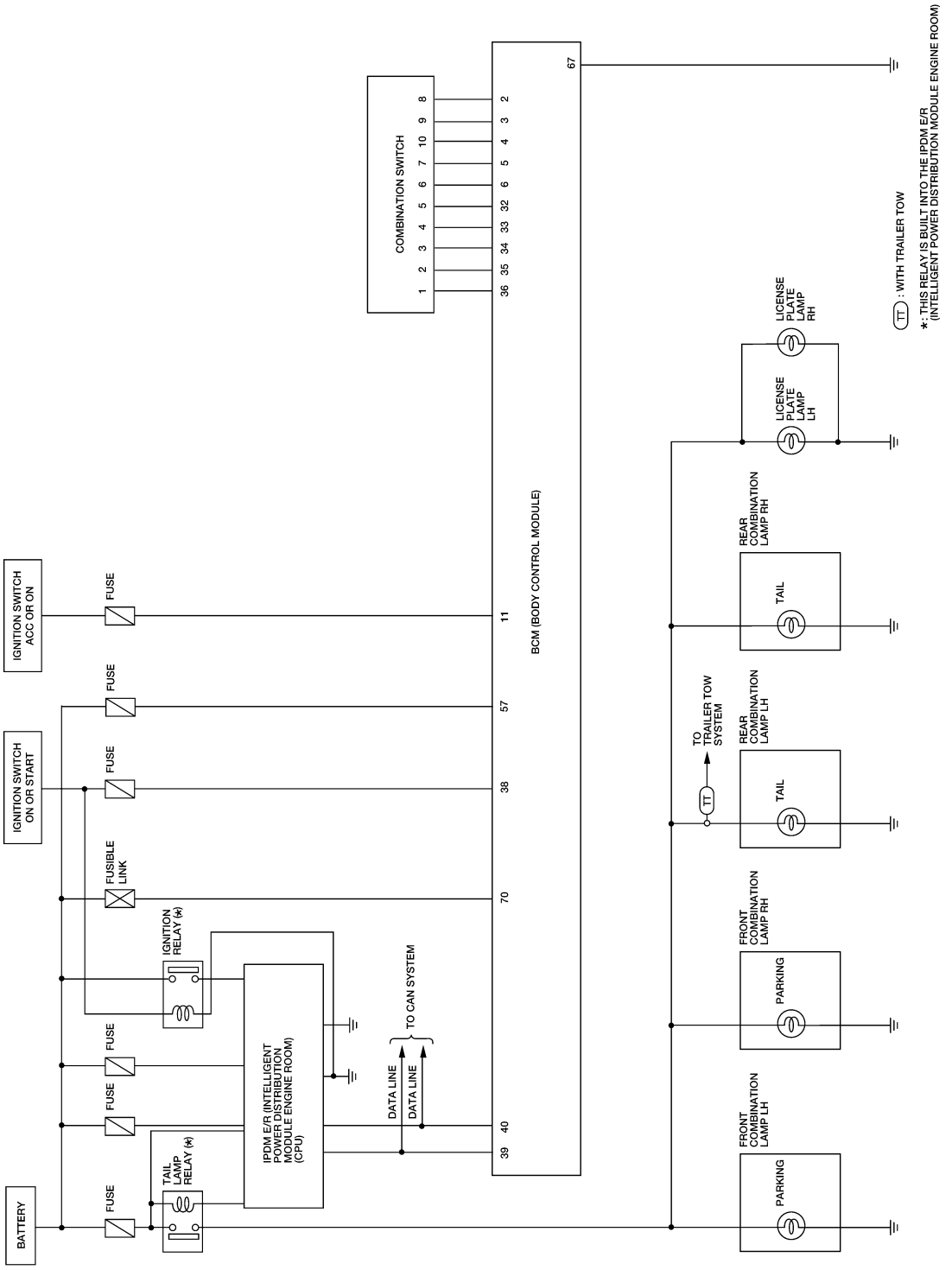
CAN Communication System Description

INFOID:0000000004277725

Refer to LAN-3, "CAN Communication System".

Schematic

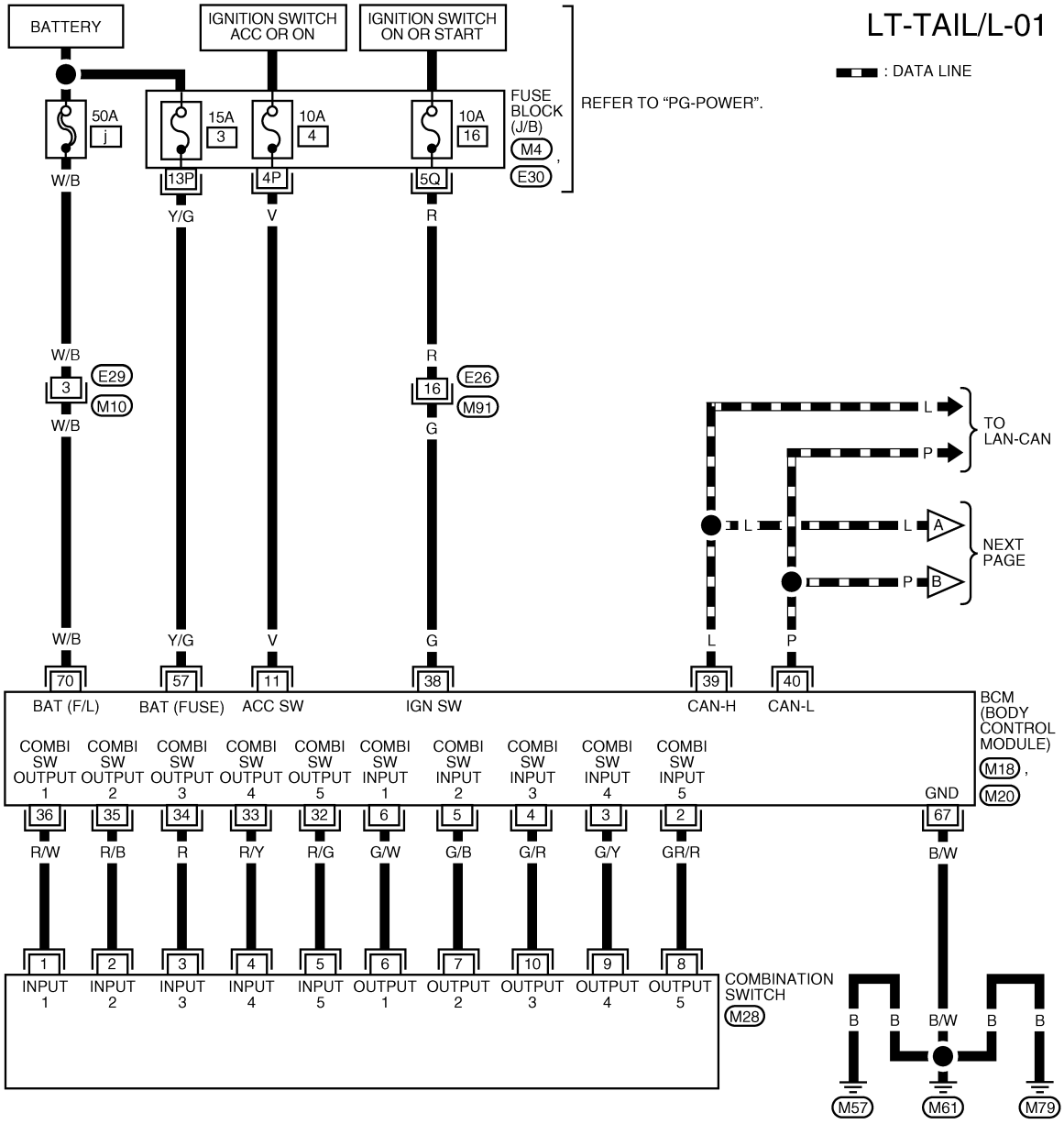
INFOID:0000000004277726

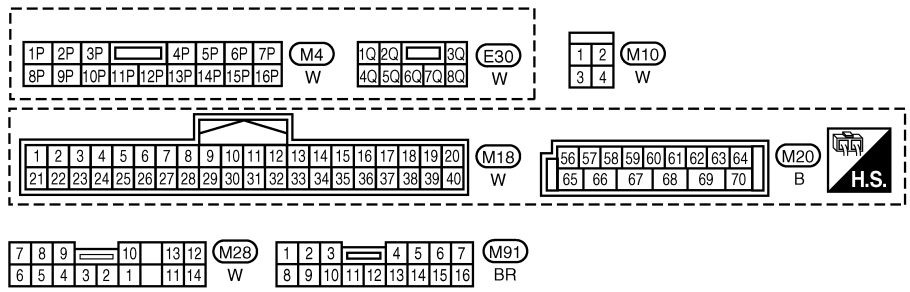


WKWA4707E

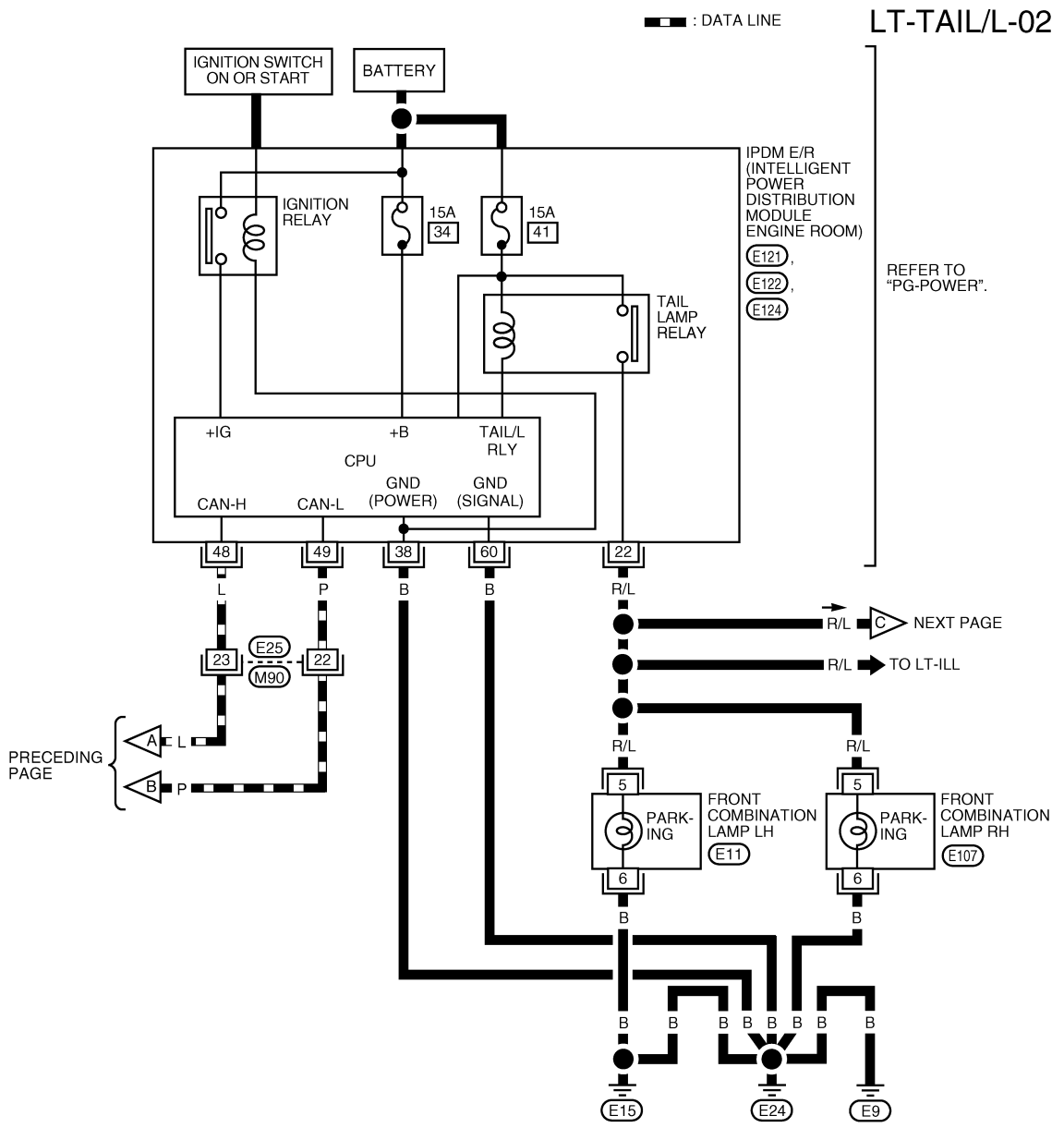
Wiring Diagram - TAIL/L -

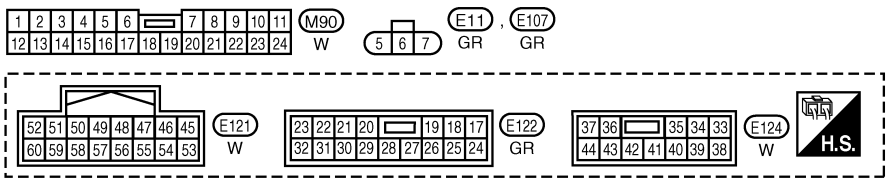
INFOID:0000000004277727





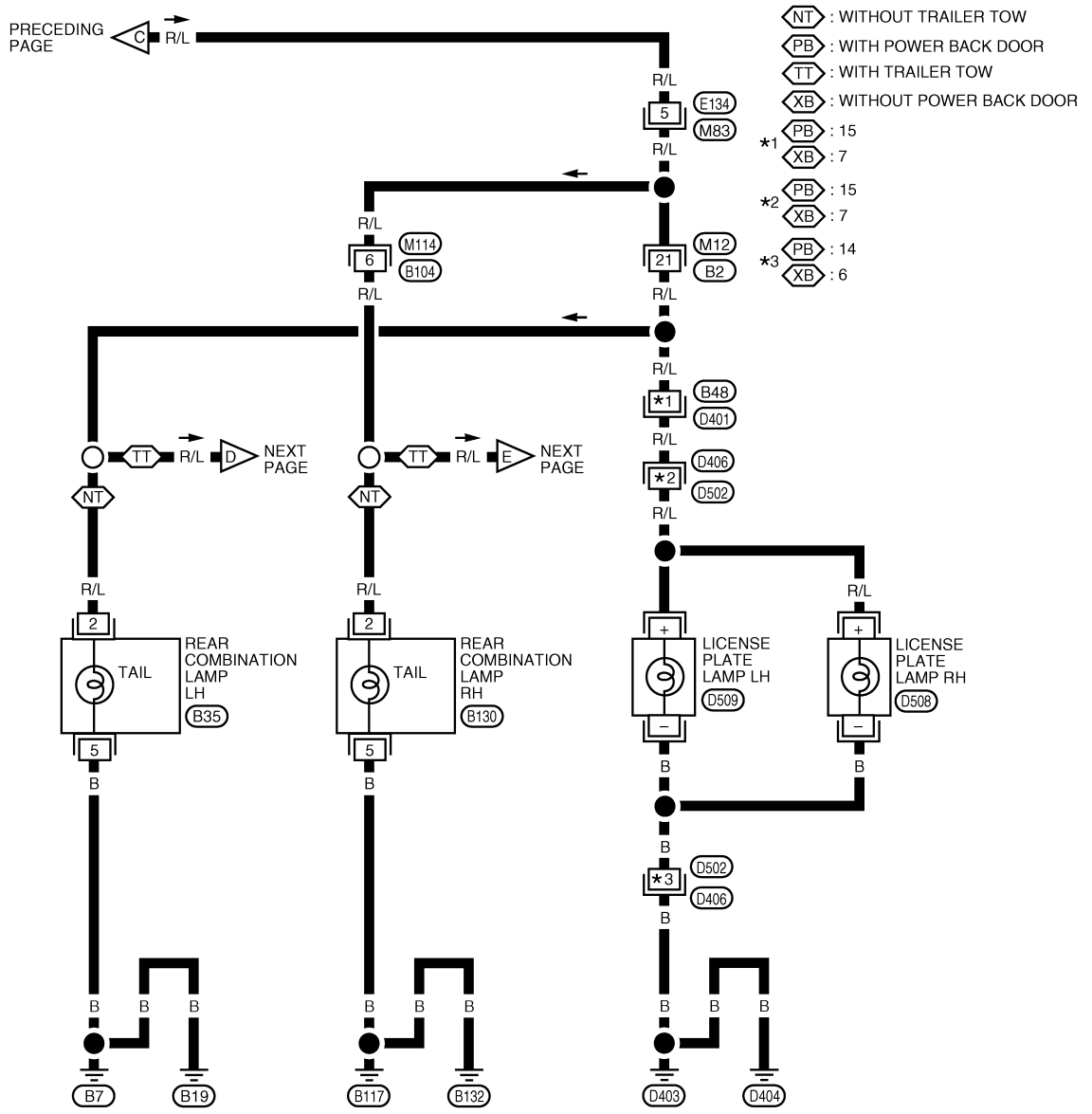
WKWA4708E

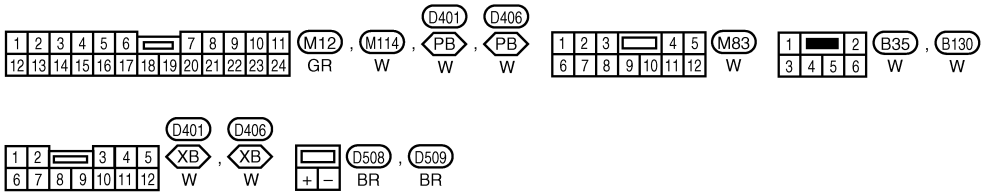

: DATA LINE
LT-TAIL/L-02
IGNITION SWITCH ON OR START
BATTERY
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E121, E122, E124
REFER TO "PG-POWER".
IGNITION RELAY
15A 34
15A 41
TAIL LAMP RELAY
+IG
+B
TAIL/L RLY
CPU
GND (POWER)
GND (SIGNAL)
CAN-H
CAN-L
48
49
38
60
22
L
P
B
B
R/L
R/L C NEXT PAGE
R/L TO LT-ILL
E25
M90
23
22
PRECEDING PAGE
A L
B P
R/L
R/L
5
PARK-ING
FRONT COMBINATION LAMP LH
E11
6
5
PARK-ING
FRONT COMBINATION LAMP RH
E107
6
B
B
B B B B B B B B
E15
E24
E9


1 2 3 4 5 6 7 8 9 10 11
12 13 14 15 16 17 18 19 20 21 22 23 24
M90
W
5 6 7
E11, E107
GR GR
52 51 50 49 48 47 46 45
60 59 58 57 56 55 54 53
E121
W
23 22 21 20 19 18 17
32 31 30 29 28 27 26 25 24
E122
GR
37 36 35 34 33
44 43 42 41 40 39 38
E124
W
H.S.

WKWA4709E

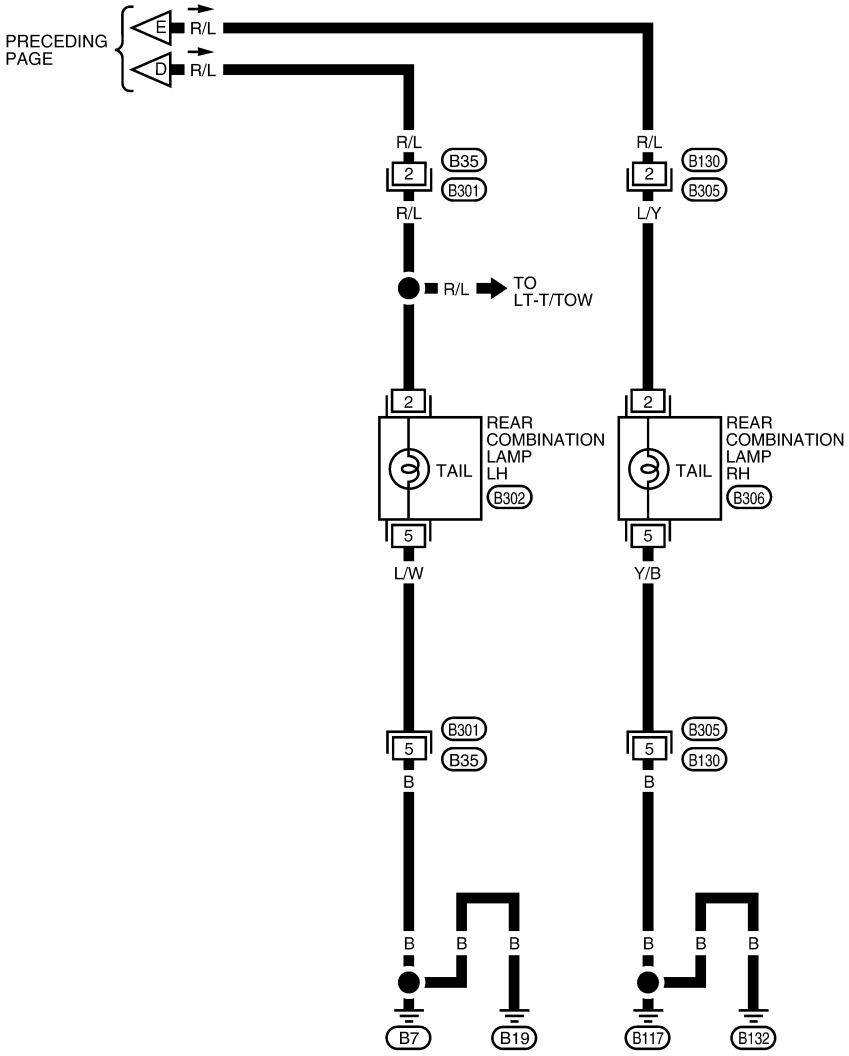
LT-TAIL/L-03

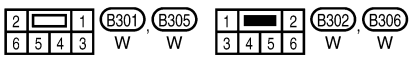




WKWA4710E

LT-TAIL/L-04





WKWA4711E

Terminal and Reference Value for BCM

INFOID:0000000004277728

Refer to BCS-11, "Terminal and Reference Value for BCM".

