SECTION LT
LIGHTING SYSTEM

CONTENTS

SERVICE INFORMATION

PRECAUTIONS

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

INFOID:0000000003288029

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 “SUPPLEMENTAL RESTRAINT SYSTEM” and “SEAT BELTS” 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 “SUPPLEMENTAL RESTRAINT SYSTEM”.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

Precaution for Battery Service

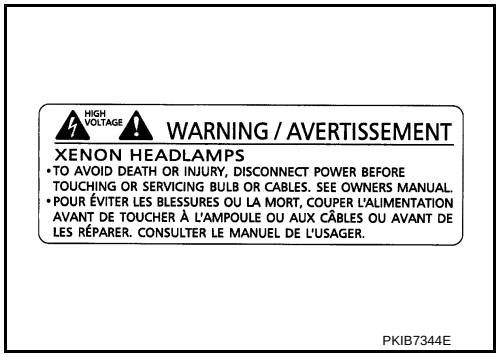
INFOID:0000000003288030

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

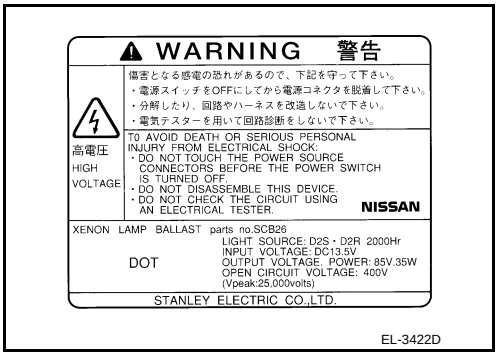
General Precaution for Service Operation

INFOID:0000000001647284

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



- Install the xenon headlamp bulb socket correctly. If it is installed improperly, high-voltage leak or corona discharge may occur that can melt the bulb, connector, and housing. Do not illuminate the xenon headlamp bulb out of the headlamp housing. Doing so can cause fire and harm your eyes.
- When the bulb has burned out, wrap it in a thick vinyl bag and discard. Do not break the bulb.
- Leaving the bulb removed from the headlamp housing for a long period of time can deteriorate the performance of the lens and reflector (dirt, clouding). Always prepare a new bulb and have it on hand when replacing the bulb.



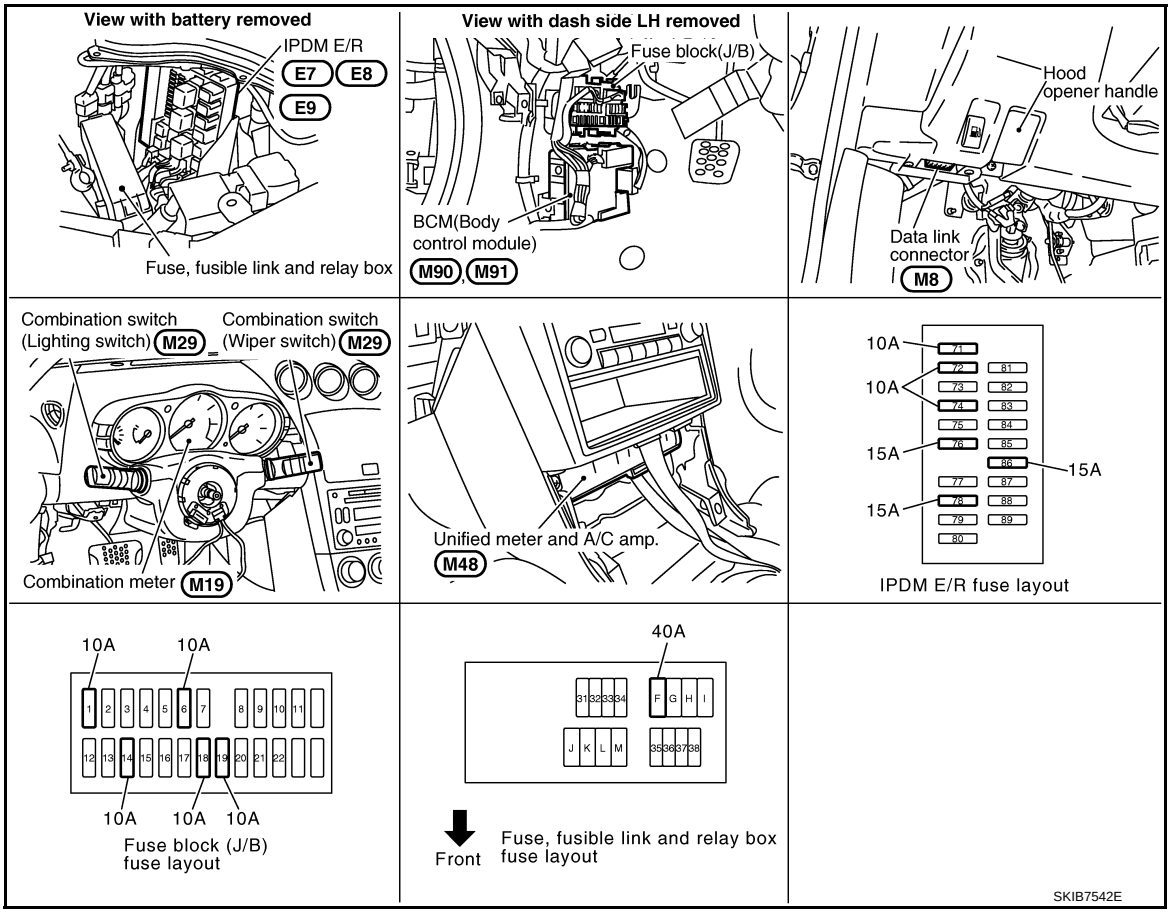
EL-3422D

- When adjusting the headlamp aiming, turn the aiming adjustment screw only in the tightening direction. (If it is necessary to loosen the screw, first fully loosen the screw, and then turn it in the tightening direction.)
- Do not use organic solvent (paint thinner or gasoline) to clean lamps and to remove old sealant.

HEADLAMP (FOR USA)

Component Parts and Harness Connector Location

INFOID:0000000001647285



System Description

INFOID:0000000001647286

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 signal requesting the headlamps (and tail lamps) illuminate. This input signal is communicated to the IPDM E/R (intelligent power distribution module engine room) through the CAN communication lines. The CPU (central processing unit) of the IPDM E/R controls the headlamp high and headlamp low relay coils. These relays, when energized, direct power to the respective headlamps, which then illuminate.

OUTLINE

Power is supplied at all times
- to headlamp high relay, located in IPDM E/R and
- to headlamp low relay, located in IPDM E/R, from battery directly,
- through 40A fusible link [letter F, located in fuse, fusible link and relay box]
- to BCM terminal 55,
- through 10A fuse [No.18, located in fuse block (J/B)]
- to BCM terminal 42,
- through 15A fuse [No.78 located in IPDM E/R]
- to CPU located in IPDM E/R,
- through 10A fuse [No.71,located in IPDM E/R]
- to CPU located in IPDM E/R,
- through 10A fuse [No.19, located in fuse block (J/B)]
- to combination meter terminal 24.

With ignition switch in ON or START position, power is supplied
- to CPU located in IPDM E/R,
- through 10A fuse [No. 1, located in fuse block (J/B)]
- to BCM terminal 38,

• through 10A fuse [No.14, located in fuse block (J/B)]
• to combination meter terminal 23.
With ignition switch in ACC or ON position, power is supplied
• through 10A fuse [No. 6, located in fuse block (J/B)]
• to BCM terminal 11.
Ground is supplied
• to BCM terminal 52
• through grounds M30 and M66,
• to IPDM E/R terminals 38 and 60
• through grounds E17, E43 and B102 (with VDC system, navigation system or telephone)
• through grounds E17, E43 and F152 (without VDC system, navigation system and telephone),
• to combination meter terminals 10, 11 and 12
• through grounds M30 and M66.

HEADLAMP OPERATION

Low Beam Operation

With the lighting switch in 2ND position, the BCM receives input signal from combination switch reading function (Refer to BCS-4, "System Description") the headlamp to illuminate. This input signal is communicated to the IPDM E/R through the CAN communication lines. The CPU located in the IPDM E/R controls the headlamp low relay coil, which when energized, supplies power,
• through 15A fuse [No. 76, located in IPDM E/R]
• through IPDM E/R terminal 20
• to front combination lamp RH terminal 7,
• through 15A fuse [No. 86, located in IPDM E/R]
• through IPDM E/R terminal 30
• to front combination lamp LH terminal 7.
Ground is supplied
• to front combination lamp RH terminal 4, and
• to front combination lamp LH terminal 4
• through grounds E17, E43 and B102 (with VDC system, navigation system or telephone)
• through grounds E17, E43 and F152 (without VDC system, navigation system and telephone).
With power and ground supplied, low beam headlamps illuminate.