Terminal and Reference Value for IPDM E/R

INFOID:0000000004277729

Refer to PG-24, "Terminal and Reference Value for IPDM E/R".

How to Proceed with Trouble Diagnosis

INFOID:0000000004277730

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-90, "System Description".
3. Carry out the Preliminary Check. Refer to LT-97, "Preliminary Check".
4. Check symptom and repair or replace the cause of malfunction.
5. Do the parking, license and tail lamps operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

Preliminary Check

INFOID:0000000004277731

CHECK POWER SUPPLY AND GROUND CIRCUIT

Refer to BCS-15, "BCM Power Supply and Ground Circuit Inspection" and PG-27, "IPDM E/R Power/Ground Circuit Inspection".

CONSULT-III Functions

INFOID:0000000004277732

Refer to LT-12, "CONSULT-III Function (BCM)" in HEADLAMP (FOR USA).
Refer to LT-14, "CONSULT-III Function (IPDM E/R)" in HEADLAMP (FOR USA).

Parking, License Plate and/or Tail Lamps Do Not Illuminate

INFOID:0000000004277733

1. CHECK COMBINATION SWITCH INPUT SIGNAL

With CONSULT-III

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

When lighting switch is in 1ST position	**: LIGHT SW 1ST ON**

Without CONSULT-III

Refer to LT-81, "Combination Switch Inspection".

OK or NG

OK >> GO TO 2.
NG >> Check lighting switch. Refer to LT-81, "Combination Switch Inspection".

2. ACTIVE TEST

With CONSULT-III

1. Select "IPDM E/R" on CONSULT-III, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "TAIL LAMP" on "SELECT TEST ITEM" screen.
3. Touch "ON" on "ACTIVE TEST" screen.
4. Make sure parking, license plate and tail lamp operation.

Parking, license plate and tail lamp should operate

Without CONSULT-III

1. Start auto active test. Refer to PG-20, "Auto Active Test".
2. Make sure parking, license plate and tail lamp operation.

Parking, license plate and tail lamp should operate

OK or NG

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

3. CHECK IPDM E/R

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

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

OK or NG

OK >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".
NG >> Replace BCM. Refer to BCS-17, "Removal and Installation of BCM".

4. CHECK INPUT SIGNAL

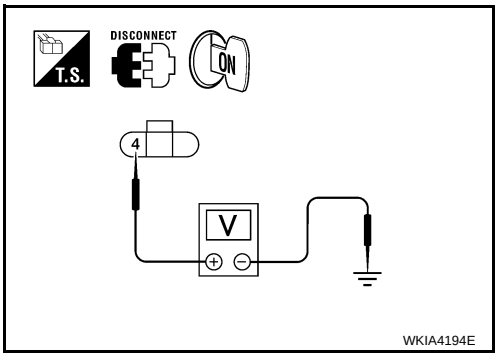
With CONSULT-III

1. Turn ignition switch OFF.
2. Disconnect front combination lamp, license plate lamp and rear combination lamp connectors.
3. Turn ignition switch ON.
4. Select "IPDM E/R" on CONSULT-III, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
5. Select "TAIL LAMP" on "SELECT TEST ITEM" screen.
6. Touch "ON" on "ACTIVE TEST" screen.
7. When tail lamp is operating, check voltage between front combination lamp, license plate lamp, rear combination lamp harness connector and ground.

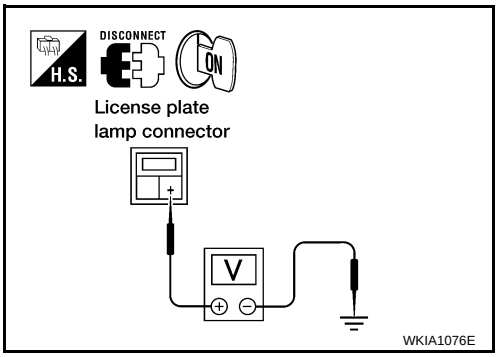
Without CONSULT-III

1. Start auto active test. Refer to PG-20, "Auto Active Test".
2. When tail lamp is operating, check voltage between front combination lamp, license plate lamp, rear combination lamp harness connector and ground.

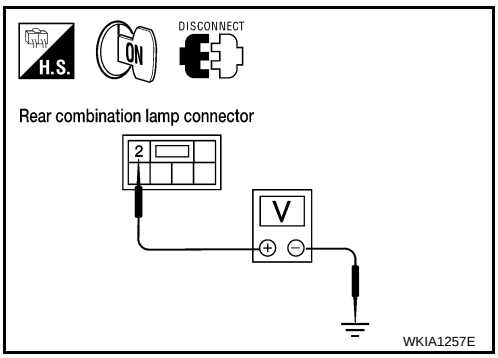
Terminals			(–)	Voltage
(+)				
Front combination lamp connector		Terminal		
RH	E107	4	Ground	Battery voltage
LH	E11			



License plate lamp			(–)	Voltage
(+)				
Connector		Terminal		
RH	D508	+	Ground	Battery voltage
LH	D509			



Rear combination lamp			(–)	Voltage
(+)				
Connector		Terminal		
RH	B130 (without trailer tow) B306 (with trailer tow)	2	Ground	Battery voltage
LH	B35 (without trailer tow) B302 (with trailer tow)			



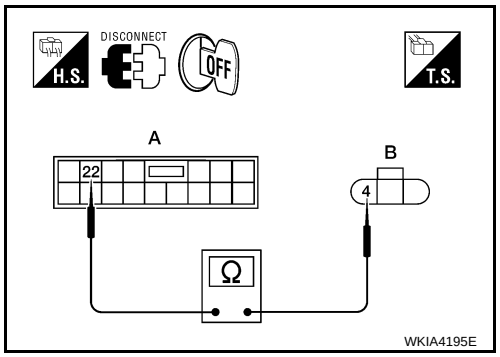
OK or NG

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

5. CHECK PARKING, LICENSE PLATE AND TAIL LAMP CIRCUIT

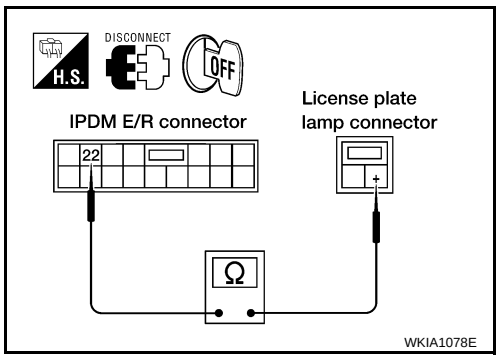
1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector and front combination lamp harness connector.

A		B			Continuity
IPDM E/R connector	Terminal	Front combination lamp connector		Terminal	
E122	22	RH	E107	4	Yes
		LH	E11		



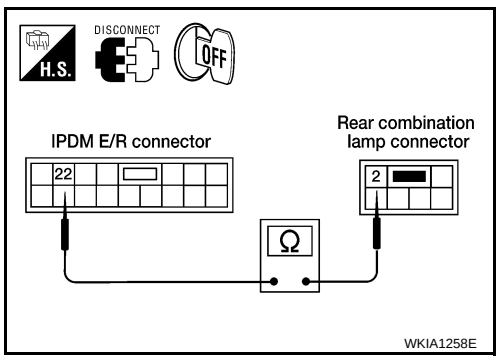
4. Check continuity between IPDM E/R harness connector and license plate lamp harness connector.

IPDM E/R		License plate lamp			Continuity
Connector	Terminal	Connector		Terminal	
E122	22	RH	D508	+	Yes
		LH	D509		



5. Check continuity between IPDM E/R harness connector and rear combination lamp harness connector.

IPDM E/R		Rear combination lamp			Continuity
Connector	Terminal	Connector		Terminal	
E122	22	RH	B130 (without trailer tow) B306 (with trailer tow)	2	Yes
		LH	B35 (without trailer tow) B302 (with trailer tow)		



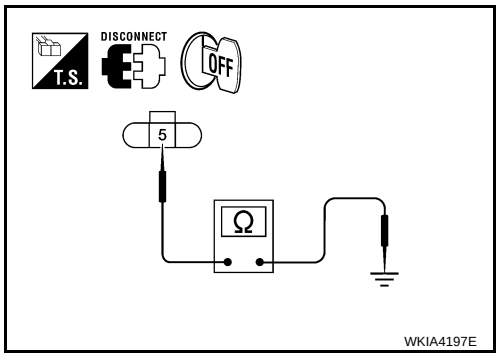
OK or NG

OK >> Replace IPDM E/R. Refer to PG-28, "Removal and Installation of IPDM E/R".
NG >> Repair harness or connector.

6. CHECK GROUND

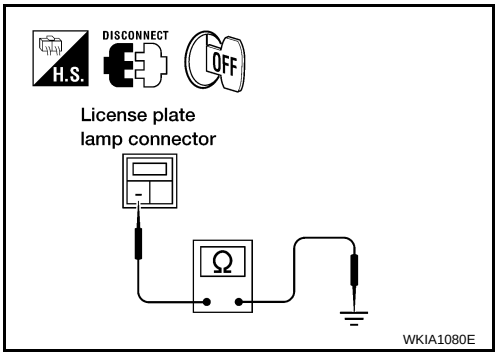
1. Turn ignition switch OFF.
2. Check continuity between front combination lamp harness connector and ground.

Terminals				Continuity
Front combination lamp connector		Terminal		
RH	E107	5	Ground	Yes
LH	E11			



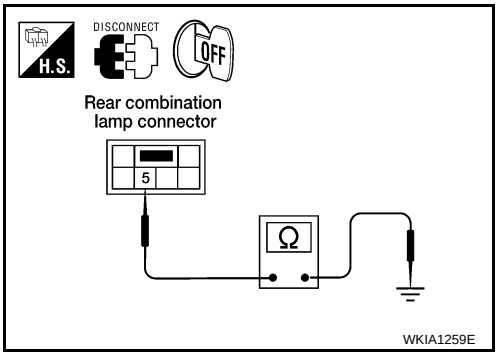
3. Check continuity between license lamp plate harness connector and ground.

License plate lamp				Continuity
Connector		Terminal		
RH	D508	–	Ground	Yes
LH	D509			



4. Check continuity between rear combination lamp harness connector and ground.

Rear combination lamp				Continuity
Connector		Terminal		
RH	B130 (without trailer tow) B306 (with trailer tow)	5	Ground	Yes
LH	B35 (without trailer tow) B302 (with trailer tow)			



OK or NG

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

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

INFOID:0000000004277734

1. CHECK IPDM E/R

1. Turn ignition switch ON. Turn the combination switch (lighting switch) to the OFF position. Turn ignition switch OFF.
2. Verify that the parking, license plate, and tail lamps turn on and off after approximately 10 minutes.

OK or NG

OK >> Ignition relay malfunction. Refer to PG-18, "Function of Detecting Ignition Relay Malfunction".
NG >> Inspection End.

Bulb Replacement

INFOID:0000000004277735

FRONT PARKING LAMP

Refer to LT-22, "Bulb Replacement".

LICENSE PLATE LAMP

Removal

1. Remove back door lower finisher. Refer toEI-31, "Removal and Installation".
2. Remove license plate lamp socket.
3. Remove license plate lamp.

Installation

Installation is in the reverse order of removal.

TAIL LAMP

Refer to LT-102, "Bulb Replacement".

Removal and Installation

INFOID:0000000004277736

FRONT PARKING LAMP

Refer to LT-23, "Removal and Installation".

LICENSE PLATE LAMP

Removal

1. Remove license plate finisher. Refer to EI-23.
2. Remove license plate lamp.

Installation

Installation is in the reverse order of removal.

TAIL LAMP

Refer to LT-102, "Removal and Installation".

REAR COMBINATION LAMP

Bulb Replacement

INFOID:0000000004277737

REMOVAL

1. Remove rear lower finisher assembly. Refer to EI-31, "Removal and Installation".
2. Turn rear combination lamp socket counterclockwise and remove from rear combination lamp.
3. Remove bulb from rear combination lamp socket.

INSTALLATION

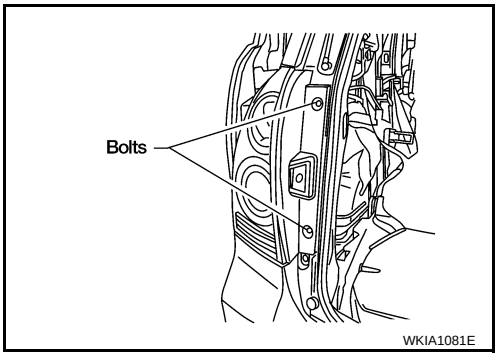
Installation is in the reverse order of removal.

Removal and Installation

INFOID:0000000004277738

REMOVAL

1. Remove rear lower finisher assembly. Refer to EI-31, "Removal and Installation".
2. Turn rear combination lamp socket counterclockwise and remove rear combination lamp.
3. Remove rear combination lamp bolts.
4. Pull rear combination lamp to remove from vehicle.

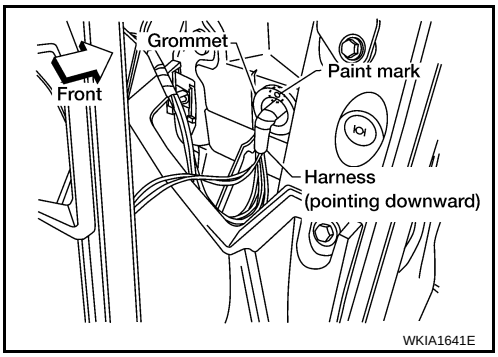


INSTALLATION

Installation is in the reverse order of removal.

NOTE:

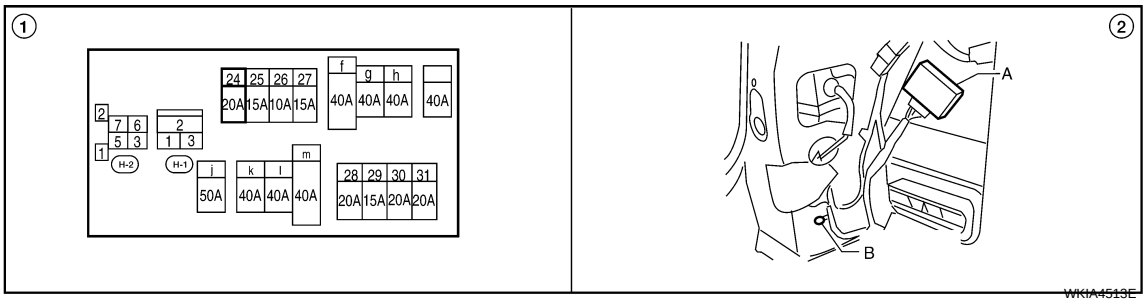
- Install rear combination lamp harness and grommet so that paint mark on grommet is at top and harness points down.



TRAILER TOW

Component Parts and Harness Connector Location

INFOID:0000000004277739



1. Fuse and fusible link box

2. A. Trailer tow control unit B303
   B. Trailer tow ground
   (View with rear lower finisher assembly LH removed)

System Description

INFOID:0000000004277740

Power is supplied at all times
- through 20A fuse (No. 24, located in the fuse and fusible link box)
- to trailer tow control unit terminal 7.

Ground is supplied
- to trailer tow control unit terminal 5, and
- to trailer connector terminal 4
- through grounds B7 and B19.

TRAILER TAIL LAMP OPERATION

With the lighting switch in the parking and tail lamp ON (1ST) position, AUTO position (and the auto light system is activated) or headlamp ON (2ND) position, power is supplied
- through rear combination lamp LH
- to trailer tow control unit terminal 3.

The trailer tail lamps are controlled by the trailer tow control unit. The trailer tow control unit supplies power
- through trailer tow control unit terminal 1
- to trailer connector terminal 3.

TRAILER STOP, TURN SIGNAL AND HAZARD LAMP OPERATION

The trailer stop, turn signal and hazard lamps are all controlled by the trailer tow control unit. The trailer tow control unit regulates the amount of voltage supplied to the trailer lamps. If either turn signal or the hazard lamps are turned on and the trailer tow control unit gets a brake lamp input, the trailer tow control unit supplies more voltage to the trailer lamps to make them illuminate brighter.

Stop lamp input is supplied
- through rear combination lamp LH
- to trailer tow control unit terminal 8.

Left turn signal and hazard lamp input is supplied
- through rear combination lamp LH
- to trailer tow control unit terminal 4.

Right turn signal and hazard lamp input is supplied
- through rear combination lamp RH
- to trailer tow control unit terminal 9.

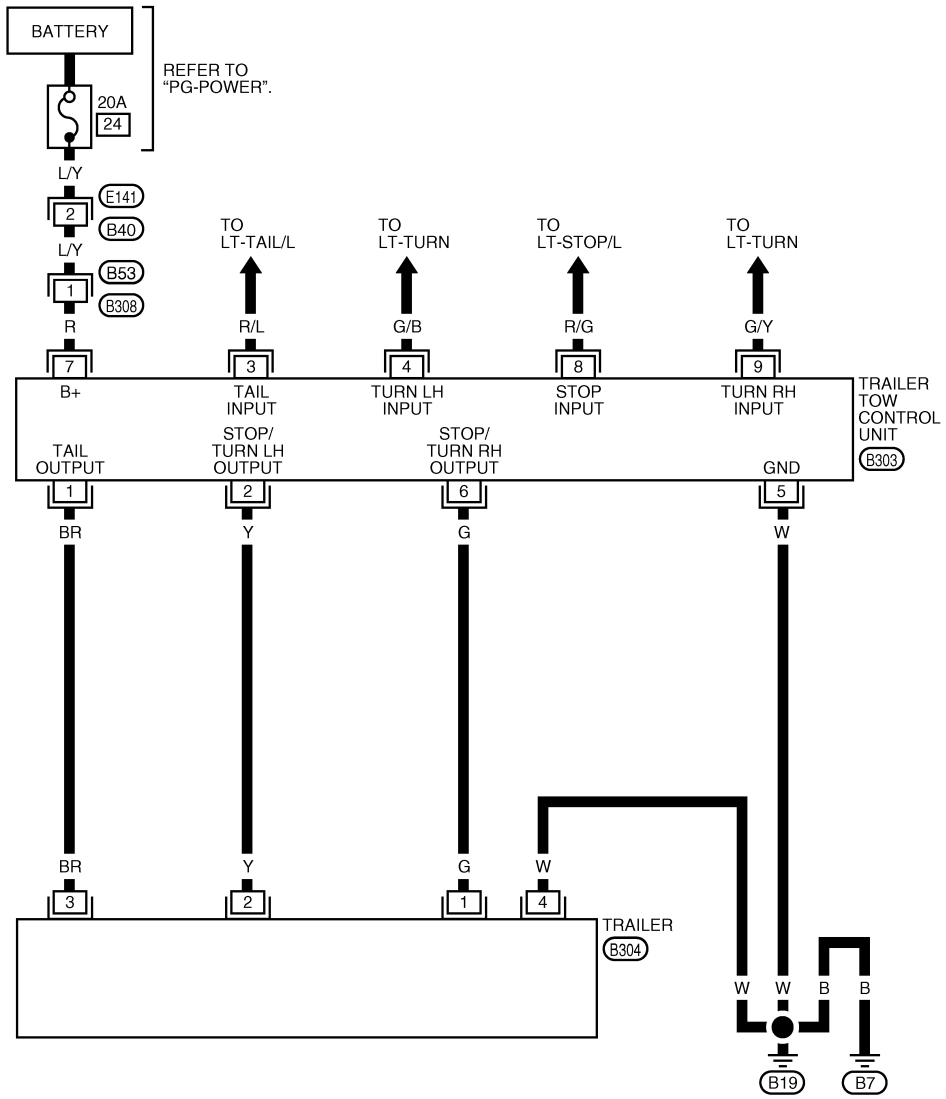
Based on the stop lamp, turn signal lamp and hazard lamp inputs to the trailer tow control unit, power is supplied to trailer stop/turn lamp LH
- through trailer tow control unit terminal 2
- to trailer harness connector terminal 2.