High Beam Operation/Flash-to-Pass Operation

With the lighting switch in 2ND position and placed in HIGH or PASS position, the BCM receives input signal requesting headlamp high beams to illuminate. High beam request signal and low beam request signal is communicated to the IPDM E/R through CAN communication. The CPU located in the IPDM E/R controls headlamp high relay and headlamp low relay turned ON, which when energized, supplies power,
• through 15A fuse [No. 76, located in IPDM E/R]
• through IPDM E/R terminal 20
• to front combination lamp RH terminal 7,
• through 15A fuse [No. 86, located in IPDM E/R]
• through IPDM E/R terminal 30
• to front combination lamp LH terminal 7,
• through 10A fuse [No. 72, located in IPDM E/R]
• through IPDM E/R terminal 27
• to front combination lamp RH terminal 3,
• through 10A fuse [No. 74, located in IPDM E/R]
• through IPDM E/R terminal 28
• to front combination lamp LH terminal 3.
Ground is supplied
• to front combination lamp RH terminals 4, and
• to front combination lamp LH terminals 4,
• through grounds E17, E43 and B102 (with VDC system, navigation system or telephone)
• through grounds E17, E43 and F152 (without VDC system, navigation system and telephone).
With the power and ground supplied, headlamp bulbs illuminate. High beam solenoids move the bulb shades in the front combination lamps, and the bulb shades change to high beam position.
Unified meter and A/C amp. receives signal from BCM through CAN communication lines, and then combination meter indicator illuminates high beam.

COMBINATION SWITCH READING FUNCTION

Refer to BCS-4, "System Description".

EXTERIOR LAMP BATTERY SAVER CONTROL

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

REMOTE KEYLESS ENTRY SYSTEM OPERATION

Refer to BL-52.

VEHICLE SECURITY SYSTEM

The vehicle security system will flash the high beams if the system is triggered. Refer to BL-111.

XENON HEADLAMP

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

- The light produced by the headlamps is white color similar to sunlight that is easy to the eyes.
- Light output is nearly double that of halogen headlamps, affording increased area of illumination.
- Counter-reflected luminance increases and the contrast enhances on the wet road in the rain. That makes visibility go up more than the increase of the light volume.
- Power consumption is approximately 25 percent less than halogen headlamps, reducing battery load.

CAN Communication System Description

INFOID:0000000001647287

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

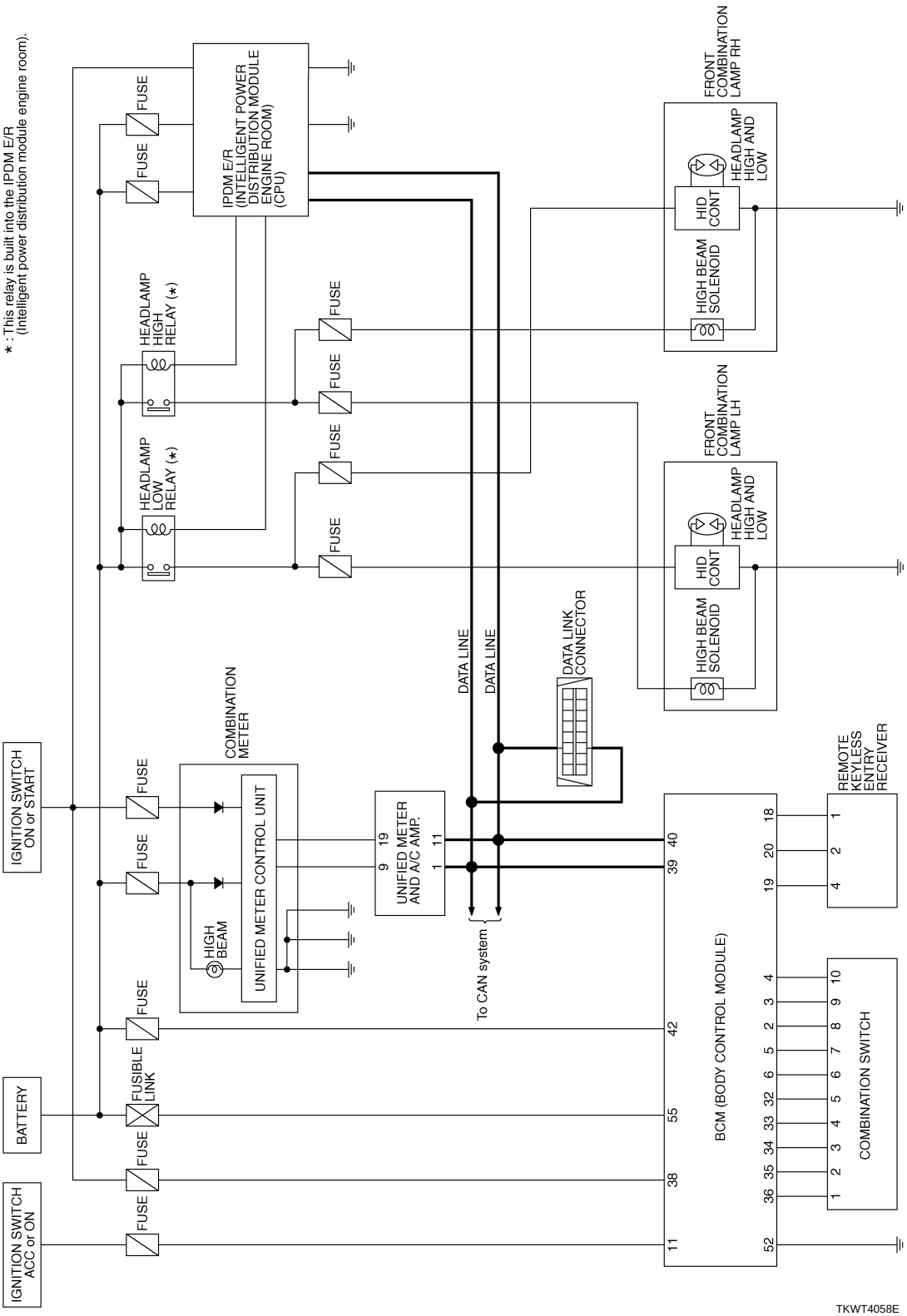
CAN Communication Unit

INFOID:0000000001647288

Refer to LAN-41, "CAN System Specification Chart".