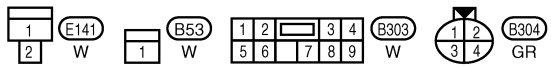
Power is also supplied to trailer stop/turn lamp RH
- through trailer tow control unit terminal 6
- to trailer harness connector terminal 1.

Wiring Diagram - T/TOW -

INFOID:0000000004277741

LT-T/TOW-01





WKWA4712E

Trouble Diagnosis

INFOID:0000000004277742

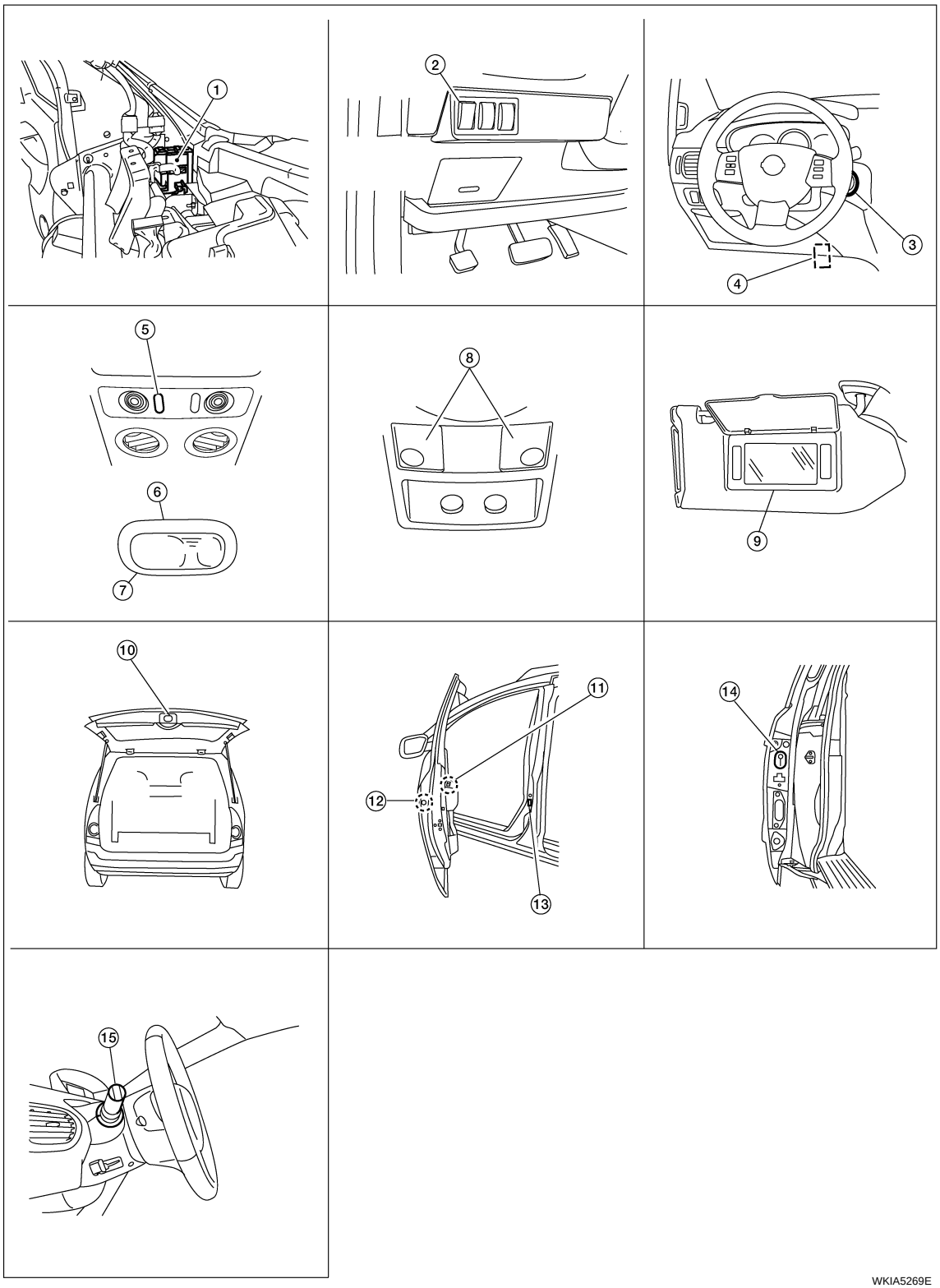
TRAILER TOW CONTROL UNIT INSPECTION TABLE

Terminal No.	Wire color	Item	Condition	Voltage (Approx.)
1	BR	Tail lamps signal output	When tail lamps operate	Battery voltage
			All other conditions	0V
2	Y	Stop/LH turn lamp (output)	When brake pedal is depressed	Battery voltage
			When LH turn lamps or hazard lamps operate	Battery voltage (intermittently)
			All other conditions	0V
3	R/L	Tail lamps signal input	When tail lamps operate	Battery voltage
			All other conditions	0V
4	G/B	LH turn lamps input	When LH turn lamps or hazard lamps operate	Battery voltage (intermittently)
			All other conditions	0V
5	W	Ground	—	—
6	G	Stop/RH turn lamp (output)	When brake pedal is depressed	Battery voltage
			When RH turn lamps or hazard lamps operate	Battery voltage (intermittently)
			All other conditions	0V
7	R	Power supply	—	Battery voltage
8	R/G	Stop lamps signal input	When brake pedal is depressed	Battery voltage
			When brake pedal is released	0V
9	G/Y	RH turn lamps input	When RH turn lamps or hazard lamps operate	Battery voltage (intermittently)
			All other conditions	0V

INTERIOR ROOM LAMP

Component Parts and Harness Connector Location

INFOID:0000000004277743



WKIA5269E

1. BCM M18, M19, M20 (view with instrument panel removed)
2. Lamps on demand switch M108
3. Key switch M27
   Ignition keyhole illumination M25
4. Foot lamp LH M99
   RH M100
5. Personal lamp with rear roof console R52, R54
6. Personal lamp without rear roof console R2, R7, R12, R13

7. Cargo lamp R11	8. Room/map lamps R9	9. Vanity lamp (if equipped), LH R3 RH R8
10. Back door switch (without power back door) D512 Back door latch (door ajar switch) (with power back door) D511	11. Main power window and door lock/ unlock switch D7, D8 Power window and door lock/unlock switch RH D105	12. Front door lock assembly LH (key cylinder switch) D14
13. Front door switch LH B8 RH B108	14 Sliding door switch LH B46 RH B135	15. Combination switch (lighting switch) M28

System Description

INFOID:0000000004277744

When lamps on demand switch is in DOOR position, room/map lamp and personal lamp ON/OFF is controlled by timer according to signals from switches including key switch, door switches, unlock signal from keyfob, door lock and unlock switch, key cylinder switch, and ignition switch.
When room/map lamp and personal lamp turns ON, there is a gradual brightening over 1 second. When room/map lamp and personal lamp turns OFF, there is a gradual dimming over 1 second.
The room/map lamp and personal lamp timer is controlled by the BCM (body control module).
Room/map lamp and personal lamp timer control settings can be changed with CONSULT-III.
Ignition keyhole illumination turns ON when front door LH is opened (door switch ON) or key is removed from key cylinder. Illumination turns OFF when front door LH is closed (door switch OFF).
Step and foot lamp turns ON when any door is opened (door switch ON). Lamp turns OFF when all doors are closed (all door switches OFF).

POWER SUPPLY AND GROUND

Power is supplied at all times
- through 15A fuse [No. 19, located in the fuse block (J/B)]
- to key switch terminal 1, and
- through 15A fuse [No. 3, located in the fuse block (J/B)]
- to BCM terminal 57, and
- through 50A fusible link (letter **j**, located in the fuse and fusible link box)
- to BCM terminal 70.

When the key is inserted in key switch, power is supplied
- through the key switch terminal 2
- to BCM terminal 37.

With the ignition switch in the ON or START position, power is supplied
- through 10A fuse [No. 16, located in the fuse block (J/B)]
- to BCM terminal 38.

Ground is supplied
- to BCM terminal 67
- through grounds M57, M61 and M79.

When the front door LH is opened, ground is supplied
- to BCM terminal 47
- through front door switch LH terminal 1
- through case ground of front door switch LH.

When the front door RH is opened, ground is supplied
- to BCM terminal 12
- through front door switch RH terminal 1
- through case ground of front door switch RH.

When the sliding door LH is opened, ground is supplied
- to BCM terminal 48
- through sliding door switch LH terminal 1
- through case ground of sliding door switch LH.

When the sliding door RH is opened, ground is supplied
- to BCM terminal 13
- through sliding door switch RH terminal 1
- through case ground of sliding door switch RH.

When the liftgate is opened, ground is supplied
- to BCM terminal 43
- through back door switch terminal 1 (without power back door) or back door latch (door ajar switch) terminal 7 (with power back door)
- through back door switch terminal 3 (without power back door) or back door latch (door ajar switch) terminal 8 (with power back door)

• through grounds D403 and D404.
When doors are locked or unlocked by either door lock/unlock switch, BCM receives a ground signal
• to BCM terminal 22
• through main power window and door lock/unlock switch terminal 14 (with rear power vent windows) or terminal 12 (without rear power vent windows)
• through main power window and door lock/unlock switch terminal 17 (with rear power vent windows) or terminal 15 (without rear power vent windows), or
• through power window and door lock/unlock switch RH terminal 16
• through power window and door lock/unlock switch RH terminal 11
• through grounds M57, M61 and M79.
When the front door LH is unlocked by the key, the BCM receives a ground signal
• to BCM terminal 22
• through main power window and door lock/unlock switch terminal 14 (with rear power vent windows) or terminal 12 (without rear power vent windows)
• through main power window and door lock/unlock switch terminal 6 (with rear power vent windows) or terminal 7 (without rear power vent windows)
• through front door lock assembly LH (key cylinder switch) terminal 6
• through front door lock assembly LH (key cylinder switch) terminal 5
• through grounds M57, M61 and M79.
When the front door LH is locked by the key, the BCM receives a ground signal
• to BCM terminal 22
• through main power window and door lock/unlock switch terminal 14 (with rear power vent windows) or terminal 12 (without rear power vent windows)
• through main power window and door lock/unlock switch terminal 4 (with rear power vent windows) or terminal 6 (without rear power vent windows)
• through front door lock assembly LH (key cylinder switch) terminal 1
• through front door lock assembly LH (key cylinder switch) terminal 5
• through grounds M57, M61 and M79.
When a signal, or combination of signals is received by BCM, ground is supplied
• through BCM terminal 63
• to lamps on demand switch terminal 3
• through lamps on demand switch terminal 4 (with switch in DOOR position)
• to room/map lamps terminal 2
• to personal lamps 2nd and 3rd row terminal 2 (without rear roof console) or personal lamps 2nd and 3rd row terminal 3 (with rear roof console).
With power and ground supplied, the lamps illuminate.

SWITCH OPERATION

When front door switch LH is ON (door is opened), ground is supplied
• to ignition keyhole illumination terminal –
• through BCM terminal 1.
And power is supplied
• through BCM terminal 56
• to ignition keyhole illumination terminal +.
When any door switch is ON (door is opened), ground is supplied
• to front step lamp LH and RH terminal 1, and
• to foot lamp LH and RH terminal –
• through BCM terminal 62.
And power is supplied
• through BCM terminal 56
• to front step lamp LH and RH terminal 2
• to foot lamp LH and RH terminal +.
When room/map lamps switch is ON, ground is supplied
• to room/map lamps terminal 3
• through grounds M57, M61 and M79.
And power is supplied
• through BCM terminal 56
• to room/map lamps terminal 1.
When vanity lamp (if equipped), LH or RH is ON, ground is supplied
• to vanity lamp LH and RH terminal –
• through grounds M57, M61 and M79.
And power is supplied

• through BCM terminal 56
• to vanity lamp LH and RH terminal +.

When personal lamps 2nd row LH or RH is ON, ground is supplied
• to personal lamps 2nd row LH or RH terminal 3 (without rear roof console assembly) or personal lamps 2nd row terminal 2 (with rear roof console assembly)
• through grounds M57, M61 and M79.

And power is supplied
• through BCM terminal 56
• to personal lamps 2nd row LH or RH terminal 1 (without rear roof console assembly) or personal lamps 2nd row terminal 1 (with rear roof console assembly).

When personal lamps 3rd row LH or RH is ON, ground is supplied
• to personal lamps 3rd row LH or RH terminal 3 (without rear roof console assembly) or personal lamps 3rd row terminal 2 (with rear roof console assembly)
• through grounds M57, M61 and M79.

And power is supplied
• through BCM terminal 56
• to personal lamps 3rd row LH or RH terminal 1(without rear roof console assembly) or personal lamps 3rd row terminal 1 (with rear roof console assembly).

When cargo lamp is ON, ground is supplied
• to cargo lamp terminal 1
• through grounds M57, M61 and M79.

And power is supplied
• through BCM terminal 56
• to cargo lamp terminal 2.

ROOM LAMP TIMER OPERATION

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

Power is supplied at all times
• through 15A fuse [No. 19, located in the fuse block (J/B)]
• to key switch terminal 1.

Key is removed from ignition key cylinder (key switch OFF), power will not be supplied to BCM terminal 37.

Ground is supplied
• to BCM terminal 22
• through main power window and door lock/unlock switch terminal 14 (with rear power vent windows) or 12 (without rear power vent windows).

At the time that front door LH is opened, BCM detects that front door LH is unlocked. It determines that interior room/map lamp timer operation conditions are met and turns the interior room/map lamp ON for 30 seconds.

Key is in ignition key cylinder (key switch ON), power is supplied
• through key switch terminal 2
• to BCM terminal 37.

When key is removed from key switch (key switch OFF), power supply to BCM terminal 37 is terminated. BCM detects that key has been removed, determines that interior room/map lamp timer conditions are met, and turns the interior room/map lamp ON for 30 seconds.

When front door LH opens → closes and the key is not inserted in the key switch (key switch OFF), BCM terminal 47 changes between 0V (door open) → 12V (door closed). The BCM determines that conditions for interior room/map lamp operation are met and turns the interior room/map lamp ON for 30 seconds.

Timer control is canceled under the following conditions.
• Front door LH is locked [when locked with keyfob, main power window and door lock/unlock switch or front door lock assembly LH (key cylinder switch)]
• Front door LH is opened (front door switch LH turns ON)
• Ignition switch ON.

INTERIOR LAMP BATTERY SAVER CONTROL

If interior lamp is left "ON", it will not be turned out even when door is closed.

BCM turns off interior lamp automatically to save battery 30 minutes after ignition switch is turned OFF.

BCM controls interior lamps listed below:
• Vanity lamp (if equipped)
• Room/map lamp
• Cargo lamp
• Personal lamp
• Step lamps

- Foot lamps
- Ignition keyhole illumination

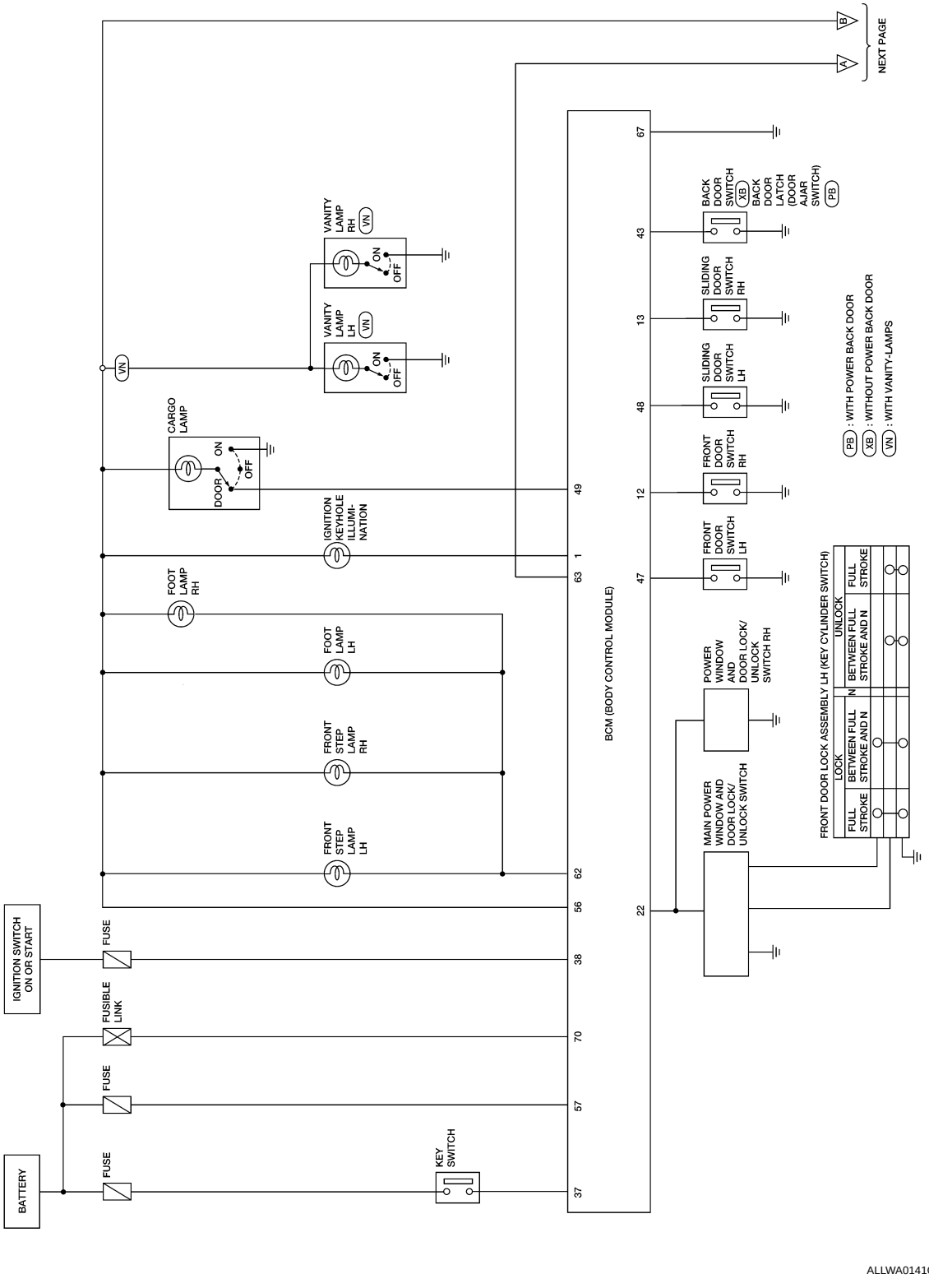
After lamps turn OFF by the battery saver system, the lamps illuminate again when

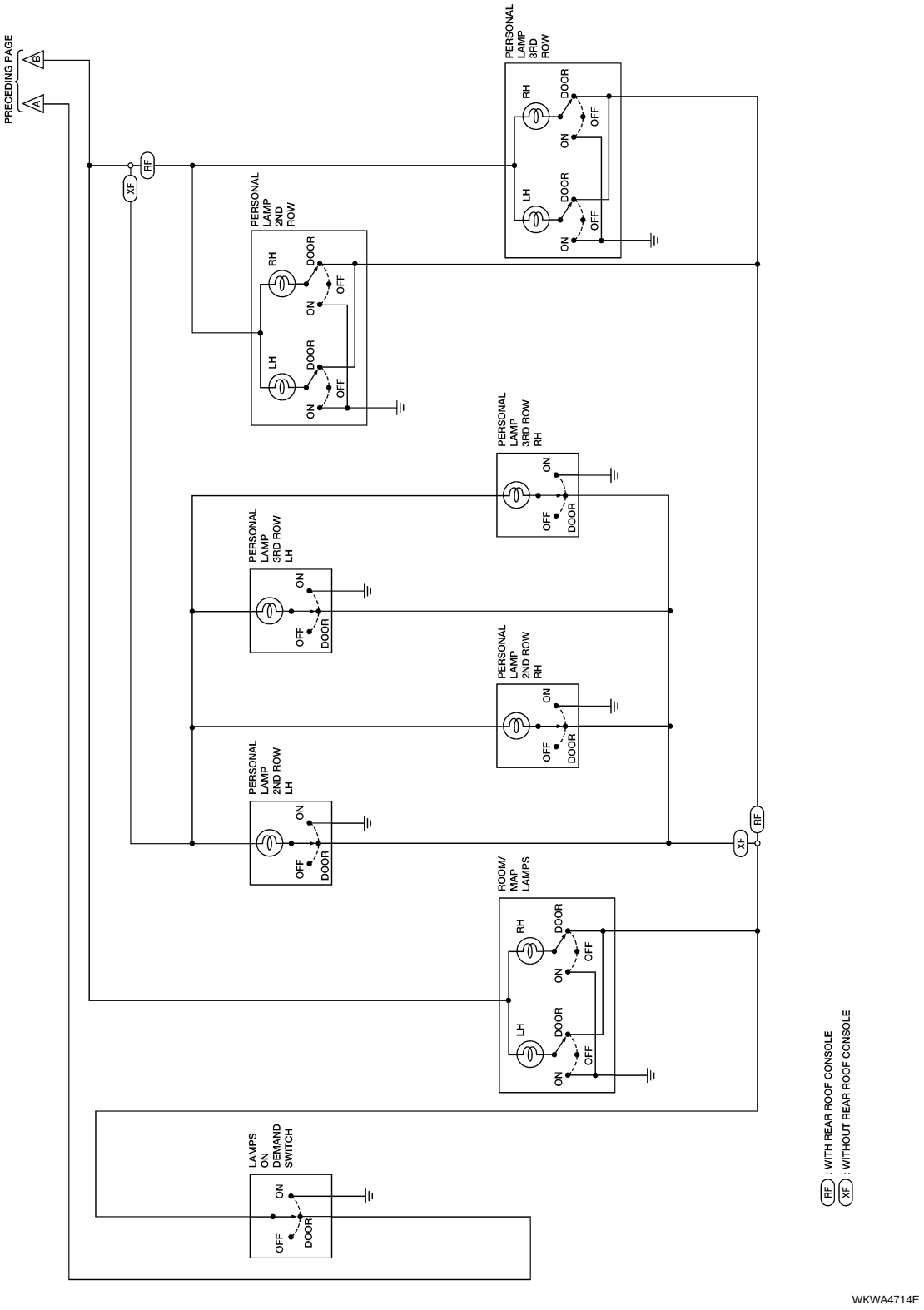
- signal received from keyfob, or main power window and door lock/unlock switch or front door lock assembly LH (key cylinder switch) is locked or unlocked
- door is opened or closed
- key is removed from or inserted in ignition key cylinder.

Interior lamp battery saver control period can be changed by the function setting of CONSULT-III and through the display (with color display).

Schematic

INFOID:0000000004277745

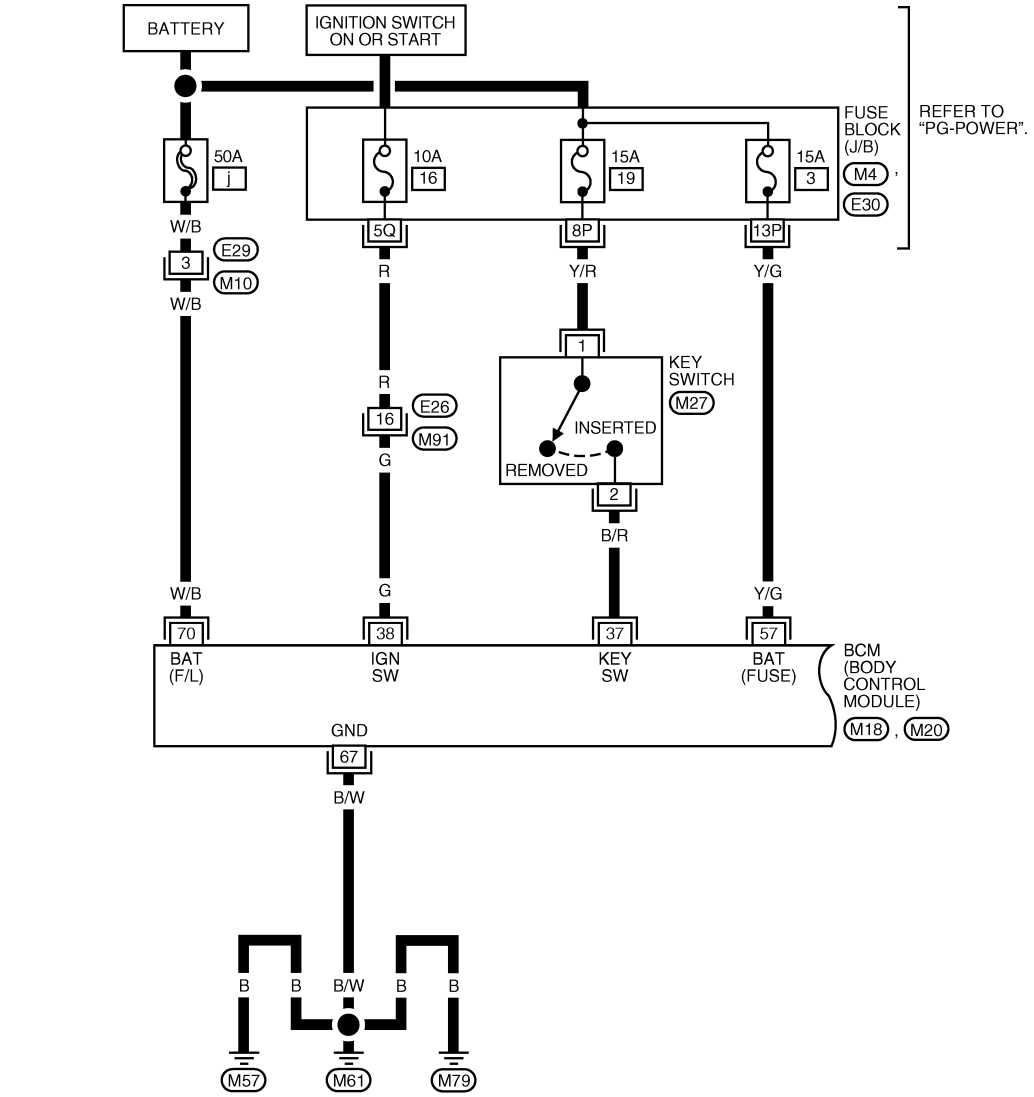


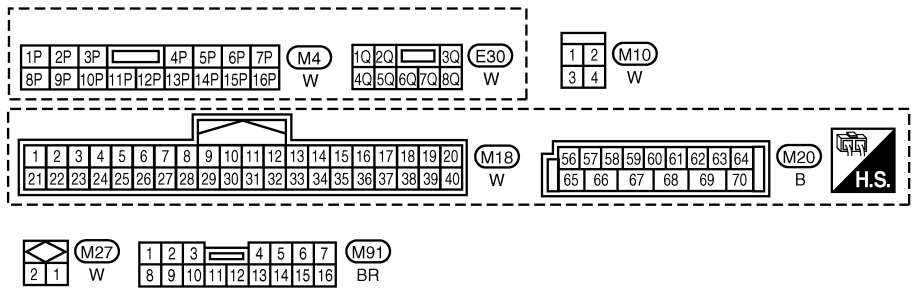

PRECEDING PAGE
B
A
RF
XF
PERSONAL LAMP 3RD ROW
PERSONAL LAMP 2ND ROW
PERSONAL LAMP 3RD ROW RH
PERSONAL LAMP 3RD ROW LH
PERSONAL LAMP 2ND ROW RH
PERSONAL LAMP 2ND ROW LH
ROOM/ MAP LAMPS
LAMPS ON DEMAND SWITCH
RH
LH
DOOR
ON
OFF
RF : WITH REAR ROOF CONSOLE
XF : WITHOUT REAR ROOF CONSOLE
WKWA4714E