Schematic

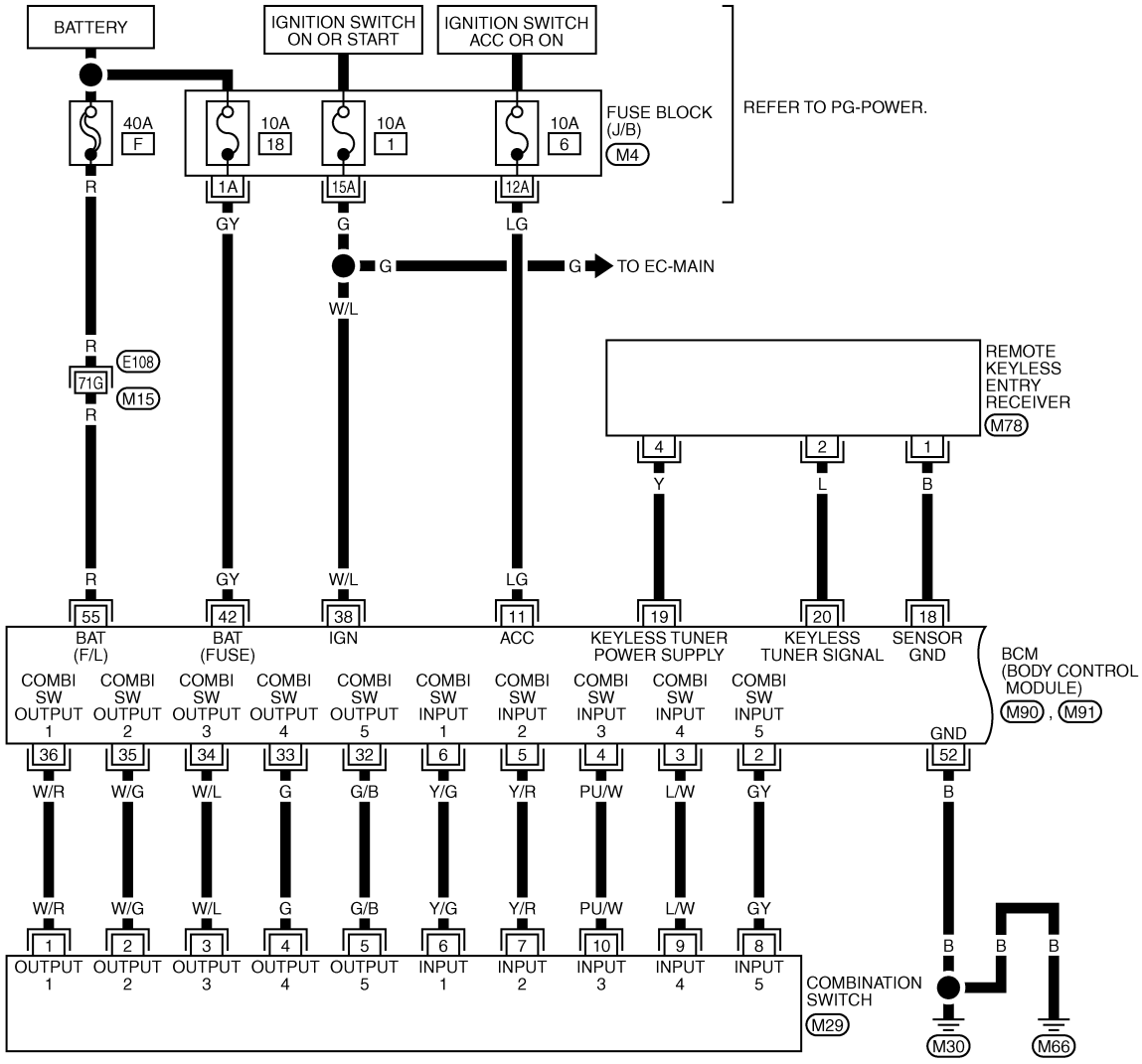
INFOID:0000000001647289

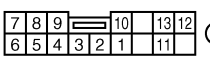


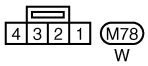
Wiring Diagram - H/LAMP -

INFOID:0000000001647290

LT-H/LAMP-01







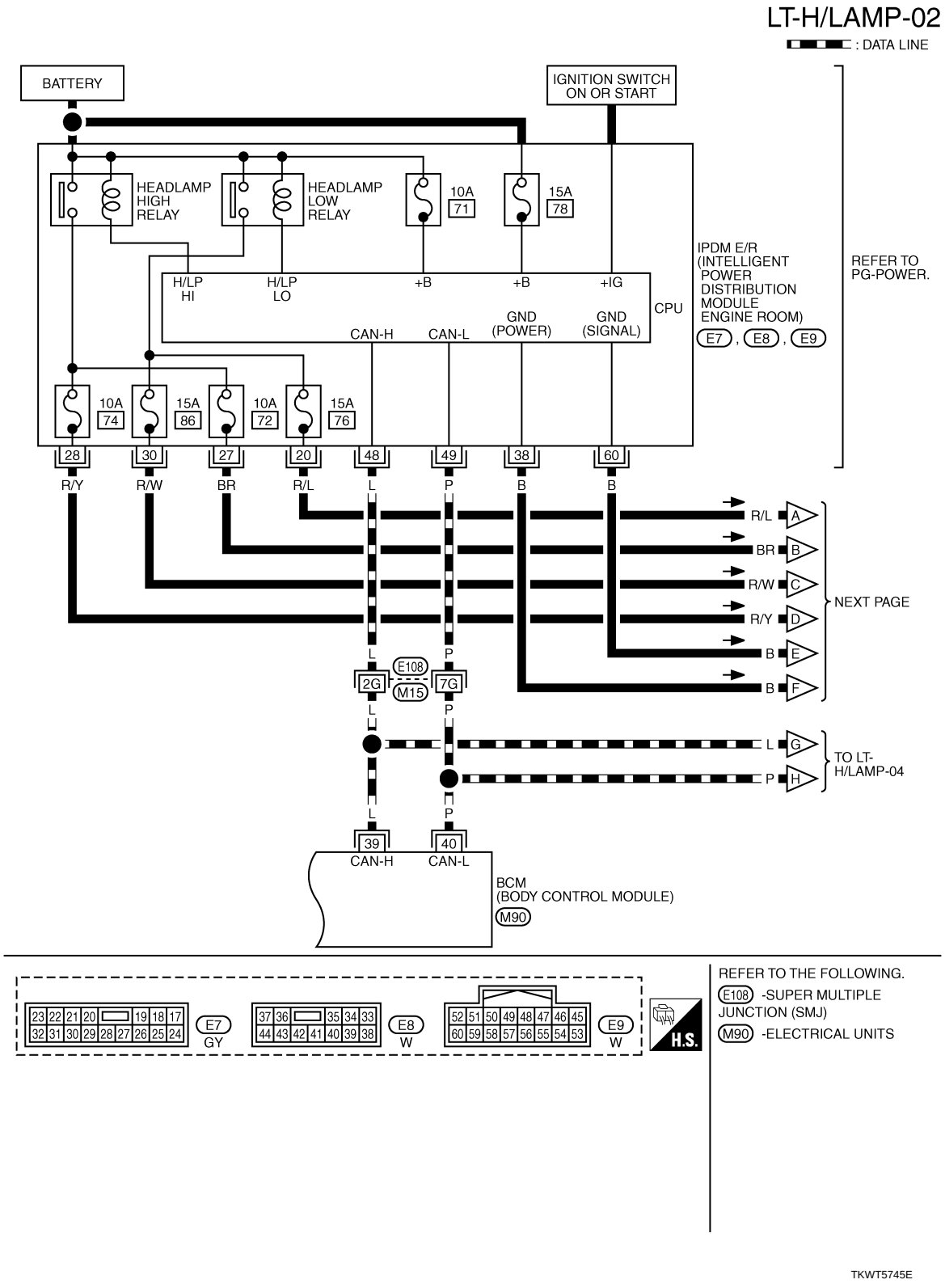
REFER TO THE FOLLOWING.

E108 -SUPER MULTIPLE JUNCTION (SMJ)

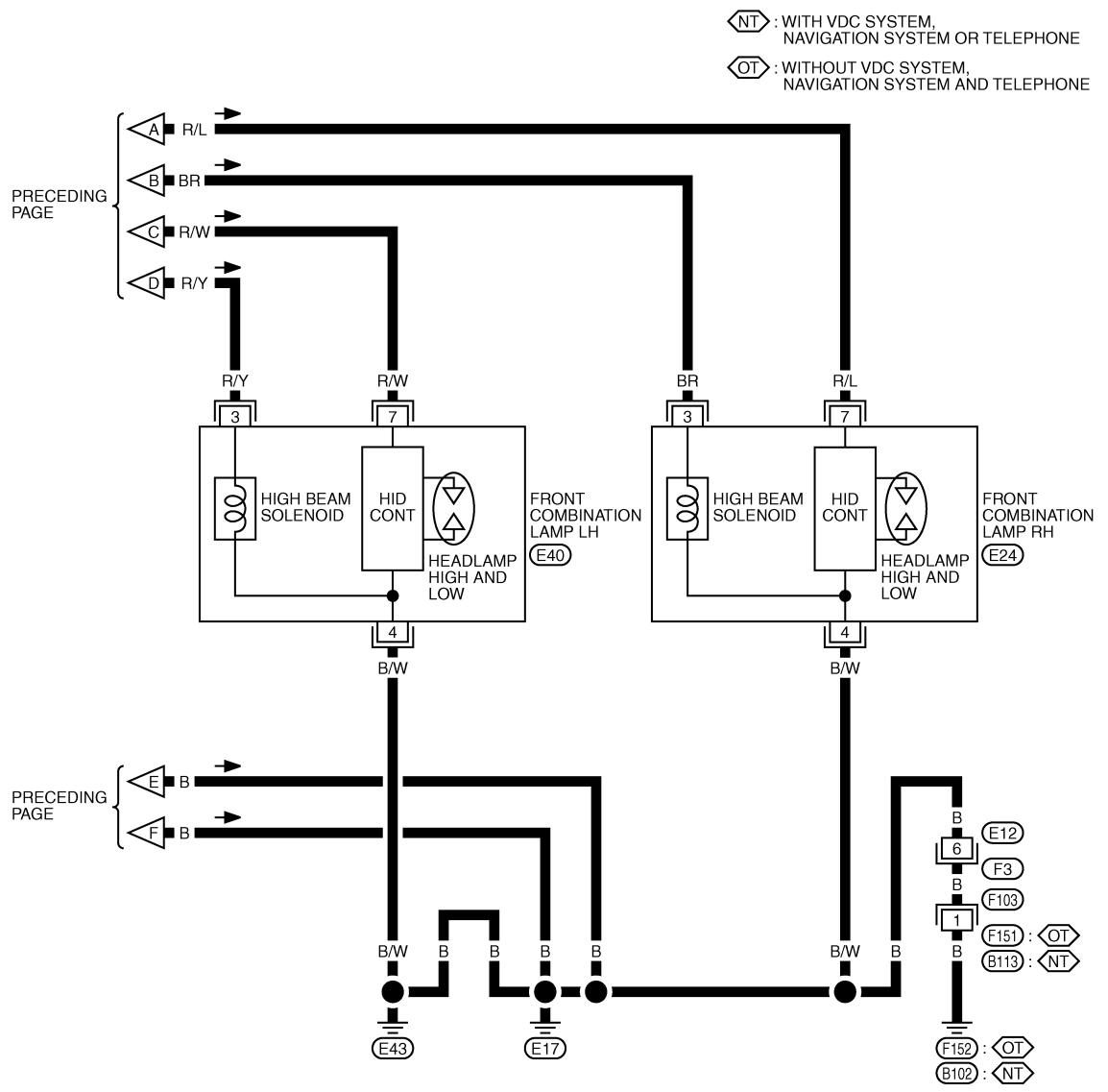
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