Wiring Diagram - INT/L -

INFOID:0000000004277746

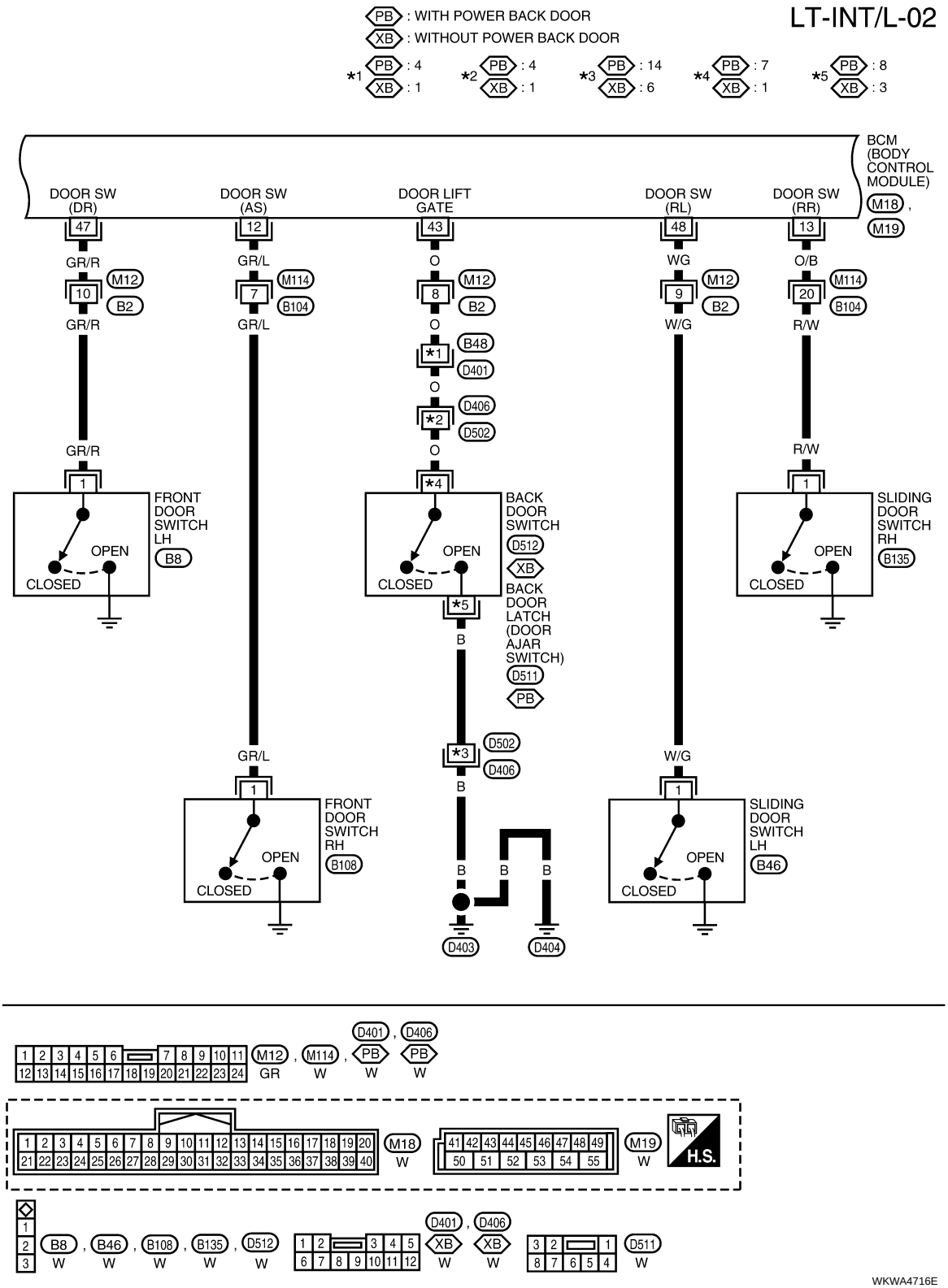
LT-INT/L-01





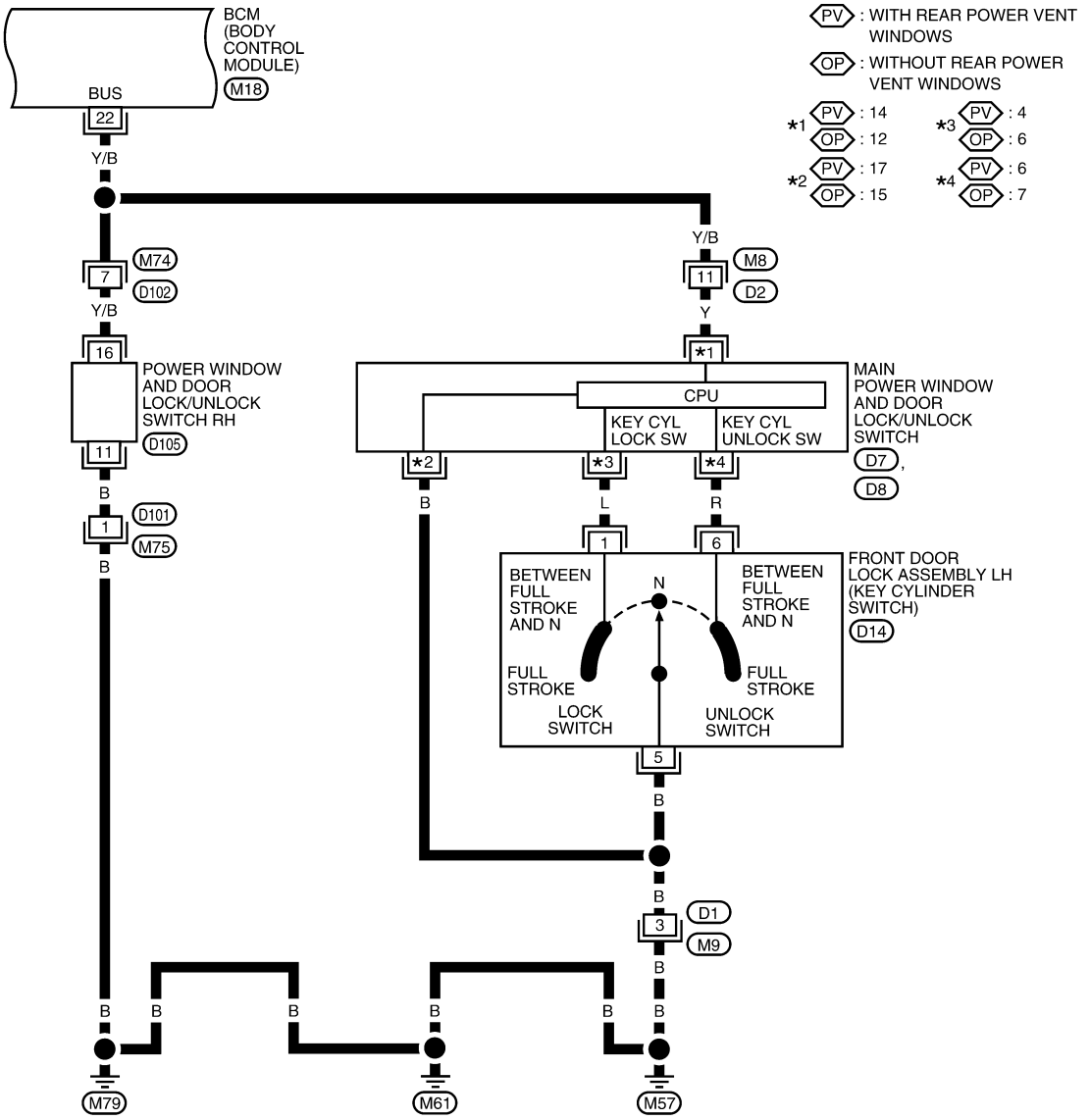
WKWA4715E

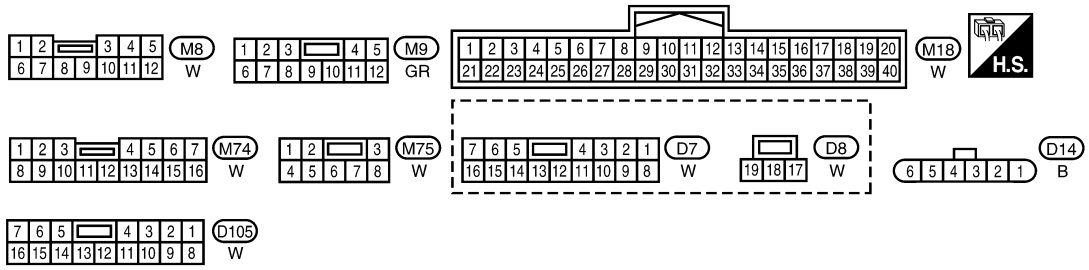
LT-INT/L-02



WKWA4716E

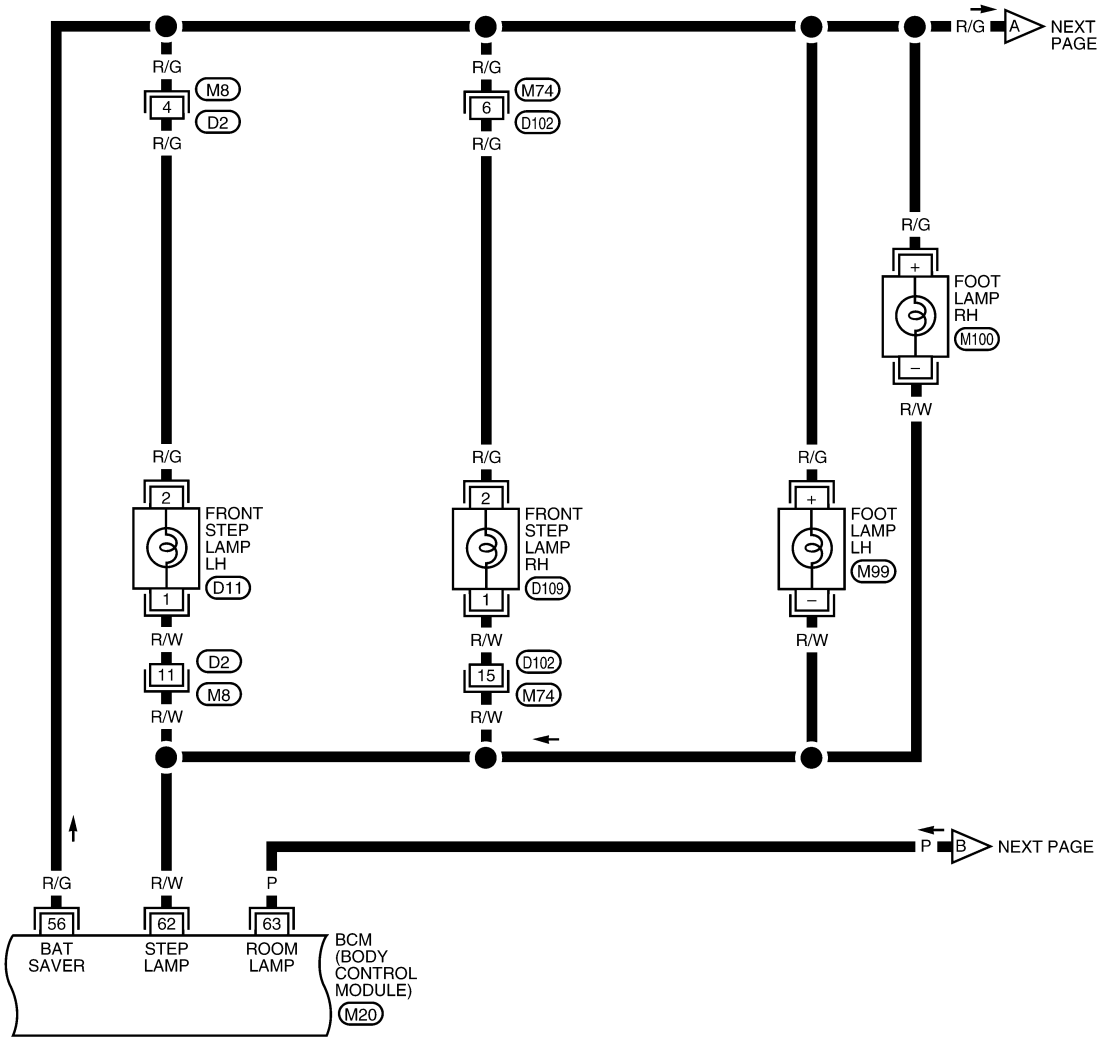
LT-INT/L-03

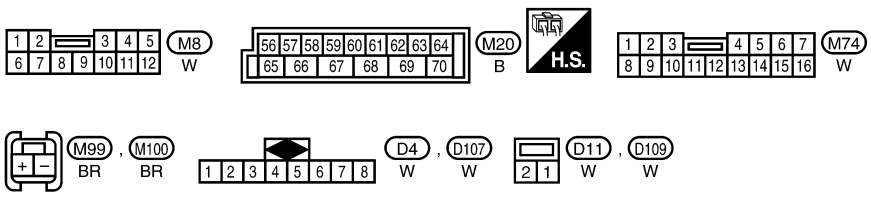




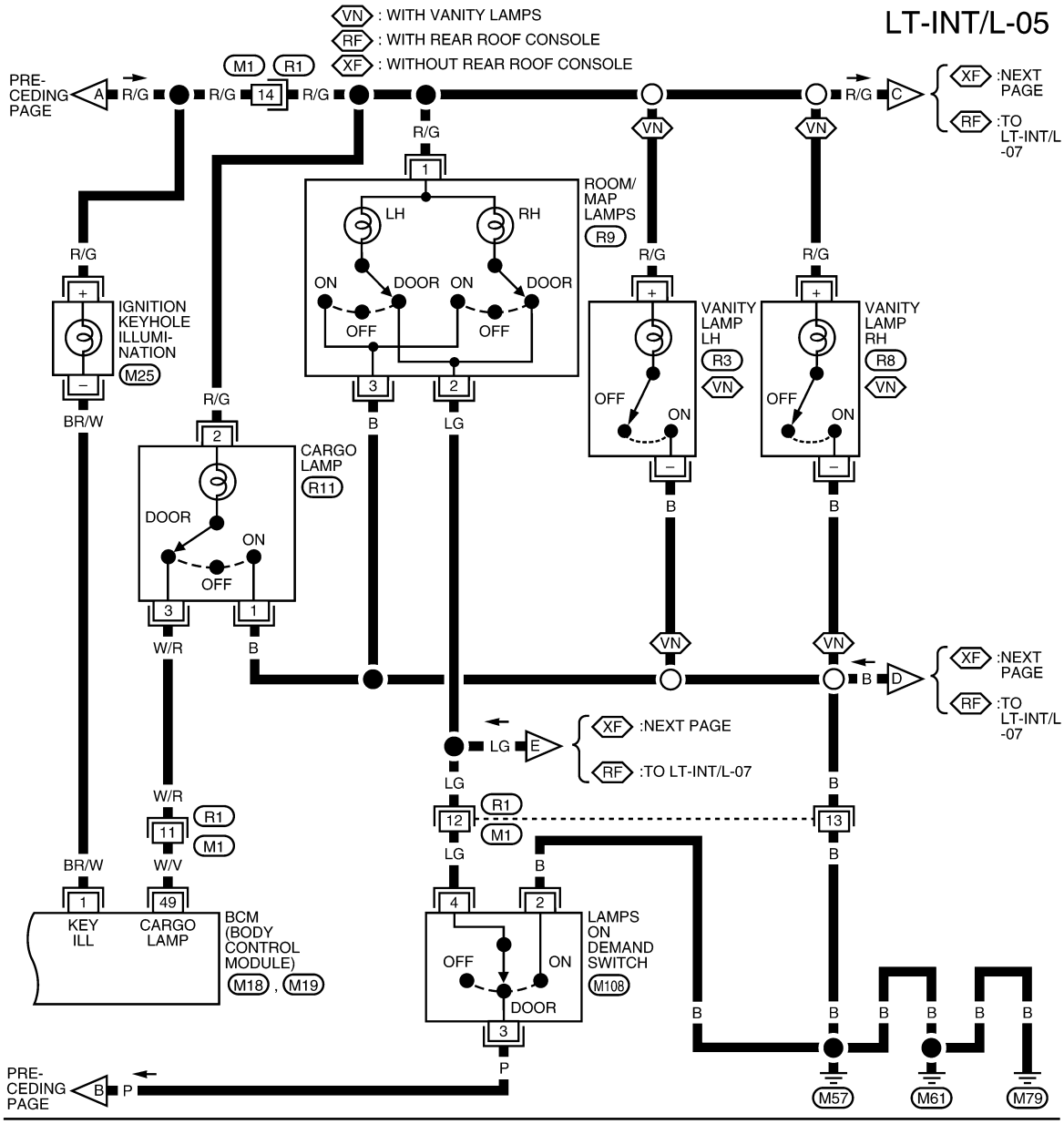
WKWA4717E

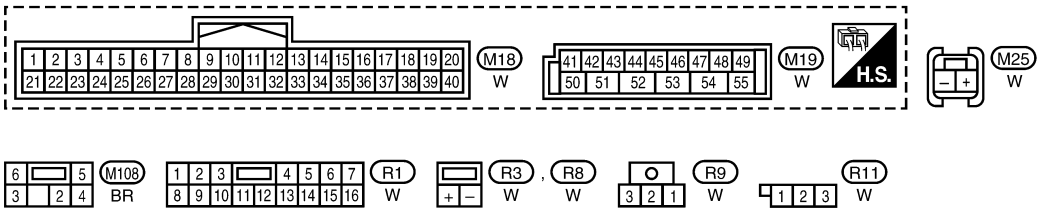
LT-INT/L-04



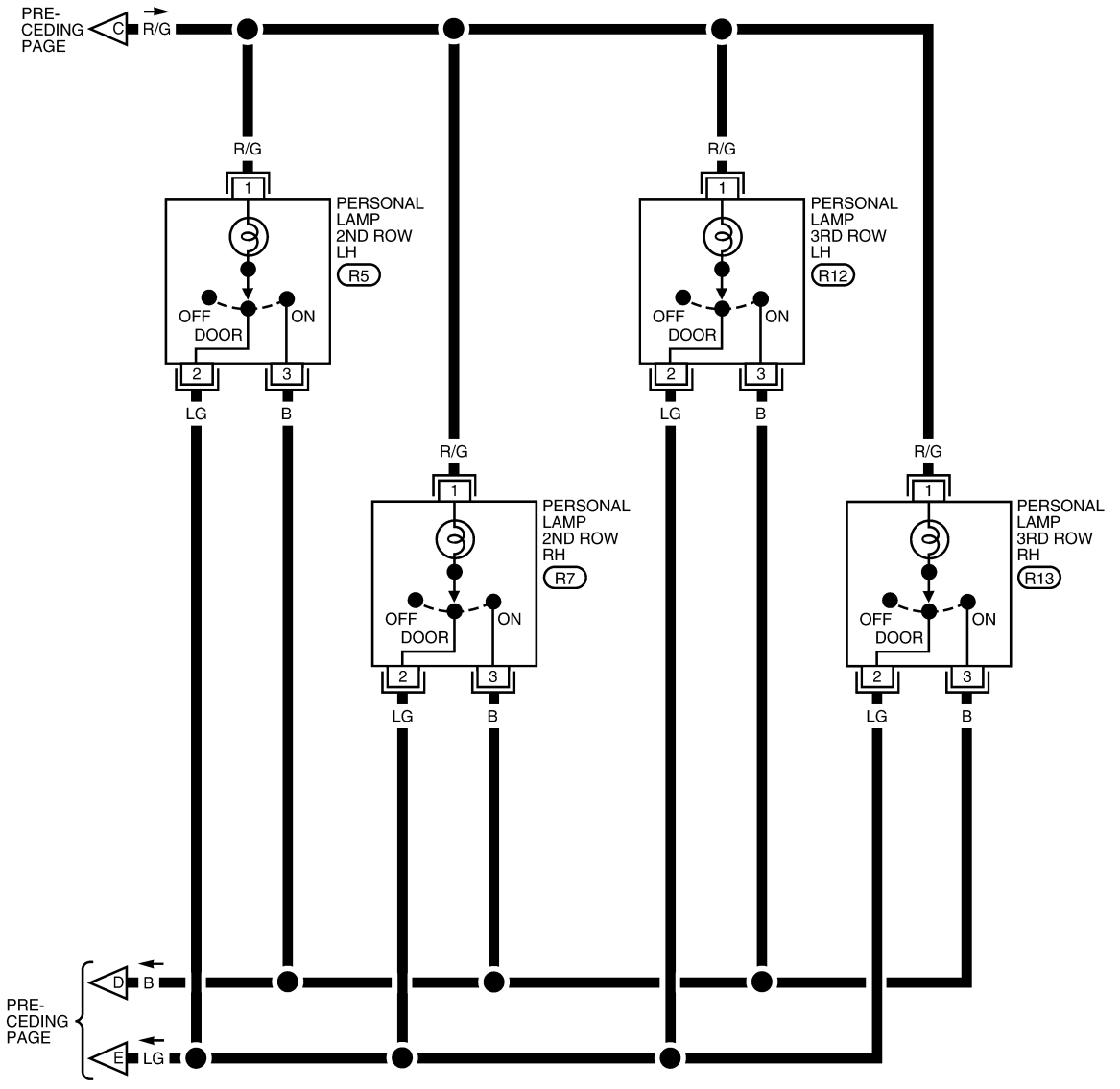


WKWA4718E





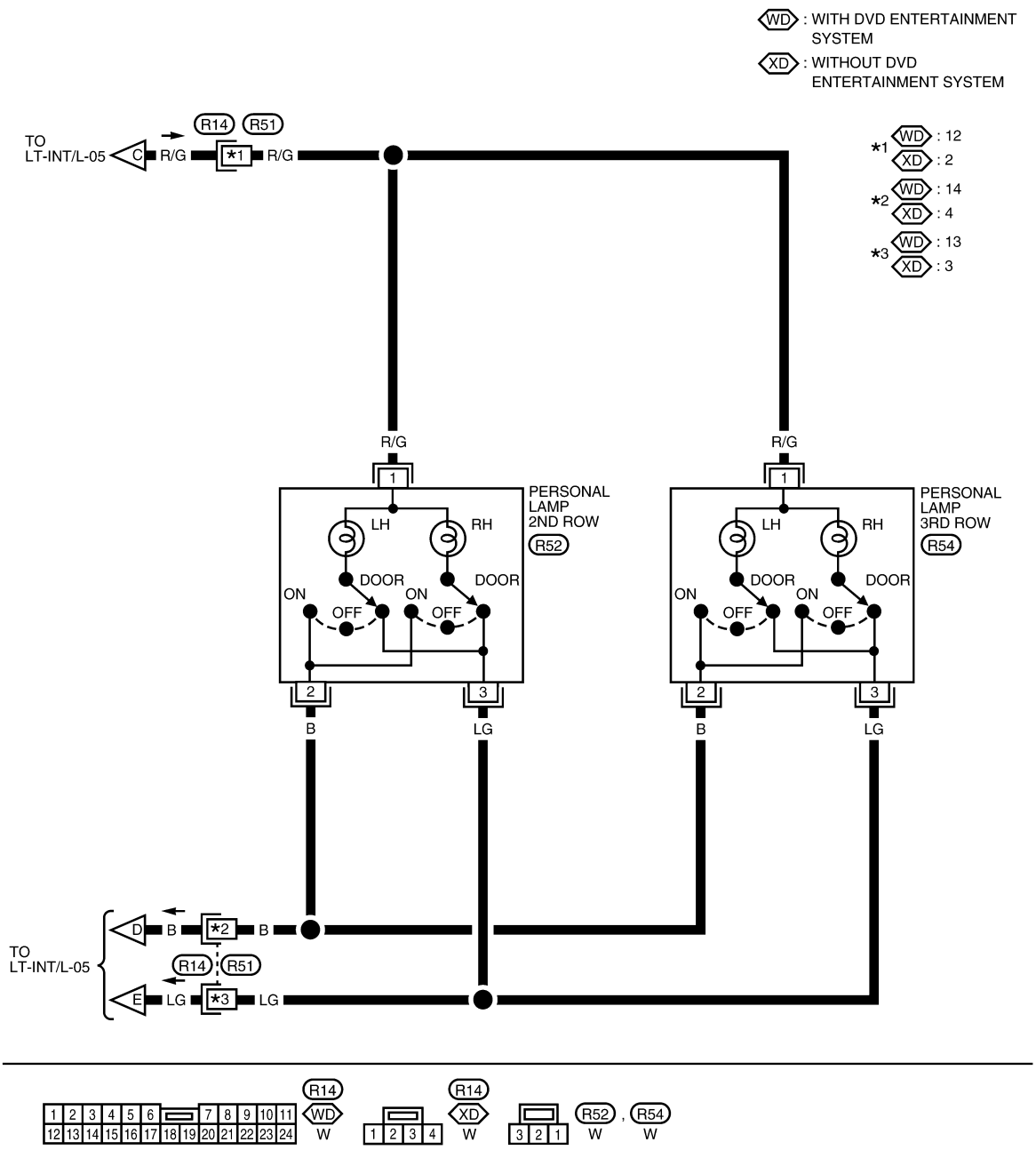
ALLWA0142GB


PRE-CEDING PAGE
C
R/G
R/G
1
PERSONAL LAMP 2ND ROW LH
R5
OFF
DOOR
ON
2
3
LG
B
R/G
1
PERSONAL LAMP 3RD ROW LH
R12
OFF
DOOR
ON
2
3
LG
B
R/G
1
PERSONAL LAMP 2ND ROW RH
R7
OFF
DOOR
ON
2
3
LG
B
R/G
1
PERSONAL LAMP 3RD ROW RH
R13
OFF
DOOR
ON
2
3
LG
B
PRE-CEDING PAGE
D
B
E
LG


3 2 1
R5 W
R7 W
R12 W
R13 W

WKWA4720E

LT-INT/L-07



WKWA4721E

Terminal and Reference Value for BCM

INFOID:0000000004277747

Refer to BCS-11, "Terminal and Reference Value for BCM".

How to Proceed with Trouble Diagnosis

INFOID:0000000004277748

1. Confirm the symptom or customer complaint.

2. Understand operation description and function description. Refer to LT-107, "System Description".
3. Carry out the Preliminary Check. Refer to LT-120, "Preliminary Check".
4. Check symptom and repair or replace the cause of malfunction.
5. Does the interior room lamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

Preliminary Check

INFOID:0000000004277749

SWITCH INSPECTION

- Ensure lamps on demand switch is in the DOOR or ON position.

BCM POWER SUPPLY AND GROUND CIRCUIT CHECK

Refer to BCS-15, "BCM Power Supply and Ground Circuit Inspection".

CONSULT-III Function (BCM)

INFOID:0000000004277750

CONSULT-III can display each diagnostic item using the diagnostic test modes shown following.

BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.
	DATA MONITOR	Displays BCM input/output data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
	SELF-DIAG RESULTS	Displays BCM self-diagnosis results.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
	ECU PART NUMBER	BCM part number can be read.
	CONFIGURATION	Performs BCM configuration read/write functions.

WORK SUPPORT

Operation Procedure

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

Display Item List

Item	Description	CONSULT-III
SET I/L D-UNLCK INTCON	The 30 seconds operating function of the interior room lamps and the ignition keyhole illumination can be selected when front door LH is released (unlocked).	ON/OFF
ROOM LAMP ON TIME SET	The time in order to escalate illumination can be adjusted when the interior room lamps and the ignition keyhole illumination is turned on.	MODE 1 - 7
ROOM LAMP OFF TIME SET	The time in order to diminish illumination can be adjusted when the interior room lamps and the ignition keyhole illumination is turned off.	MODE 1 - 7

Reference between "MODE" and "TIME" for "TURN ON/OFF".

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

DATA MONITOR

Operation Procedure

1. Touch "INT LAMP" on "SELECT TEST ITEM" screen.
2. Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Touch either "ALL SIGNALS" or "SELECTION FROM MENU" on "SELECT MONITOR ITEM" 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 front door LH as judged from the front door switch LH signal. (Door is open: ON/Door is closed: OFF)
DOOR SW-AS	"ON/OFF"	Displays "Door open (ON)/Door closed (OFF)" status, determined from front door switch RH signal.
DOOR SW-RR	"ON/OFF"	Displays "Door open (ON)/Door closed (OFF)" status, determined from sliding door switch RH signal.
DOOR SW-RL	"ON/OFF"	Displays "Door open (ON)/Door closed (OFF)" status, determined from sliding door switch LH signal.
BACK DOOR SW	"ON/OFF"	Displays "Door open (ON)/Door closed (OFF)" status, determined from back door switch signal.
KEY CYL LK-SW	"ON/OFF"	Displays "Door locked (ON)" status, determined from key cylinder lock switch in front door LH.
KEY CYL UN-SW	"ON/OFF"	Displays "Door unlocked (OFF)" status, determined from key cylinder lock switch in front door LH.
CDL LOCK SW	"ON/OFF"	Displays "Door locked (ON)/Door unlocked (OFF)" status, determined from locking detection switch in front door LH.
CDL UNLOCK SW	"ON/OFF"	Displays "Door unlocked (OFF)" status, determined from locking detection switch in front door RH.
KEYLESS LOCK	"ON/OFF"	Displays "Locked (ON)/Other (OFF)" status, determined from lock signal.
KEYLESS UNLOCK	"ON/OFF"	Displays "Unlocked (ON)/Other (OFF)" status, determined from unlock signal.

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	Interior room lamp can be operated by any ON-OFF operations.
IGN ILLUM	Ignition keyhole illumination can be operated by ON-OFF operation.
STEP LAMP TEST	Step lamps can be operated by any ON-OFF operations.
LUGGAGE LAMP TEST	Cargo lamp can be operated by any ON-OFF operations.

Room/Map Lamp Control Does Not Operate

INFOID:0000000004277751

1.CHECK EACH SWITCH

Select "BCM" on CONSULT-III. With "INT LAMP" data monitor, make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-120, "CONSULT-III Function (BCM)" for switches and their functions.

OK or NG

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

2.ACTIVE TEST

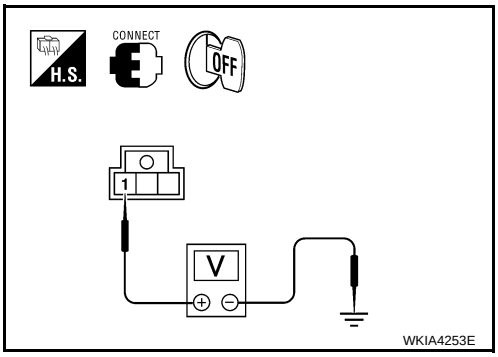
1. Select "BCM" on CONSULT-III. Select "INT LAMP" active test.
2. When lamps on demand switch is in DOOR position, use active test to make sure interior room lamp operates.

OK or NG

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

3.CHECK ROOM/MAP LAMPS INPUT

1. Turn ignition switch OFF.
2. Check voltage between room/map lamps harness connector terminal and ground.



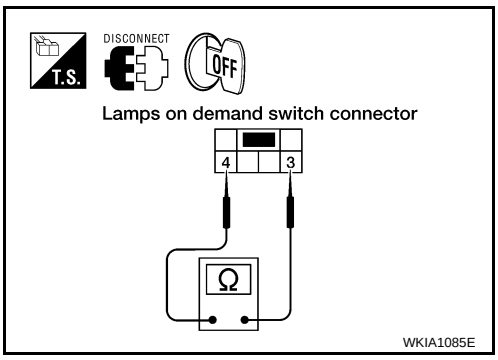
Terminals		(–)	Voltage (approx.)
(+)			
Room/map lamps connector	Terminal		
R9	1	Ground	Battery voltage

OK or NG

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

4.CHECK LAMPS ON DEMAND SWITCH

1. Disconnect lamps on demand switch connector.
2. Check continuity between lamps on demand switch terminals.



Lamps on demand switch		Condition	Continuity
Terminal			
3	4	Lamps on demand switch position: DOOR	Yes
		Lamps on demand switch position: OFF	No

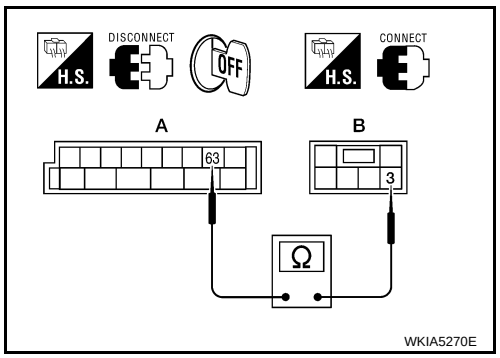
OK or NG

OK >> GO TO 5.
NG >> Replace lamps on demand switch.