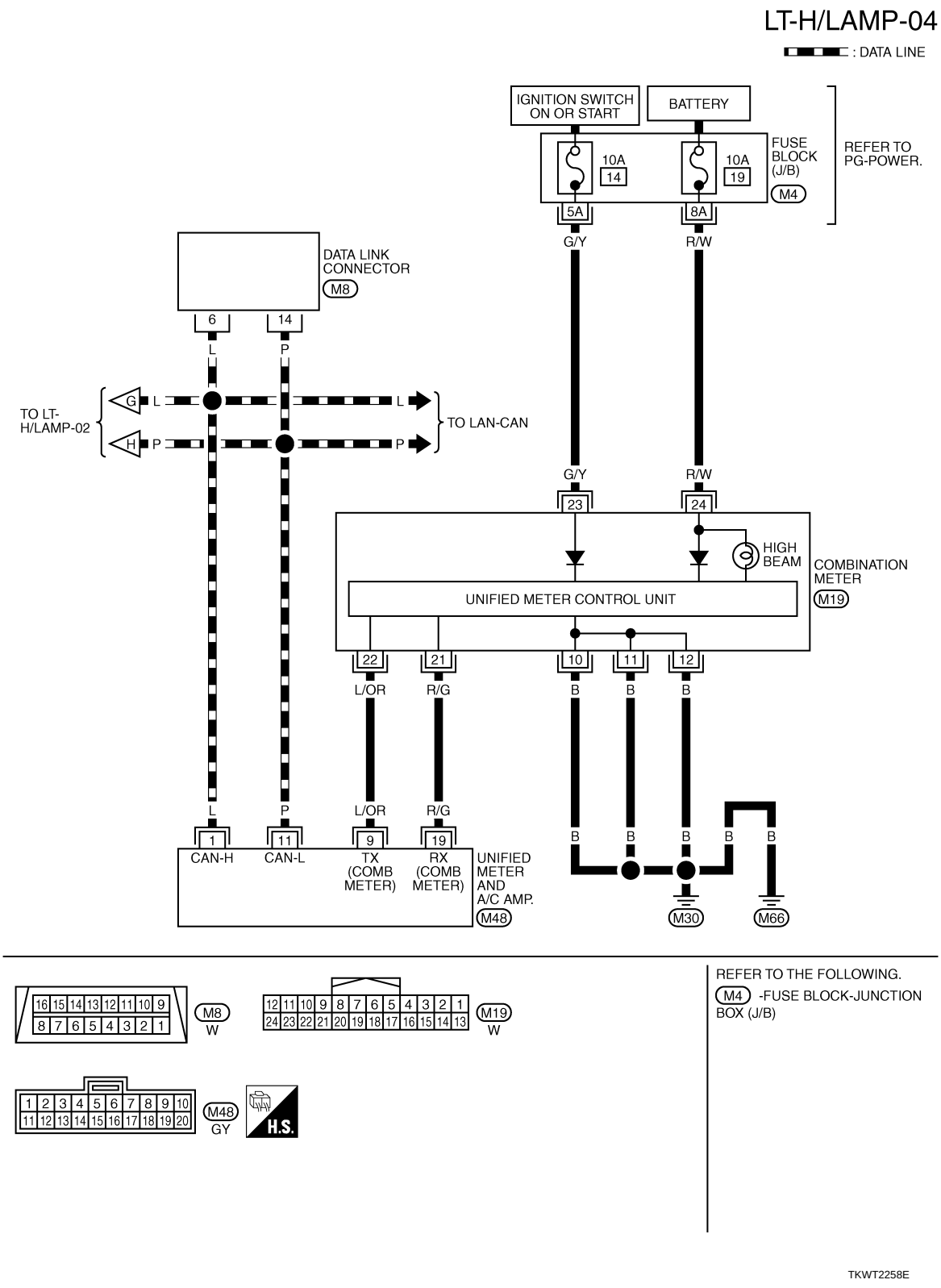
M90 , M91 -ELECTRICAL UNITS

TKWT5744E


LT-H/LAMP-02
: DATA LINE
BATTERY
IGNITION SWITCH ON OR START
HEADLAMP HIGH RELAY
HEADLAMP LOW RELAY
10A 71
15A 78
H/LP HI
H/LP LO
+B
+B
+IG
GND (POWER)
GND (SIGNAL)
CAN-H
CAN-L
CPU
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E7, E8, E9
REFER TO PG-POWER.
10A 74
15A 86
10A 72
15A 76
28 30 27 20 48 49 38 60
R/Y R/W BR R/L L P B B
R/L A
BR B
R/W C
R/Y D
B E
B F
NEXT PAGE
E108
M15
2G 7G
L G
P H
TO LT-H/LAMP-04
39 40
CAN-H CAN-L
BCM (BODY CONTROL MODULE)
M90
23 22 21 20 19 18 17
32 31 30 29 28 27 26 25 24
E7 GY
37 36 35 34 33
44 43 42 41 40 39 38
E8 W
52 51 50 49 48 47 46 45
60 59 58 57 56 55 54 53
E9 W
H.S.
REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M90 -ELECTRICAL UNITS
TKWT5745E

LT-H/LAMP-03


NT : WITH VDC SYSTEM, NAVIGATION SYSTEM OR TELEPHONE
OT : WITHOUT VDC SYSTEM, NAVIGATION SYSTEM AND TELEPHONE
PRECEDING PAGE
A R/L
B BR
C R/W
D R/Y
R/Y
R/W
BR
R/L
3
7
HIGH BEAM SOLENOID
HID CONT
HEADLAMP HIGH AND LOW
FRONT COMBINATION LAMP LH
E40
FRONT COMBINATION LAMP RH
E24
4
B/W
PRECEDING PAGE
E B
F B
B
E12
6
F3
F103
1
F151 : OT
B113 : NT
F152 : OT
B102 : NT
E43
E17
E24 , E40 , F3
GY GY B
F103
W
TKWT5746E



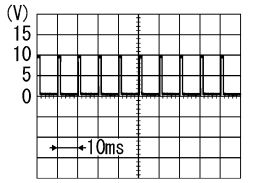
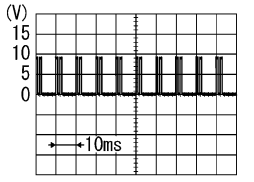
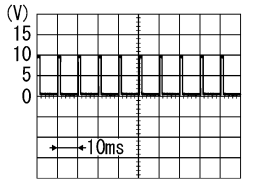
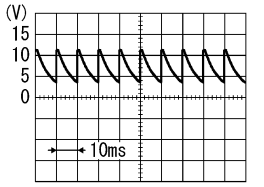
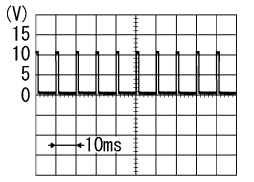
TKWT2258E

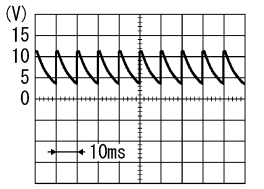
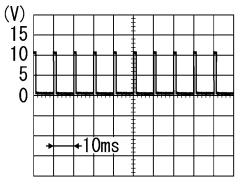
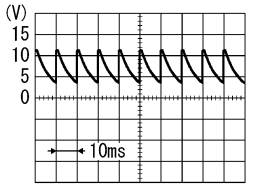
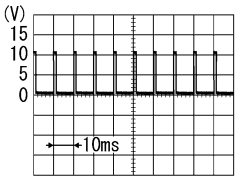
Terminal and Reference Value for BCM

INFOID:0000000001647291

CAUTION:

- **Check combination switch system terminal waveform under the loaded condition with lighting switch, turn signal switch and wiper switch OFF not to be fluctuated by overloaded.**
- **Turn wiper dial position to 4 except when checking waveform or voltage of wiper dial position. Wiper dial position can be confirmed on CONSULT-III. Refer to LT-85, "CONSULT-III Function (BCM)".**

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
2	GY	Combination switch input 5	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	Approx. 0 V
					Any of the conditions below • Lighting switch 1ST • Lighting switch HIGH beam (Operates only HIGH beam switch)	 PKIB4959J Approx. 1.0 V
					Lighting switch 2ND	 PKIB4953J Approx. 2.0 V
3	L/W	Combination switch input 4	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	Approx. 0 V
					Any of the conditions below • Lighting switch 2ND • Lighting switch PASSING (Operates only PASSING switch)	 PKIB4959J Approx. 1.0 V
11	LG	Ignition switch (ACC)	ACC	—		Battery voltage
33	G	Combination switch output 4	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	 PKIB4960J Approx. 7.2 V
					Lighting switch 1ST (The same result with lighting switch 2ND)	 PKIB4958J Approx. 1.2 V

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
34	W/L	Combination switch output 3	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	 PKIB4960J Approx. 7.2 V
					Any of the conditions below • Lighting switch 2ND • Lighting switch HI beam (Operates only HI beam switch)	 PKIB4958J Approx. 1.2 V
35	W/G	Combination switch output 2	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	 PKIB4960J Approx. 7.2 V
					Any of the conditions below • Lighting switch 2ND • Lighting switch PASSING (Operates only PASSING switch)	 PKIB4958J Approx. 1.2 V
38	W/L	Ignition switch (ON)	ON	—		Battery voltage
39	L	CAN – H	—	—		—
40	P	CAN – L	—	—		—
42	GY	Battery power supply	OFF	—		Battery voltage
52	B	Ground	ON	—		Approx. 0 V
55	R	Battery power supply	OFF	—		Battery voltage

Terminal and Reference Value for IPDM E/R

INFOID:0000000001647292

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
20	R/L	Headlamp low (RH)	ON	Lighting switch 2ND position	OFF	Approx. 0 V
					ON	Battery voltage

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

How to Proceed with Trouble Diagnosis

INFOID:0000000001647293

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-15, "Preliminary Check".
4. Check symptom and repair or replace the cause of malfunction.
5. Does headlamp operate normally? If YES, GO TO 6. If NO, GO TO 4.
6. INSPECTION END

Preliminary Check

INFOID:0000000001647294

CHECK POWER SUPPLY AND GROUND CIRCUIT

1.CHECK FUSES AND FUSIBLE LINK

Check for blown fuses and fusible link.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	F
		18
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
IPDM E/R	Battery	72
		74
		76
		86

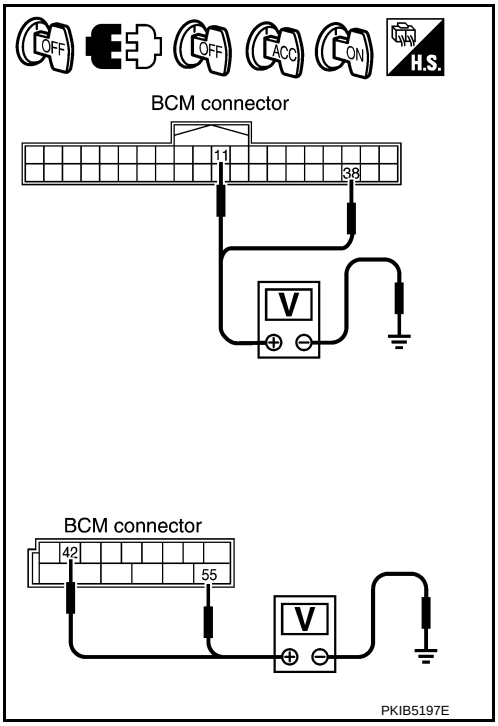
Refer to LT-9, "Wiring Diagram - H/LAMP -".

OK or NG

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

2.CHECK POWER SUPPLY CIRCUIT

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



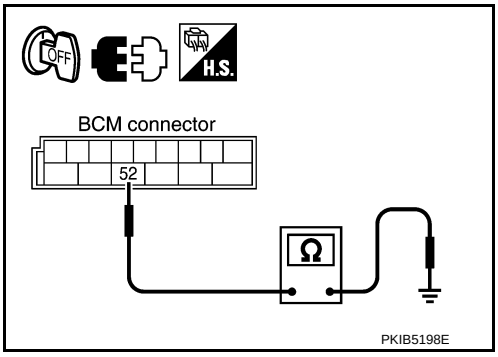
Terminals			Ignition switch position		
(+)		(-)	OFF	ACC	ON
BCM connector	Terminal				
M90	11	Ground	Approx. 0 V	Battery voltage	Battery voltage
	38		Approx. 0 V	Approx. 0 V	Battery voltage
M91	42		Battery voltage	Battery voltage	Battery voltage
	55		Battery voltage	Battery voltage	Battery voltage

OK or NG

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.



BCM connector	Terminal	Ground	Continuity
M91	52		Yes

OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

CONSULT-III Function (BCM)

INFOID:0000000001647295

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

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

WORK SUPPORT

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 two ON/OFF.	ON	×
		OFF	—

DATA MONITOR

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 1 judged from lighting switch signal.
HEAD LAMP SW 2	“ON/OFF”	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
LIGHT SW 1 ST	“ON/OFF”	Displays status (lighting switch 1ST or 2ND position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
PASSING SW	“ON/OFF”	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW NOTE	“ON/OFF”	—
DOOR SW - DR	“ON/OFF”	Displays status of driver door as judged from driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - AS	“ON/OFF”	Displays status of passenger door as judged from passenger door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RR NOTE	“OFF”	—
DOOR SW - RL NOTE	“OFF”	—
BACK DOOR SW	“ON/OFF”	• Displays status of back door as judged from back door switch signal. (Coupe models) • Displays status of rear trunk hood as judged from trunk lamp switch signal. (Roadster models)
TURN SIGNAL R	“ON/OFF”	Displays status (Turn right: ON/Others: OFF) as judged from lighting switch signal.
TURN SIGNAL L	“ON/OFF”	Displays status (Turn left: ON/Others: OFF) as judged from lighting switch signal.
CARGO LAMP SW NOTE	“OFF”	—

NOTE:
This item is displayed, but cannot be monitored.

ACTIVE TEST

Display Item List

Test item	Description
TAIL LAMP	Allows tail lamp relay to operate by switching ON–OFF.
HEAD LAMP	Allows headlamp relay to operate by switching ON–OFF.
FR FOG LAMP NOTE	—
CORNERING LAMP NOTE	—

NOTE:
This item is displayed, but cannot be tested.

CONSULT-III Function (IPDM E/R)

INFOID:0000000001647296

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

Check Item, Diagnosis Mode	Description
SELF-DIAGNOSTIC RESULTS	Refer to PG-17, "CONSULT-III Function (IPDM E/R)".
DATA MONITOR	The input/output data of IPDM E/R is displayed in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST	IPDM E/R sends a drive signal to electronic components to check their operation.

DATA MONITOR

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	
Position lights request	TAIL & CLR REQ	ON/OFF	×	×	×	Signal status input from BCM
Headlamp low beam request	HL LO REQ	ON/OFF	×	×	×	Signal status input from BCM
Headlamp high beam request	HL HI REQ	ON/OFF	×	×	×	Signal status input from BCM

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

ACTIVE TEST

Display Item List

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 ON, LO ON) at your option (Headlamp high beam repeats ON–OFF every 1 second).

Headlamp Does Not Change To High Beam (Both Sides)

INFOID:0000000001647297

1.CHECK COMBINATION SWITCH INPUT SIGNAL

CONSULT-III DATA MONITOR
1. Select “HI BEAM SW” of BCM data monitor item.
2. With operating the lighting switch, check the monitor status.

When lighting switch is HIGH BEAM : HI BEAM SW ON

CHECK THE COMBINATION SWITCH
Refer to LT-86, "Combination Switch Inspection".

OK or NG

OK >> GO TO 2.
NG >> Check combination switch (lighting switch). Refer to LT-86, "Combination Switch Inspection".

2.HEADLAMP ACTIVE TEST

CONSULT-III ACTIVE TEST
1. Select "LAMPS" of IPDM E/R active test item.
2. With operating the test item, check the headlamp high beam operation.

**Headlamp high beam should operate.
(Headlamp high beam repeats ON-OFF every 1 second).**

IPDM E/R AUTO ACTIVE TEST
1. Start auto active test. Refer to PG-19, "Auto Active Test".
2. Check that the headlamp high beam operation.

Headlamp high beam should operate.