5.CHECK LAMPS ON DEMAND CIRCUIT

1. Connect lamps on demand switch connector.
2. Turn lamps on demand switch to DOOR position.

3. Disconnect BCM connector.
4. Check continuity between BCM harness connector terminal and lamps on demand switch harness connector terminal.



A		B		Continuity
BCM connector	Terminal	Lamps on demand switch connector	Terminal	
M20	63	M108	3	Yes

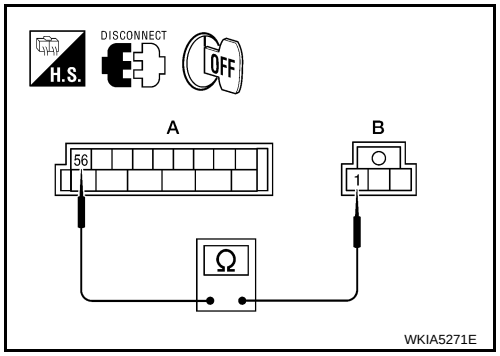
OK or NG

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

NG >> Repair harness or connector.

6. CHECK ROOM/MAP LAMPS CIRCUIT

1. Disconnect BCM connector and room/map lamps connector.
2. Check continuity between BCM harness connector terminal and room/map lamps harness connector terminal.



A		B		Continuity
BCM connector	Terminal	Room/map lamps connector	Terminal	
M20	56	R9	1	Yes

OK or NG

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

NG >> Repair harness or connector between BCM and room/map lamps or between room/map lamps and lamps on demand switch.

Personal Lamp Control Does Not Operate (Room/Map Lamps Operate)

INFOID:0000000004277752

1. CHECK EACH DOOR SWITCH

Select "BCM" on CONSULT-III. With "INT LAMP" data monitor, make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-107, "System Description" for switches and their function.

OK or NG

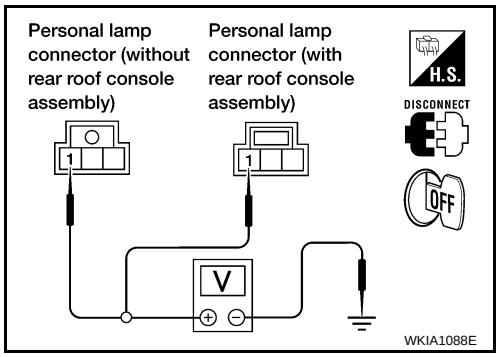
OK >> GO TO 2.

NG >> Inspect malfunctioning door switch.

2. CHECK PERSONAL LAMP OUTPUT

1. Turn ignition switch OFF.
2. Confirm lamps on demand switch is in the DOOR position.
3. Disconnect personal lamp connector.
4. Open any door.
5. Check voltage between personal lamp harness connector terminal 1 and ground.

1 - Ground : Battery voltage should exist.



OK or NG

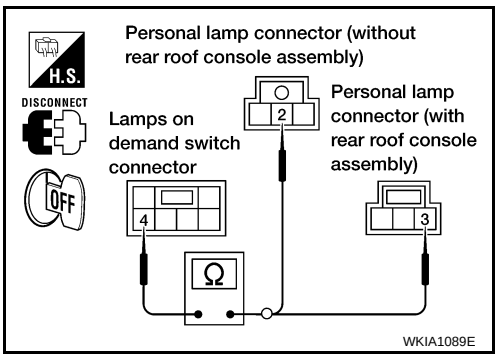
OK >> GO TO 3.

NG >> Repair harness or connector.

3.CHECK PERSONAL LAMP CONTROL CIRCUIT

1. Disconnect lamps on demand switch connector.
2. Check continuity between lamps on demand switch harness connector M108 terminal 4 and personal lamp harness connector terminal 2 (without rear roof console assembly) or terminal 3 (with rear roof console assembly).

4 - 2 or 3 : Continuity should exist.



OK or NG

OK >> Replace personal lamp.
NG >> Repair harness or connector.

Ignition Keyhole Illumination Control Does Not Operate

INFOID:0000000004277753

1.CHECK EACH SWITCH

Select "BCM" on CONSULT-III. With "INT LAMP" data monitor, make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-120, "CONSULT-III Function (BCM)" for switches and their functions.

OK or NG

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

2.ACTIVE TEST

1. Select "BCM" on CONSULT-III. Select "INT LAMP".
2. Select "IGN ILLUM" active test to make sure lamp operates.

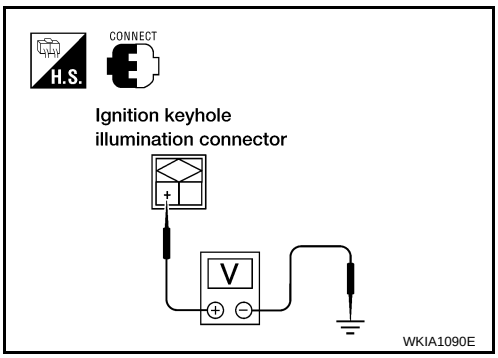
OK or NG

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

3.CHECK IGNITION KEYHOLE ILLUMINATION INPUT

1. Check voltage between ignition keyhole illumination harness connector M25 terminal + and ground.

+ - Ground : Battery voltage should exist.



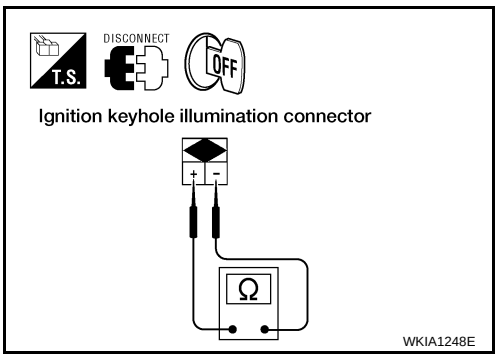
OK or NG

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

4.CHECK IGNITION KEYHOLE ILLUMINATION BULB

1. Turn ignition switch OFF.
2. Disconnect ignition keyhole illumination connector.
3. Check continuity between ignition keyhole illumination terminals + and –.

+ - – : Continuity should exist.



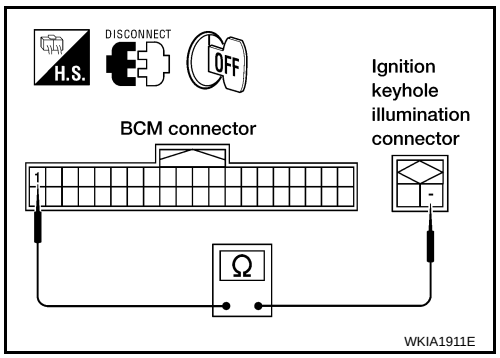
OK or NG

OK >> GO TO 5.
NG >> Replace ignition keyhole illumination bulb.

5.CHECK IGNITION KEYHOLE ILLUMINATION CONTROL CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector M18 terminal 1 and ignition keyhole illumination harness connector M25 terminal –.

– - 1 : Continuity should exist.



OK or NG

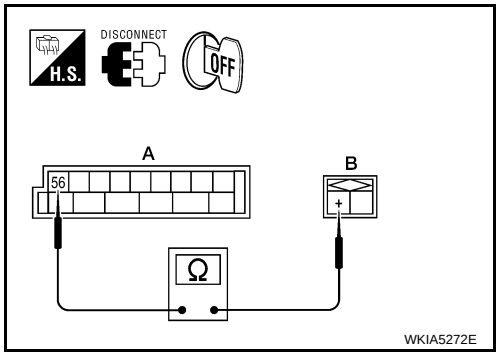
OK >> Replace BCM if ignition keyhole illumination does not work after setting the connector again. Refer to BCS-17, "Removal and Installation of BCM".

NG >> Repair harness or connector.

6. CHECK IGNITION KEYHOLE ILLUMINATION POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and ignition keyhole illumination connector.
3. Check continuity between BCM connector M20 (A) terminal 56 and ignition keyhole illumination connector M25 (B) terminal +.

+ - 56 : Continuity should exist.



OK or NG

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

NG >> Repair harness or connector.

All Step/Foot Lamps Do Not Operate

INFOID:0000000004277754

1. CHECK EACH DOOR SWITCH

Select "BCM" on CONSULT-III. With "INT LAMP" data monitor, make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-120, "CONSULT-III Function (BCM)" for switches and their functions.

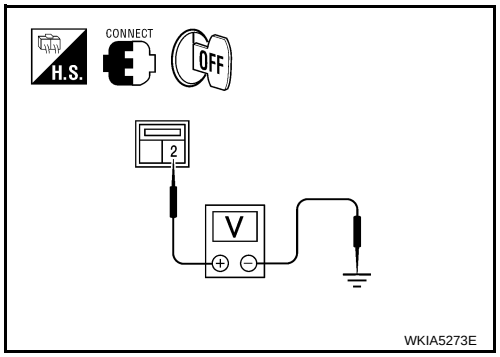
OK or NG

OK >> GO TO 2.

NG >> Inspect malfunctioning switch system.

2. CHECK STEP LAMP POWER SUPPLY

1. Turn ignition switch OFF.
2. Check voltage between front step lamp LH harness connector terminal and ground.



Terminals		(–)	Voltage (approx.)
(+)			
Front step lamp LH connector	Terminal		
D11	2	Ground	Battery voltage

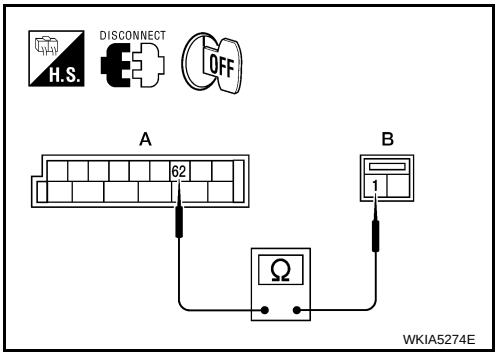
OK or NG

OK >> GO TO 3.

NG >> GO TO 4.

3. CHECK STEP LAMP CONTROL CIRCUIT

1. Disconnect BCM connector and front step lamp LH connector.
2. Check continuity between BCM harness connector terminal and front step lamp LH harness connector terminal.



A		B		Continuity
BCM connector	Terminal	Front step lamp LH connector	Terminal	
M20	62	D11	1	Yes

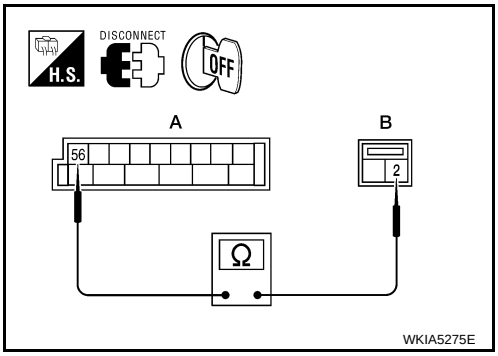
OK or NG

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

NG >> Repair harness or connector.

4. CHECK STEP LAMP POWER SUPPLY CIRCUIT

1. Disconnect BCM connector and front step lamp LH connector.
2. Check continuity between BCM harness connector terminal and front step lamp LH harness connector terminal.



A		B		Continuity
BCM connector	Terminal	Front step lamp LH connector	Terminal	
M20	56	D11	2	Yes

OK or NG

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

NG >> Repair harness or connector.

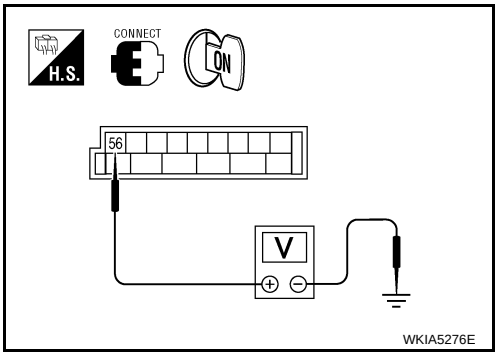
All Interior Room Lamps Do Not Operate

INFOID:0000000004277755

1. CHECK POWER SUPPLY CIRCUIT

1. All interior room lamps switch are OFF.
2. Turn ignition switch ON.
3. Check voltage between BCM harness connector M20 terminal 56 and ground.

56 - Ground : Battery voltage should exist.



OK or NG

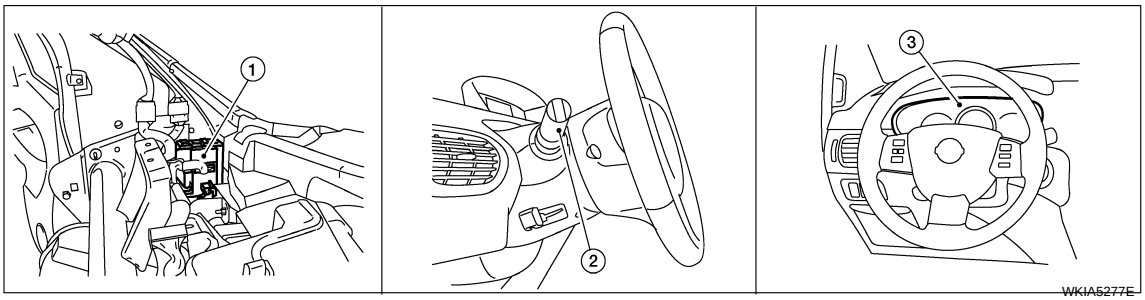
OK >> Repair harness or connector. In a case of making a short circuit, be sure to disconnect battery negative cable after repairing harness and then reconnect.

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

ILLUMINATION

Component Parts and Harness Connector Location

INFOID:0000000004277756



1. BCM M18, M20 (view with instrument panel removed)
2. Combination switch (lighting switch) M28
3. Combination meter M24 (illumination control)

System Description

INFOID:0000000004277757

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 (if equipped) 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 controls the tail lamp relay. This relay, when energized, directs power to the illumination lamps, which then illuminate.

Power is supplied at all times
- to ignition relay, located in the IPDM E/R, and
- through 15A fuse (No. 41, located in the IPDM E/R)
- to tail lamp relay, located in the IPDM E/R, and
- to CPU of the IPDM E/R, and
- through 50A fusible link (letter **j**, located in the fuse and fusible link box)
- to BCM terminal 70, and
- through 15A fuse [No. 3, located in fuse block (J/B)]
- to BCM terminal 57, and
- through 15A fuse (No. 34, located in the IPDM E/R)
- to CPU of the IPDM E/R, and
- through 15A fuse [No.19, located in fuse block (J/B)]
- to combination meter terminal 40.

With the ignition switch in the ON or START position, power is supplied
- to ignition relay, located in the IPDM E/R, and
- through 10A fuse [No. 16, located in the fuse block (J/B)]
- to BCM terminal 38, and
- through 10A fuse [No. 14, located in the fuse block (J/B)]
- to combination meter terminal 38.

With the ignition switch in the ACC or ON position, power is supplied
- through 10A fuse [No. 4, located in the fuse block (J/B)]
- to BCM terminal 11.

Ground is supplied
- to BCM terminal 67 and
- to combination meter terminals 20 and 21
- through grounds M57, M61 and M79, and
- to IPDM E/R terminals 38 and 60
- through grounds E9, E15 and E24.

ILLUMINATION OPERATION BY LIGHTING SWITCH

With the lighting switch in the 1ST or 2ND position or if the auto light system (if equipped) 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 which, when energized, directs power

- through IPDM E/R terminal 22
- to A/T device (illumination) terminal 3
- to front heated seat switch LH (illumination) terminal 5 (with heated seats)
- to pedal adjusting switch (illumination) terminal 5 (with adjustable pedals)
- to TCS OFF switch (illumination) terminal 3 (without VDC)
- to VDC OFF switch (illumination) terminal 3 (with VDC)
- to AV switch (illumination) terminal 3
- to hazard switch (illumination) terminal 3
- to main power window and door lock/unlock switch terminal 16
- to power window and door lock/unlock switch RH terminal 5
- to audio unit terminal 8
- to rear sonar system OFF switch terminal 5 (with rear sonar system)
- to lamps on demand switch terminal 5
- to DVD player terminal 12 (with DVD entertainment system)
- to glove box lamp terminal +
- to display unit terminal 4 (with monochrome display unit)
- to display control unit terminal 14 (with color display unit)
- to front air control terminal 8
- to NAVI control unit terminal 61 (with NAVI)
- to rear air control (rear) terminal 10
- to front heated seat switch RH (illumination) terminal 5 (with heated seats)
- to console lamp terminal 2
- to automatic door main switch terminal 5 (with power sliding door)
- to Bluetooth on indicator terminal 3 (with Bluetooth)
- to rear audio remote control unit terminal 6 (with rear audio remote control unit)
- through resistor-1 terminal 2 (with steering wheel audio control switches)
- through resistor-1 terminal 1 (with steering wheel audio control switches)
- through combination switch (spiral cable) terminal 26 (with steering wheel audio control switches)
- to spiral cable (steering switch) terminal 18 (with steering wheel audio control switches).

Illumination is controlled

- through combination meter (illumination control) terminal 1
- to A/T device terminal 4
- to TCS OFF switch terminal 4 (without VDC)
- to VDC OFF switch terminal 4 (with VDC)
- to AV switch terminal 4
- to hazard switch terminal 4
- to main power window and door lock/unlock switch terminal 12
- to power window and door lock/unlock switch RH terminal 1
- to audio unit terminal 7
- to rear sonar system OFF switch terminal 4 (with rear sonar system)
- to lamps on demand switch terminal 6
- to DVD player terminal 10 (with DVD entertainment system)
- to front air control terminal 9
- through combination switch (spiral cable) terminal 27 (with steering wheel audio control switches)
- to spiral cable (steering switch) terminal 21 (with steering wheel audio control switches).
- to console lamp terminal 1 (with power sliding door) and
- to automatic door main switch terminal 7 (with power sliding door).

Ground is supplied

- to glove box lamp terminal –
- to display unit terminal 6 (with monochrome display unit)
- to display control unit terminal 3 (with color display unit)
- to console lamp terminal 1 (without power sliding door)
- to rear air control (front) terminal 1
- to combination meter terminals 20 and 21
- through grounds M57, M61 and M79, and
- to rear audio remote control unit terminal 15 (with rear audio remote control unit)
- through grounds B7 and B19, and
- to NAVI control unit terminal 1 (with NAVI)
- to rear air control (rear) terminal 9
- through grounds B117 and B132.

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 (if equipped) is activated and the ignition switch is turned from ON or ACC to OFF, the battery saver control function is activated.
Under this condition, the illumination lamps remain illuminated for 5 minutes, then the illumination lamps are turned off.
When the lighting switch is turned from OFF to 1ST or 2ND position (or if auto light system is activated) after illumination lamps are turned off by the battery saver control, the illumination lamps illuminate again.
Exterior lamp battery saver control mode can be changed by the function setting of CONSULT-III and the display (with NAVI).