OK or NG

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

3.CHECK IPDM E/R

CONSULT-III DATA MONITOR
1. Select "HL LO REQ" and "HL HI REQ" of IPDM E/R data monitor item.
2. With operating the lighting switch, check the monitor status

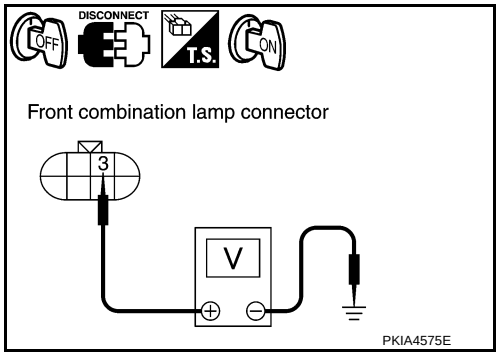
When lighting switch is	**: HL LO REQ ON**
HIGH BEAM	**: HL HI REQ ON**

OK or NG

OK >> Replace IPDM E/R. Refer to PG-23, "Removal and Installation of IPDM E/R".
NG >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM".

4. CHECK HEADLAMP INPUT SIGNAL

CONSULT-III ACTIVE TEST
1. Turn ignition switch OFF.
2. Disconnect front combination lamp RH and LH connector.
3. Select "LAMPS" of IPDM E/R active test item
4. With operating the test item, check voltage between front combination lamp (RH and LH) harness connector and ground.
   NOTE:
   Headlamp high beam repeats ON–OFF every 1 second.



Terminals				Voltage (Approx.)
(+)			(-)	
Front combination lamp connector		Terminal		
RH	E24	3	Ground	Battery voltage
LH	E40	3		

IPDM E/R AUTO ACTIVE TEST
1. Turn ignition switch OFF.
2. Disconnect front combination lamp RH and LH connector.
3. Start auto active test. Refer to PG-19, "Auto Active Test".
4. With operating the test item, check voltage between front combination lamp (RH and LH) harness connector and ground.
   NOTE:
   Headlamp high beam repeats ON–OFF every 1 second.

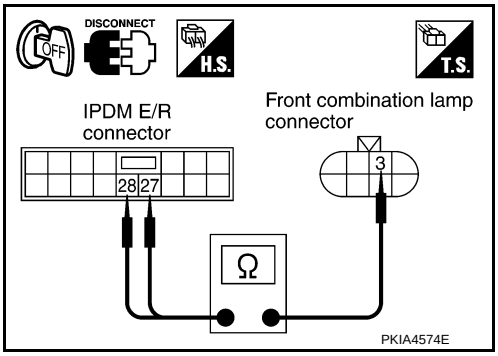
Terminals				Voltage (Approx.)
(+)			(-)	
Front combination lamp connector		Terminal		
RH	E24	3	Ground	Battery voltage
LH	E40	3		

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 and front combination lamp (RH and LH) harness connector.



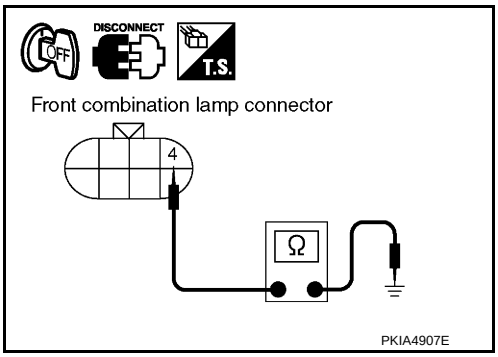
Terminals					Continuity
IPDM E/R			Front combination lamp		
Connector		Terminal	Connector	Terminal	
RH	E7	27	E24	3	Yes
LH		28	E40	3	

OK or NG

OK >> Replace IPDM E/R. Refer to PG-23, "Removal and Installation of IPDM E/R".
NG >> Repair harness or connector.

6. CHECK HEADLAMP GROUND

Check continuity between front combination lamp (RH and LH) harness connector and ground.



Front combination lamp connector		Terminal	Ground	Continuity
RH	E24	4		Yes
LH	E40	4		

OK or NG

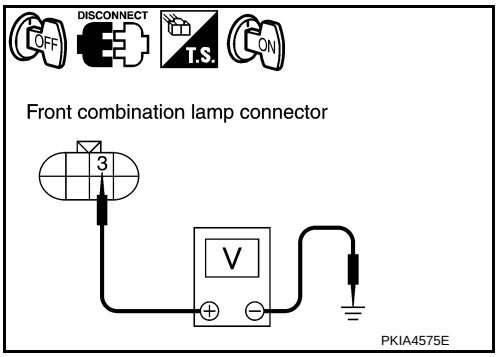
OK >> Check headlamp harness, connector and bulb.
NG >> Repair harness or connector.

Headlamp Does Not Change To High Beam (One Side)

INFOID:0000000001647298

1. CHECK HEADLAMP INPUT SIGNAL

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



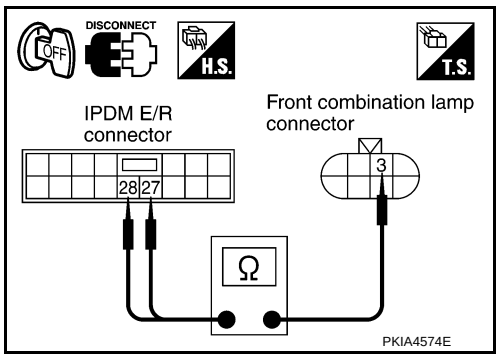
Terminals				Voltage (Approx.)
(+)			(-)	
Front combination lamp connector		Terminal		
RH	E24	3	Ground	Battery voltage
LH	E40	3		

OK or NG

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

2. CHECK HEADLAMP 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 RH or LH harness connector.



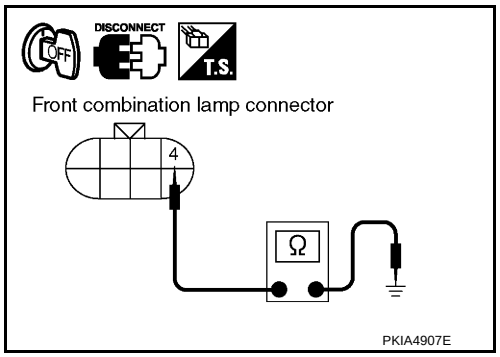
Terminals					Continuity
IPDM E/R			Front combination lamp		
Connector		Terminal	Connector	Terminal	
RH	E7	27	E24	3	Yes
LH		28	E40	3	

OK or NG

OK >> Replace IPDM E/R. Refer to PG-23, "Removal and Installation of IPDM E/R".
NG >> Repair harness or connector.

3. CHECK HEADLAMP GROUND

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



Front combination lamp connector		Terminal	Ground	Continuity
RH	E24	4		Yes
LH	E40	4		

OK or NG

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

High Beam Indicator Lamp Does Not Illuminate

INFOID:0000000001647299

1. CHECK BULB

Check bulb of high beam indicator lamp.

OK or NG

OK >> Replace combination meter. Refer to DI-22, "Removal and Installation for Combination Meter".
NG >> Replace indicator bulb.

Headlamp Low Beam Does Not Illuminate (Both Sides)

INFOID:0000000001647300

1. CHECK COMBINATION SWITCH INPUT SIGNAL

CONSULT-III DATA MONITOR
1. Select "HEAD LAMP SW1" and "HEAD LAMP SW2" of BCM data monitor item.
2. With operating the lighting switch, check the monitor status.

When lighting switch is 2ND position : HEAD LAMP SW1 ON
: HEAD LAMP SW2 ON

CHECK THE COMBINATION SWITCH
Refer to LT-86, "Combination Switch Inspection".

OK or NG

OK >> GO TO 2.
NG >> Check combination switch (lighting switch). Refer to LT-86, "Combination Switch Inspection".

2. HEADLAMP ACTIVE TEST

CONSULT-III ACTIVE TEST
1. Select "LAMPS" of IPDM E/R active test item.
2. With operating the test item, check the headlamp low beam operation.

Headlamp low beam should operate.

IPDM E/R AUTO ACTIVE TEST
1. Start auto active test. Refer to PG-19, "Auto Active Test".
2. Check that the headlamp low beam operation.

Headlamp low beam should operate.

OK or NG

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

3. CHECK IPDM E/R

CONSULT-III DATA MONITOR
1. Select "HL LO REQ" of IPDM E/R data monitor item.
2. With operating the lighting switch, check the monitor status.

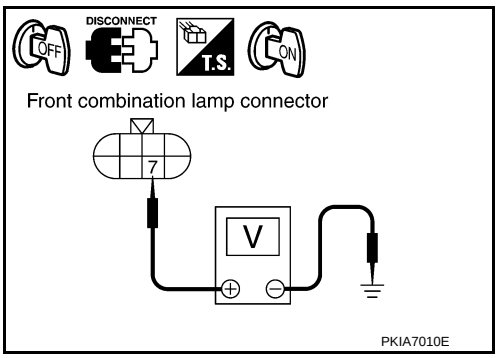
When lighting switch is 2ND position : HL LO REQ ON

OK or NG

OK >> Replace IPDM E/R. Refer to PG-23, "Removal and Installation of IPDM E/R".
NG >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM".

4. CHECK HEADLAMP INPUT SIGNAL

CONSULT-III ACTIVE TEST
1. Turn ignition switch OFF.
2. Disconnect front combination lamp RH and LH connector.
3. Select "LAMPS" of IPDM E/R active test item.
4. With operating the test item, check voltage between front combination lamp (RH and LH) harness connector and ground.



Terminals				Voltage (Approx.)
(+)			(-)	
Front combination lamp connector		Terminal		
RH	E24	7	Ground	Battery voltage
LH	E40	7		

IPDM E/R AUTO ACTIVE TEST
1. Turn ignition switch OFF.
2. Disconnect front combination lamp RH and LH connector.
3. Start auto active test. Refer to PG-19, "Auto Active Test".
4. With operating the test item, check voltage between front combination lamp (RH and LH) harness connector and ground.

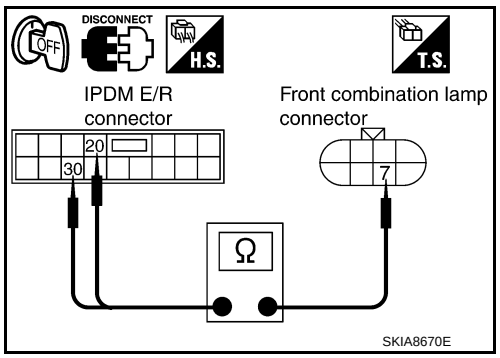
Terminals				Voltage (Approx.)
(+)			(-)	
Front combination lamp connector		Terminal		
RH	E24	7	Ground	Battery voltage
LH	E40	7		

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 and front combination lamp (RH and LH) harness connector.



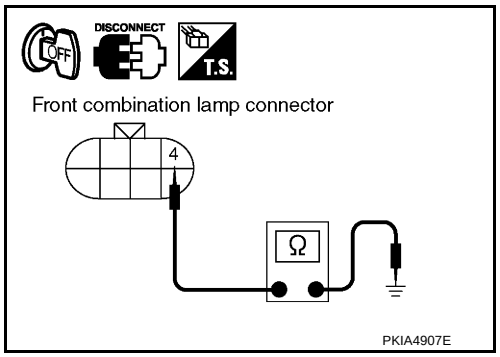
Terminals					Continuity
IPDM E/R			Front combination lamp		
Connector		Terminal	Connector	Terminal	
RH	E7	20	E24	7	Yes
LH		30	E40	7	

OK or NG

OK >> Replace IPDM E/R. Refer to PG-23, "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 and ground.



Front combination lamp connector		Terminal	Ground	Continuity
RH	E24	4		Yes
LH	E40	4		

OK or NG

OK >> Check headlamp harness and connectors, ballasts (HID control unit), and xenon bulbs. Refer to LT-25, "Xenon Headlamp Trouble Diagnosis".
NG >> Repair harness or connector.

Headlamp Low Beam Does Not Illuminate (One Side)

INFOID:0000000001647301

1.CHECK BULB

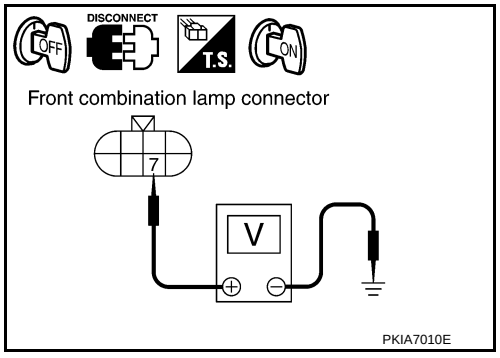
Check ballast (HID control unit) and xenon bulb of lamp which does not illuminate. Refer to LT-25, "Xenon Headlamp Trouble Diagnosis".

OK or NG

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

2.CHECK HEADLAMP INPUT SIGNAL

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



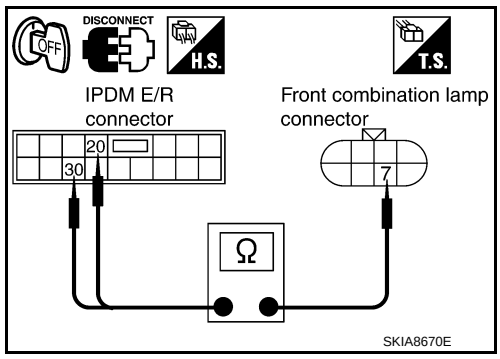
Terminals				Voltage (Approx.)
(+)			(-)	
Front combination lamp connector		Terminal		
RH	E24	7	Ground	Battery voltage
LH	E40	7		

OK or NG

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

3.CHECK HEADLAMP CIRCUIT

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



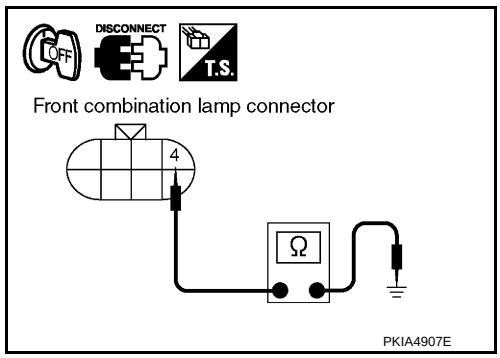
Terminals					Continuity
IPDM E/R			Front combination lamp		
Connector		Terminal	Connector	Terminal	
RH	E7	20	E24	7	Yes
LH		30	E40	7	

OK or NG

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

4.CHECK HEADLAMP GROUND

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



Front combination lamp connector		Terminal	Ground	Continuity
RH	E24	4		Yes
LH	E40	4		

OK or NG

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

Headlamps Does Not Turn OFF

INFOID:0000000001647302

1.CHECK HEADLAMP TURN OFF

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

OK or NG

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

2.CHECK COMBINATION SWITCH INPUT SIGNAL

CONSULT-III DATA MONITOR

1. Select "HEAD LAMP1" and "HEAD LAMP2" of BCM data monitor item.
2. With operating the lighting switch, check the monitor status.

When lighting switch is OFF : HEAD LAMP SW1 OFF
: HEAD LAMP SW2 OFF

OK or NG

OK >> Replace IPDM E/R. Refer to PG-23, "Removal and Installation of IPDM E/R".
NG >> Check combination switch (lighting switch). Refer to LT-86, "Combination Switch Inspection".

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

Perform self-diagnosis for “BCM” with CONSULT-III.

Display of self-diagnosis results

NO DTC>> Replace IPDM E/R. Refer to PG-23, "Removal and Installation of IPDM E/R".

CAN COMM CIRCUIT>> Refer to PG-23, "U1000 CAN COMM CIRCUIT".

General Information for Xenon Headlamp Trouble Diagnosis

INFOID:0000000001647303

In most cases, malfunction of xenon headlamp - “does not illuminate”, “flickers” or “dark” - is caused by a malfunctioning xenon bulb. A malfunctioning HID control unit or lamp housing, however, may be a cause. Be sure to perform trouble diagnosis following the steps described below.

Caution:

INFOID:0000000001647304

- Installation or removal of connector must be done with lighting switch OFF.
- Disconnect the battery cable from the negative terminal or remove power fuse.
  CAUTION:
  After the battery cables are disconnected, never open/close the driver and/or front passenger door with the window in the full up position. The automatic window adjusting function will not work and the side roof panel may be damaged.
- When the lamp is illuminated (when lighting switch is ON), never touch harness, HID control unit, inside of lamp, or lamp metal parts.
- To check illumination, temporarily install lamp in vehicle. Be sure to connect power at vehicle side connector.
- If error can be traced directly to electrical system, first check for items such as blown fuses and fusible links, broken wires or loose connectors, dislocated terminals, and improper connections.
- Never work with wet hands.
- Using a tester for HID control unit circuit trouble diagnosis is prohibited.
- Disassembling HID control unit or harnesses (bulb socket harness, ECM harness) is prohibited.
- Immediately after illumination, light intensity and color will fluctuate, but there is nothing wrong.
- When bulb has come to end of its life, brightness will drop significantly, it will flash repeatedly, or light color will turn reddish.