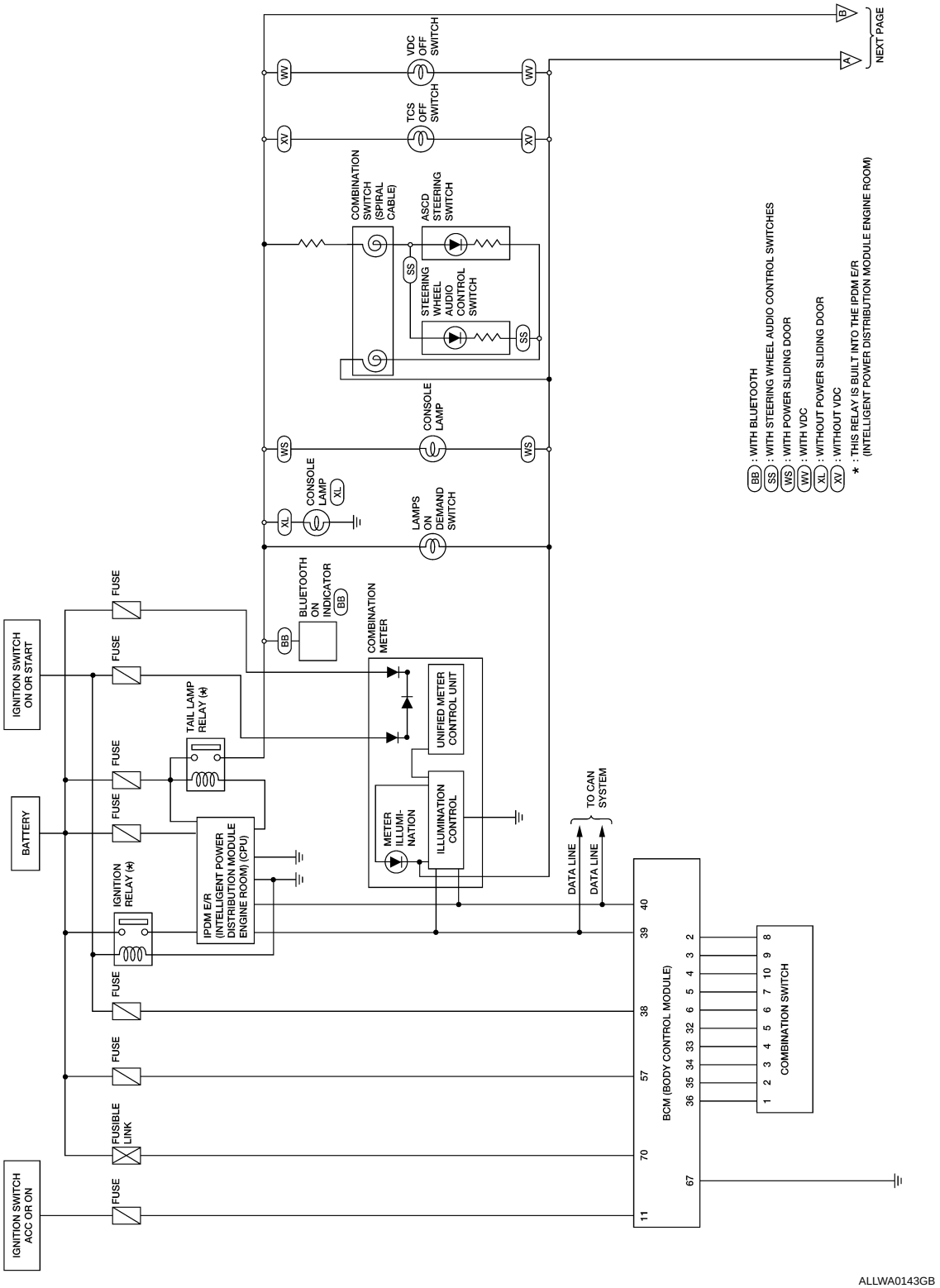
CAN Communication System Description

INFOID:0000000004277758

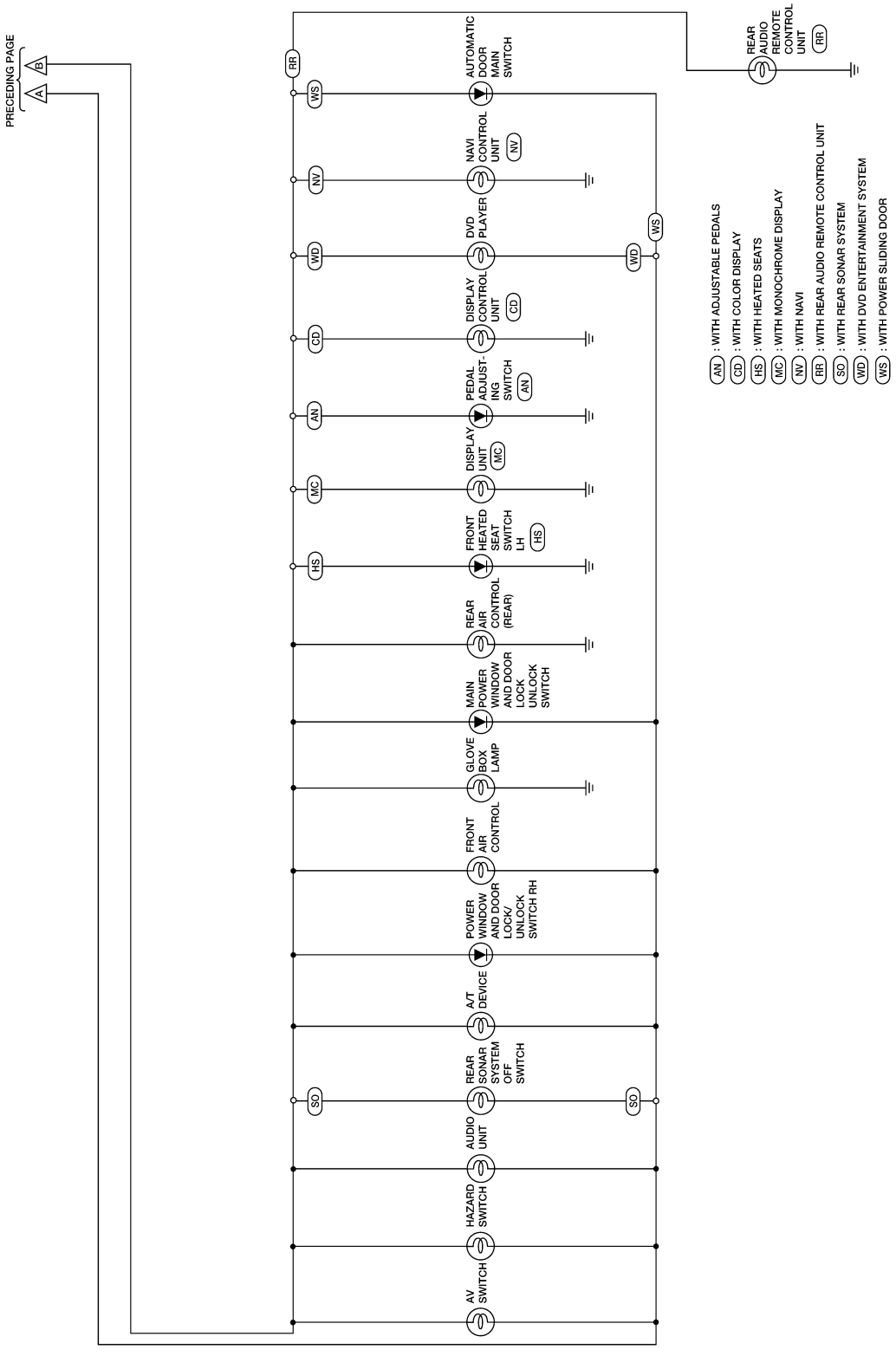
Refer to LAN-3, "CAN Communication System".

Schematic

INFOID:0000000004277759

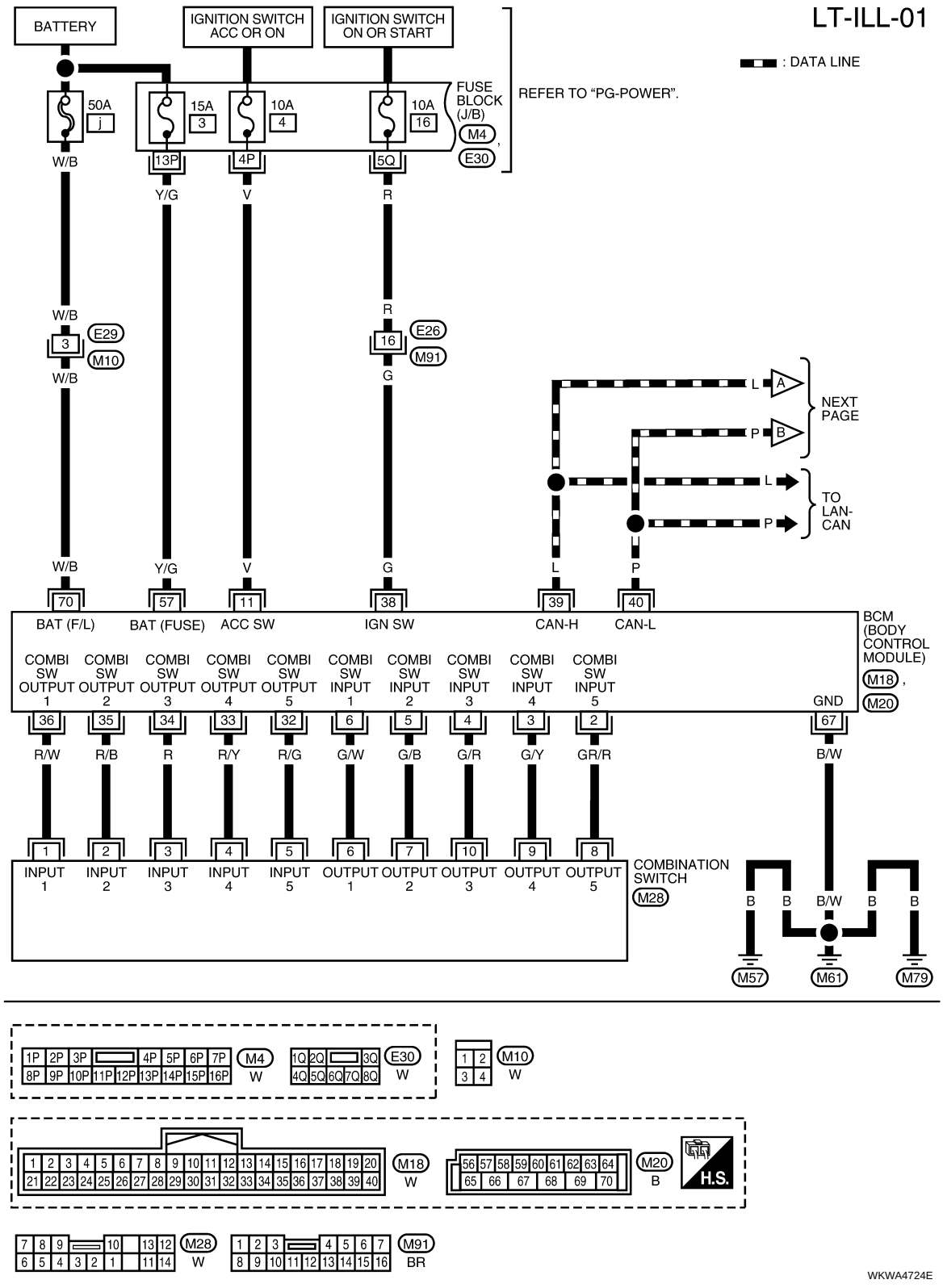


ALLWA0143GB


PRECEDING PAGE
B
A
RR
WS
AUTOMATIC DOOR MAIN SWITCH
NV
NAVI CONTROL UNIT
NV
WD
DVD PLAYER
WD
WS
CD
DISPLAY CONTROL UNIT
CD
AN
PEDAL ADJUST-ING SWITCH
AN
MC
DISPLAY UNIT
MC
HS
FRONT HEATED SEAT SWITCH LH
HS
REAR AIR CONTROL (REAR)
MAIN POWER WINDOW AND DOOR LOCK UNLOCK SWITCH
GLOVE BOX LAMP
FRONT AIR CONTROL
POWER WINDOW AND DOOR LOCK/ UNLOCK SWITCH RH
A/T DEVICE
SO
REAR SONAR SYSTEM OFF SWITCH
SO
AUDIO UNIT
HAZARD SWITCH
AV SWITCH
REAR AUDIO REMOTE CONTROL UNIT
RR
AN : WITH ADJUSTABLE PEDALS
CD : WITH COLOR DISPLAY
HS : WITH HEATED SEATS
MC : WITH MONOCHROME DISPLAY
NV : WITH NAVI
RR : WITH REAR AUDIO REMOTE CONTROL UNIT
SO : WITH REAR SONAR SYSTEM
WD : WITH DVD ENTERTAINMENT SYSTEM
WS : WITH POWER SLIDING DOOR
WKWA4723E

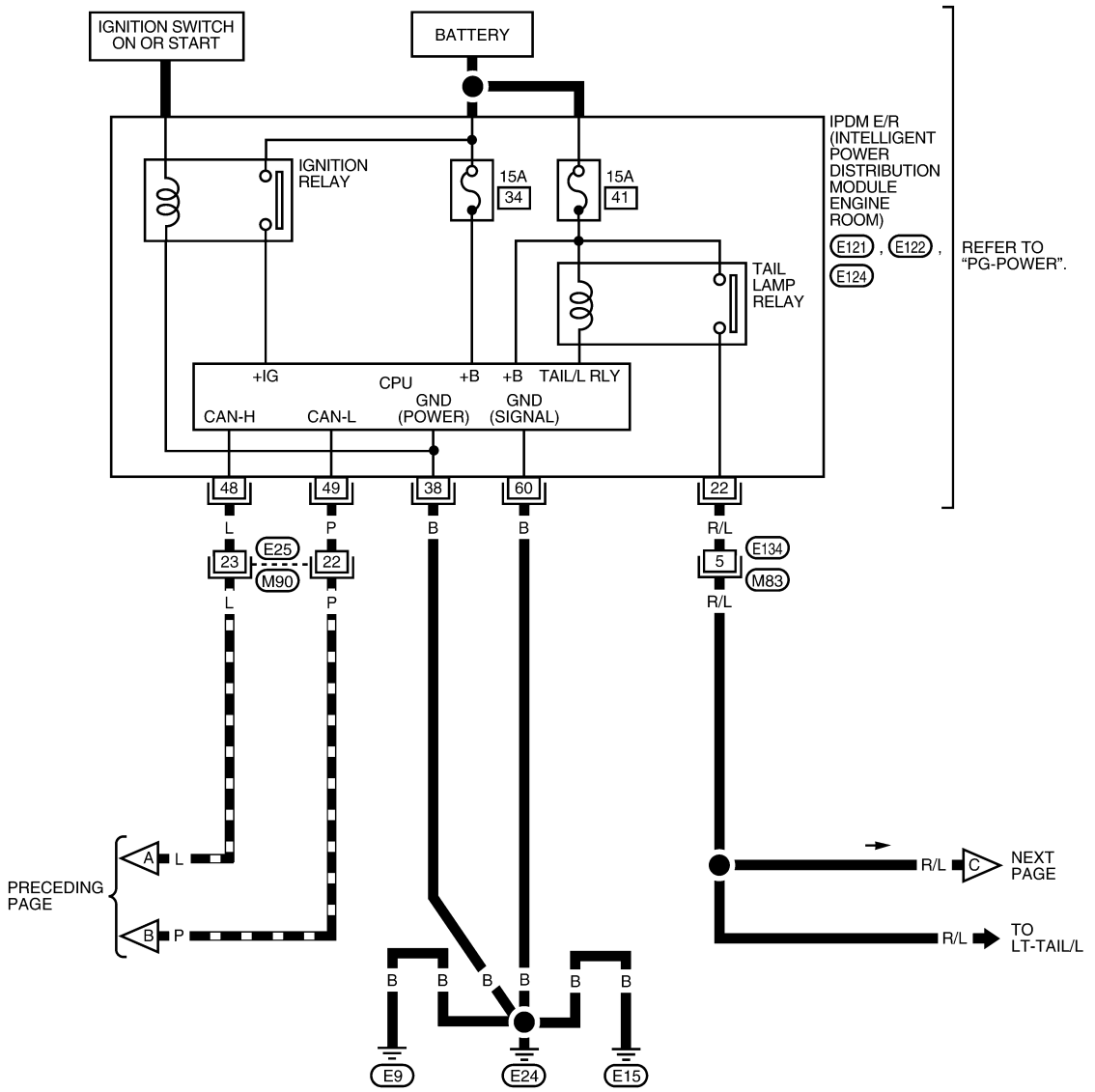
Wiring Diagram - ILL -

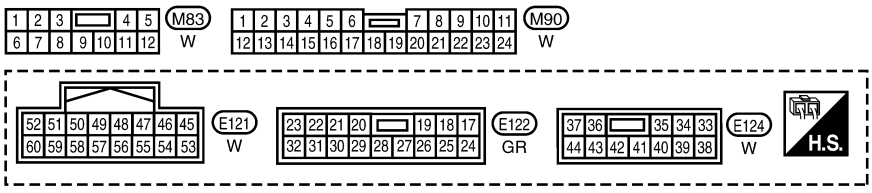
INFOID:0000000004277760



LT-ILL-02

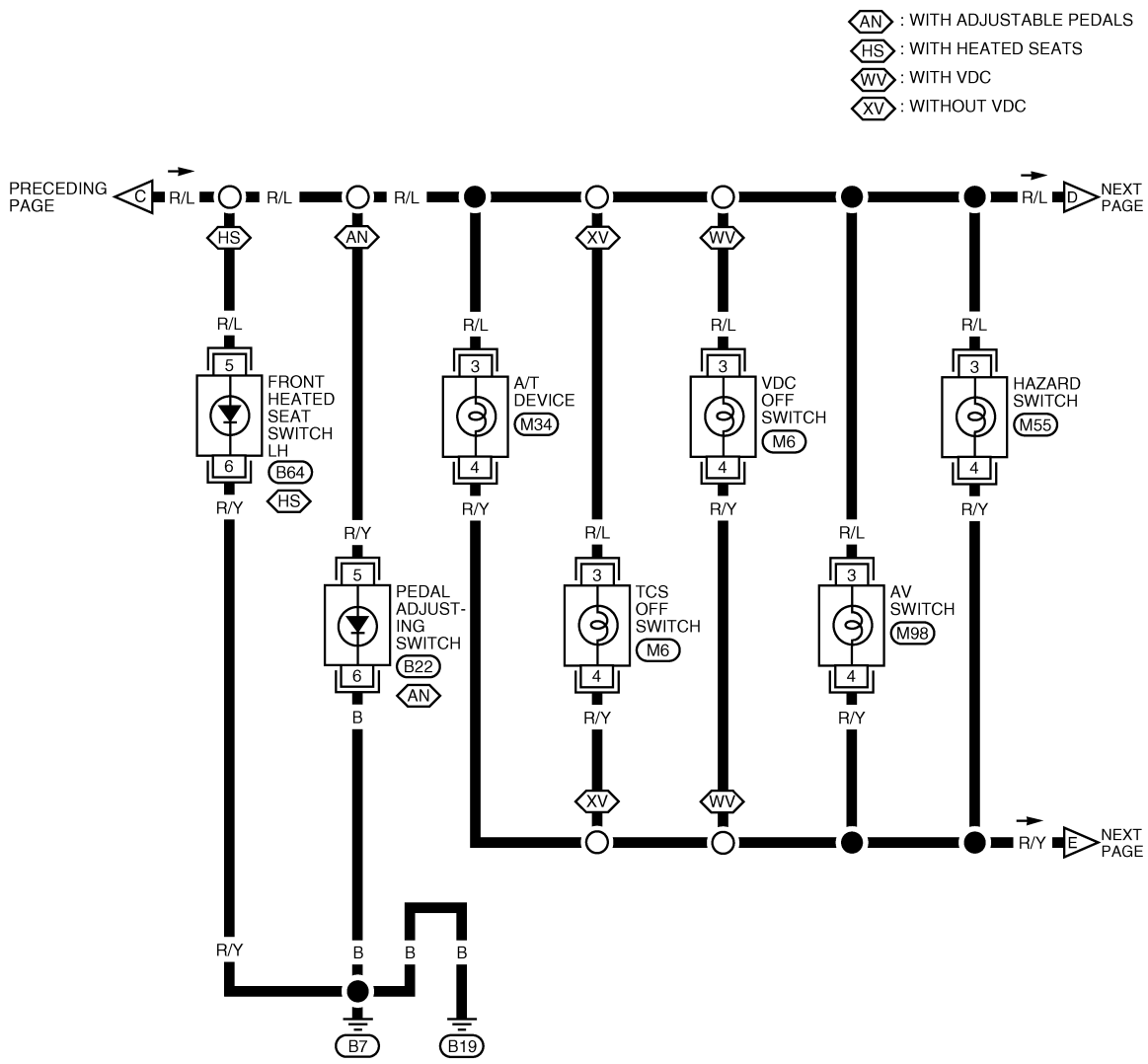
: DATA LINE

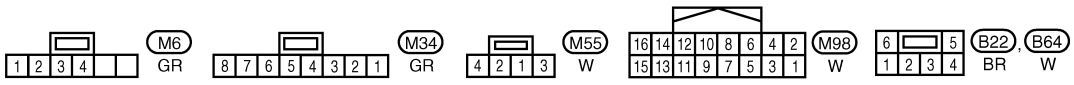




WKWA4725E

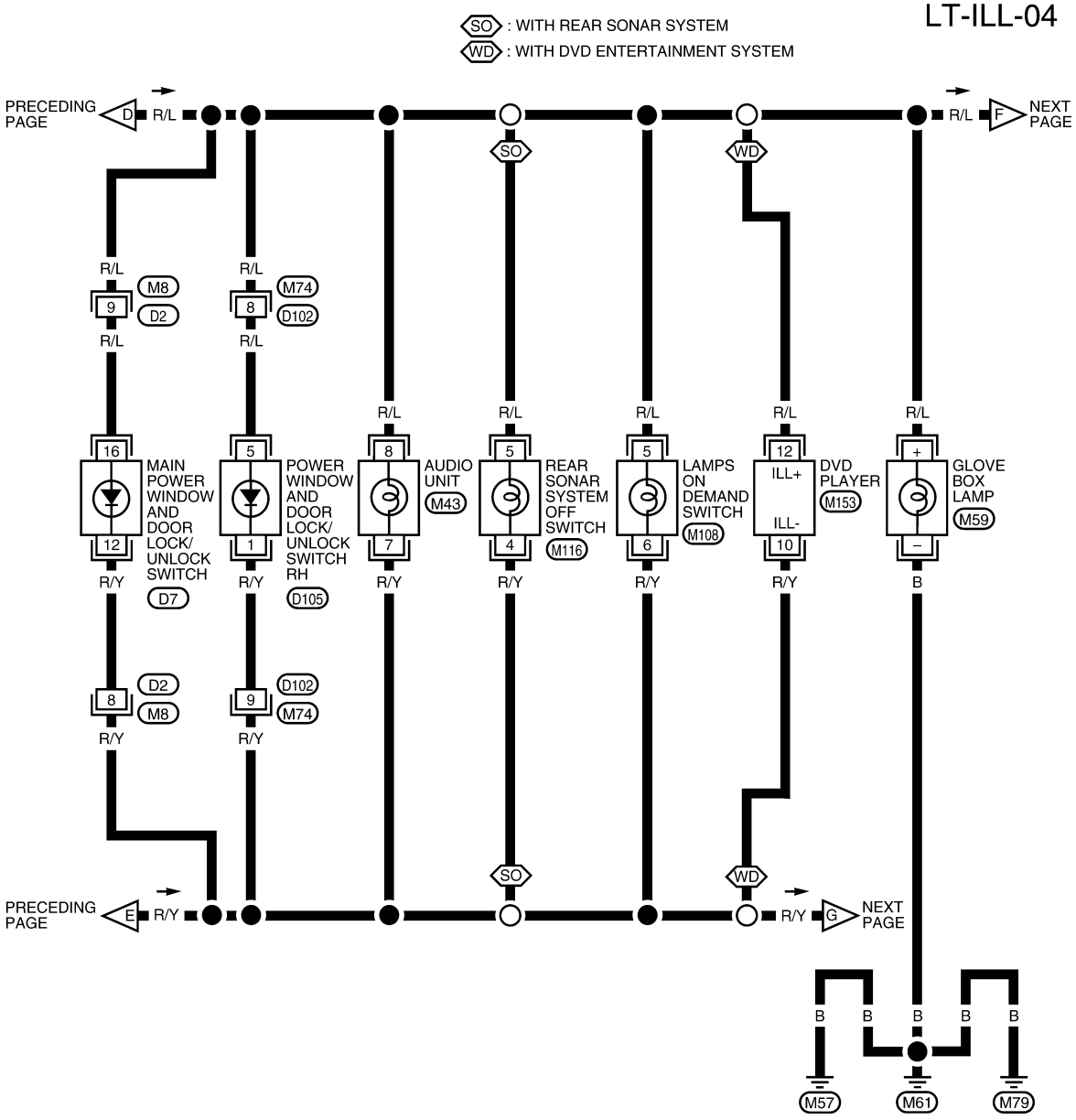
LT-ILL-03

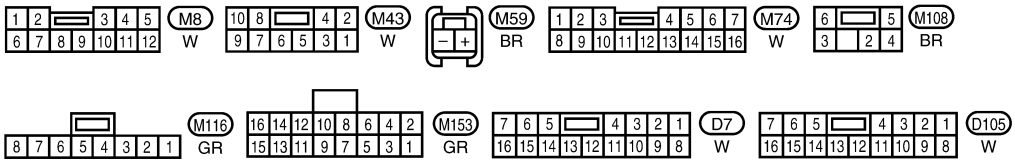




WKWA4726E

LT-ILL-04





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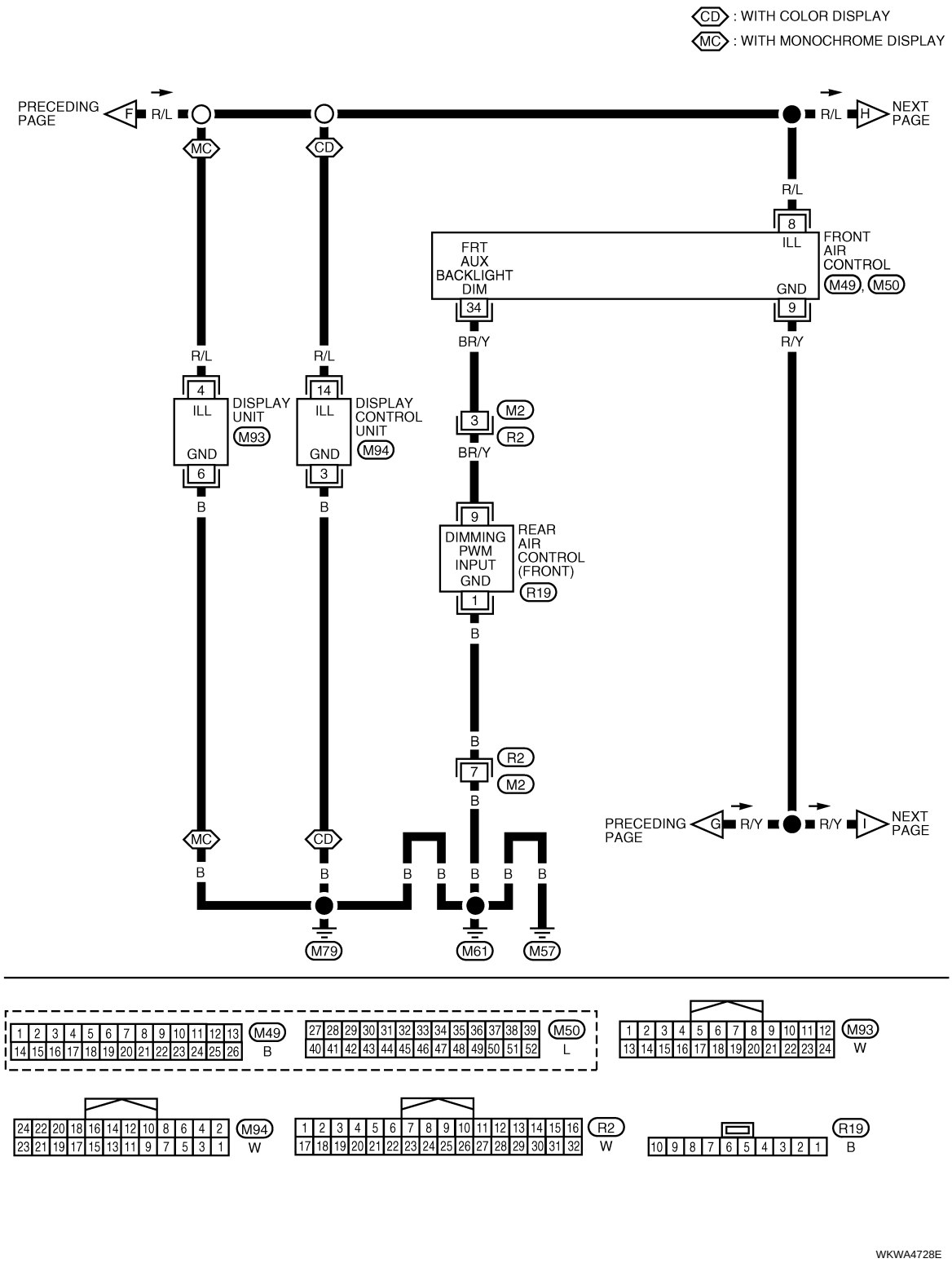
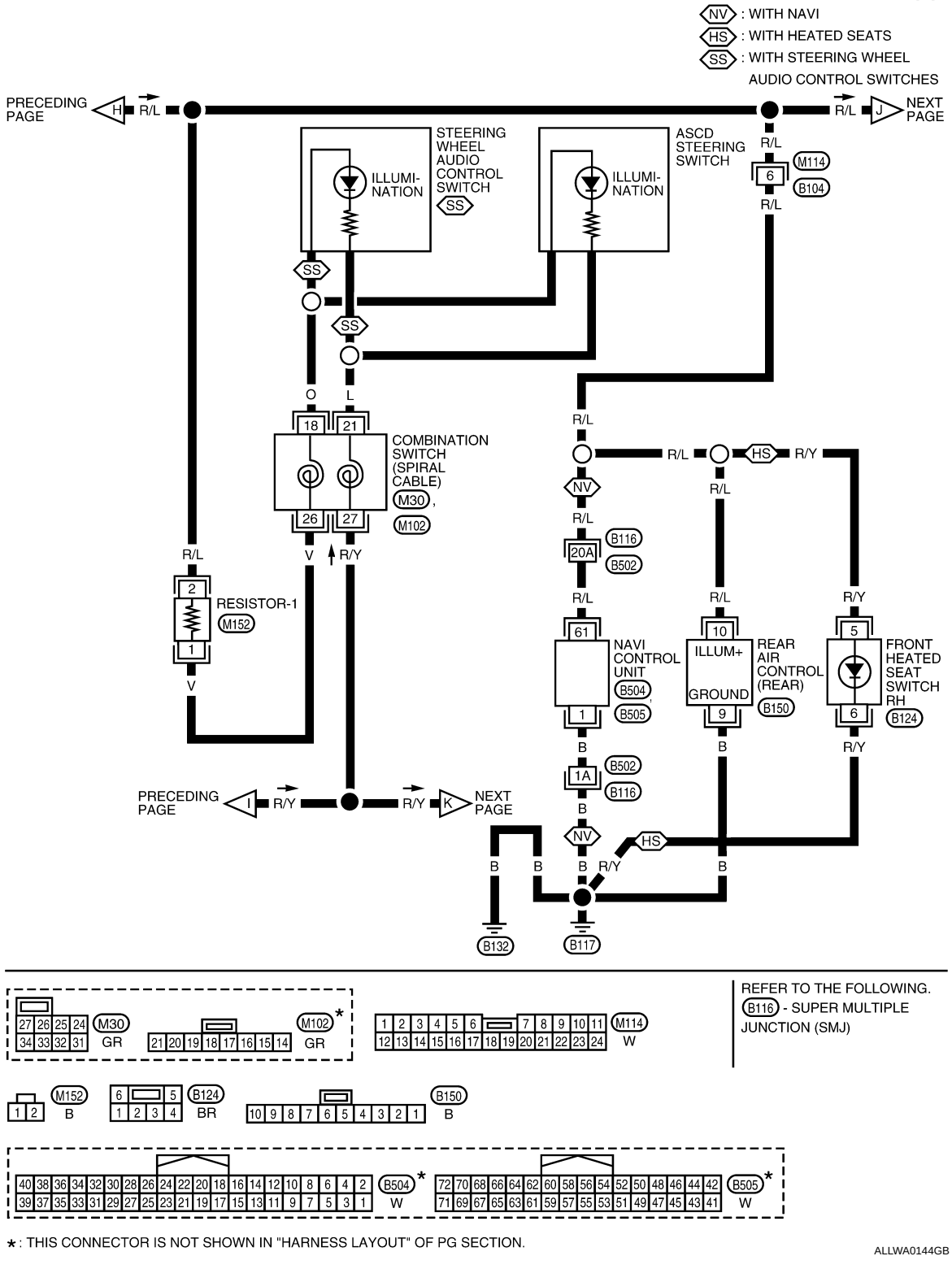
LT-ILL-05



WKWA4728E

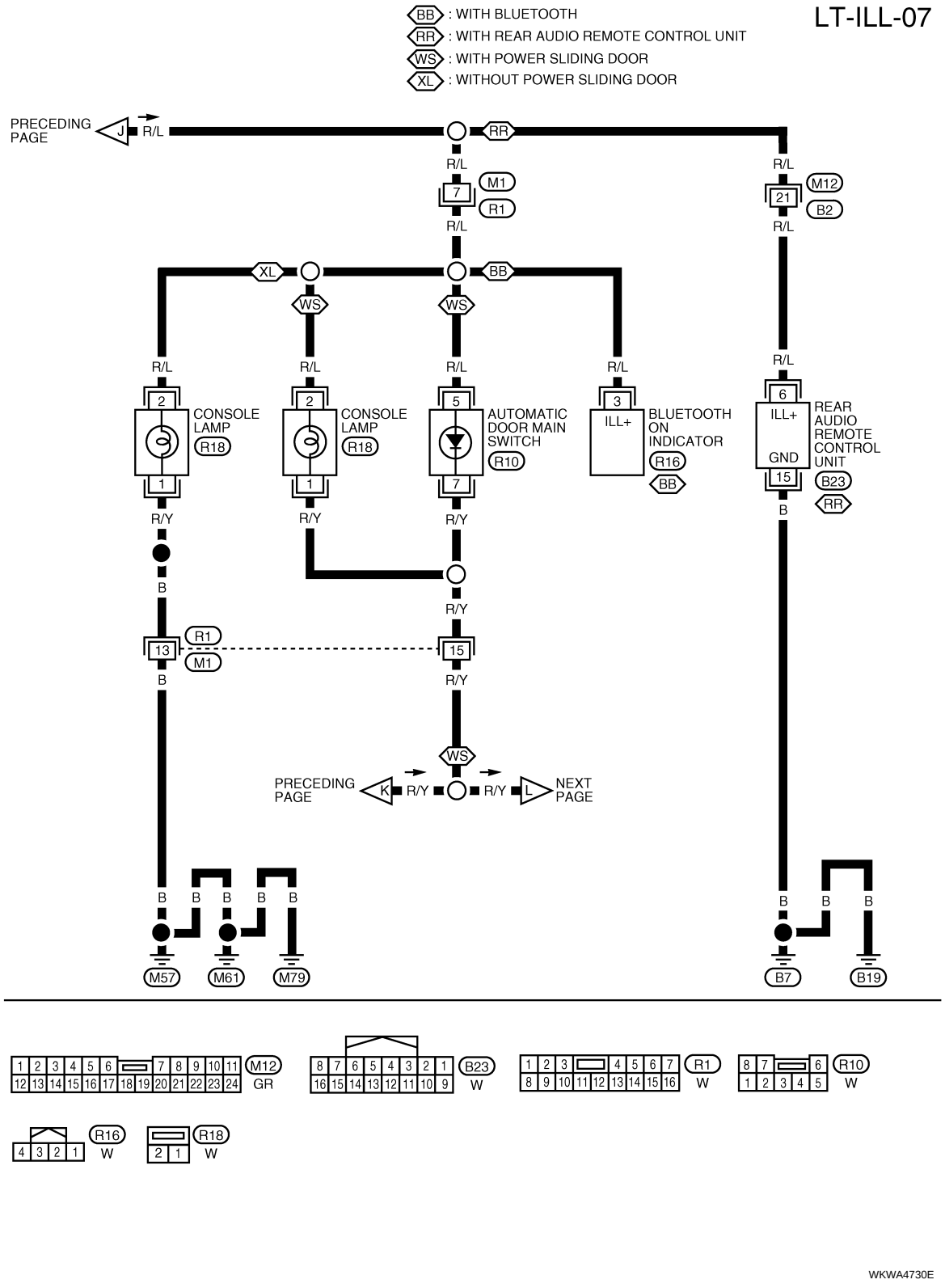
LT-ILL-06



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

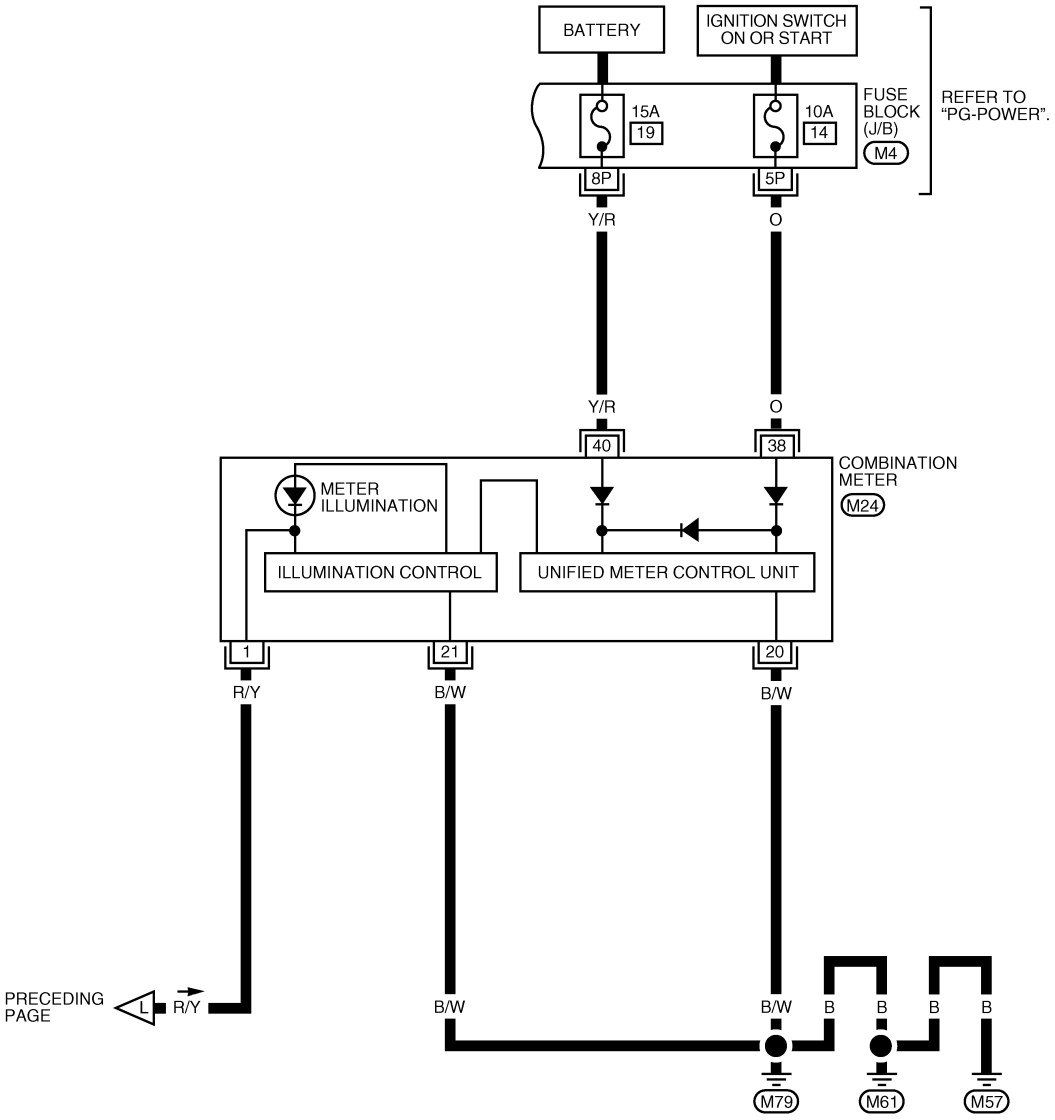
ALLWA0144GB

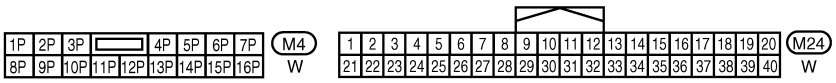
LT-ILL-07



WKWA4730E

LT-ILL-08





WKWA4731E

BULB SPECIFICATIONS

Headlamp

INFOID:0000000004277761

Item	Wattage (W)*
Low	51
High	60

*: Always check with the Parts Department for the latest parts information.

Exterior Lamp

INFOID:0000000004277762

Item		Wattage (W)*
Front combination lamp	Turn signal lamp/parking lamp	29/8
	Cornering lamp	27
Rear combination lamp	Stop/Tail lamp	27/7
	Turn signal lamp	27
	Back-up lamp	18
Fog lamp		55
License plate lamp		5
High-mounted stop lamp		13

*: Always check with the Parts Department for the latest parts information.

Interior Lamp/Illumination

INFOID:0000000004277763

Item	Wattage (W)*
Glove box lamp	3.4
Ignition keyhole illumination lamp	0.74
Room/Map lamp	8
Console lamp	LED
A/T device lamp	3
Foot lamp	3.4
Step lamp	3.8
Cargo lamp	7
Vanity lamp	1.32
Personal lamp (with rear roof console assembly)	8
Personal lamp (without rear roof console assembly)	8
Running board lamp	3.4

*: Always check with the Parts Department for the latest parts information.