Xenon Headlamp Trouble Diagnosis

INFOID:0000000001647305

1.CHECK 1: XENON HEADLAMP LIGHTING

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

OK or NG

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

2.CHECK 2: XENON HEADLAMP LIGHTING

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

OK or NG

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

3.CHECK 3: XENON HEADLAMP LIGHTING

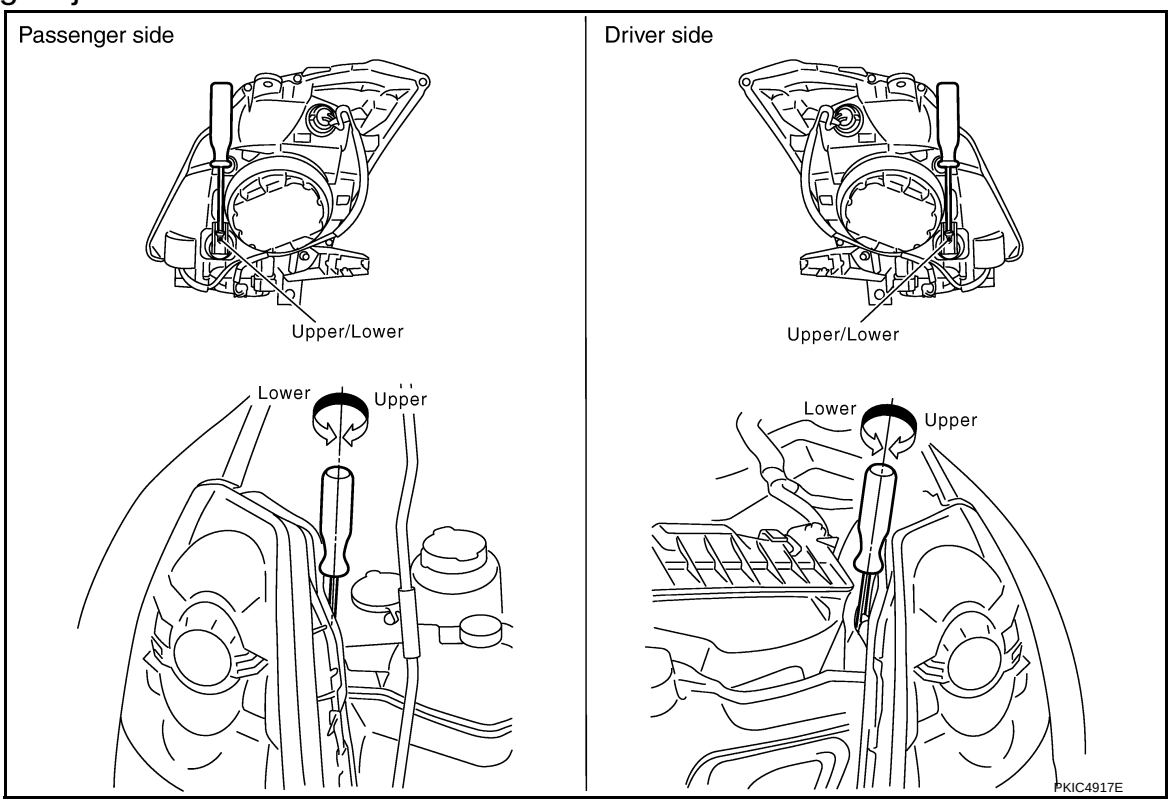
Install normal xenon lamp housing assembly to corresponding xenon headlamp, and check if lamp lights up.

OK or NG

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

Aiming Adjustment

INFOID:0000000001647306



PREPARATION BEFORE ADJUSTING

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

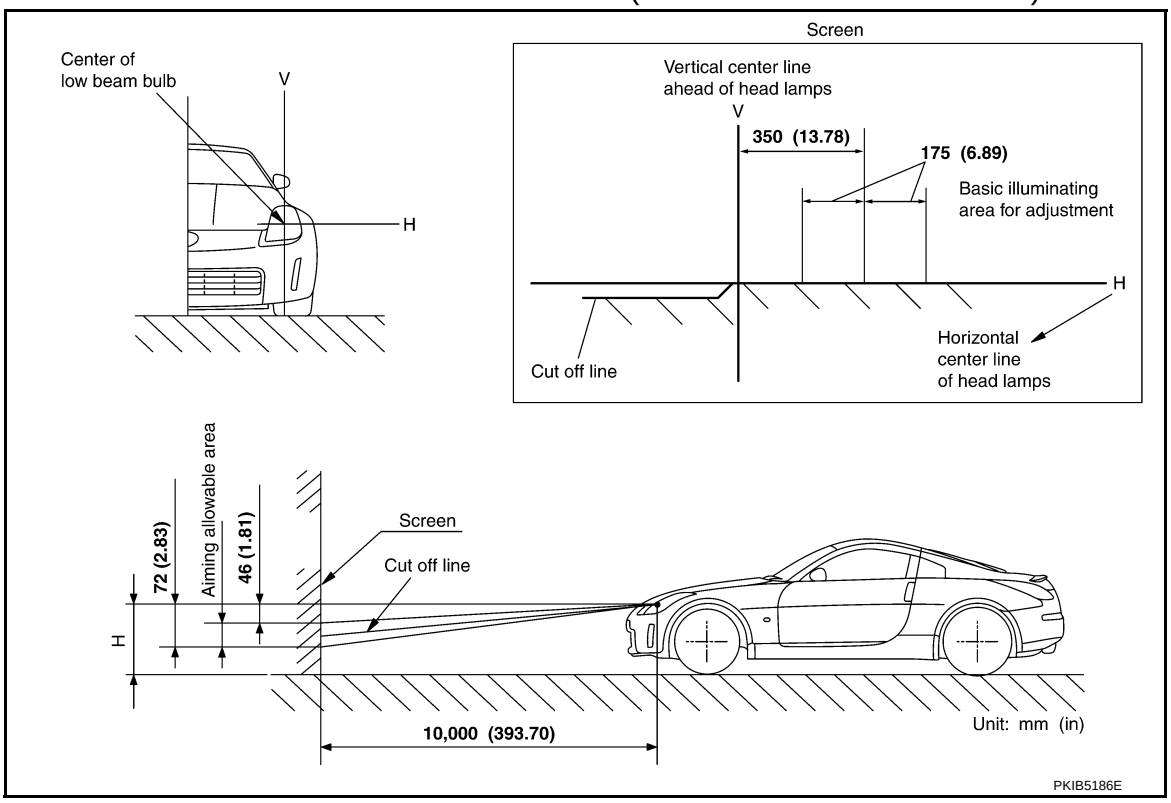
Before performing aiming adjustment, check the following.

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

LOW BEAM AND HIGH BEAM

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

ADJUSTMENT USING AN ADJUSTMENT SCREEN (LIGHT/DARK BORDERLINE)



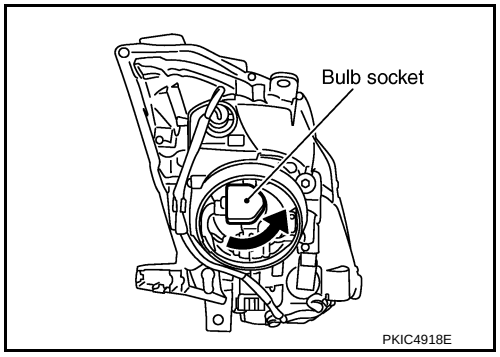
If the vehicle front body has been repaired and/or the headlamp assembly has been replaced, check aiming. Use the aiming chart shown in the figure.

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

Bulb Replacement

INFOID:0000000001647307

HEADLAMP HIGH/LOW BEAM



1. Turn lighting switch OFF.
2. Open the driver and front passenger window, and then disconnect the battery cable from the negative terminal or remove power fuse.
   CAUTION:
   After the battery cables are disconnected, never open/close the driver and/or front passenger door with the window in the full up position. The automatic window adjusting function will not work and the side roof panel may be damaged.
3. Remove headlamp. Refer to LT-28, "Removal and Installation".
4. Turn plastic cap counterclockwise and unlock it.
5. Turn bulb socket counterclockwise and unlock it.
6. Unlock retaining spring and remove bulb from headlamp.
7. Installation is reverse order of removal.
   NOTE:
   After installation, perform aiming adjustment. Refer to LT-26, "Aiming Adjustment".

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

PARKING LAMP

1. Turn lighting switch OFF.
2. Remove fender protector (front). Refer to EI-19.

3. Turn bulb socket counterclockwise and unlock it.
4. Remove bulb from its socket.
5. Installation is reverse order of removal.

Parking lamp : 12V - 5W

FRONT TURN SIGNAL LAMP

1. Turn lighting switch OFF.
2. Remove fender protector (front). Refer to EI-19.
3. Turn bulb socket counterclockwise and unlock it.
4. Remove bulb from its socket.
5. Installation is reverse order of removal.

Front turn signal lamp/— : 12V - 28/8W (amber)

FRONT SIDE MARKER LAMP

1. Remove headlamp. Refer to LT-28, "Removal and Installation".
2. Replacement integral with headlamp housing assembly.
3. Installation is reverse order of removal.

Front side marker lamp : LED

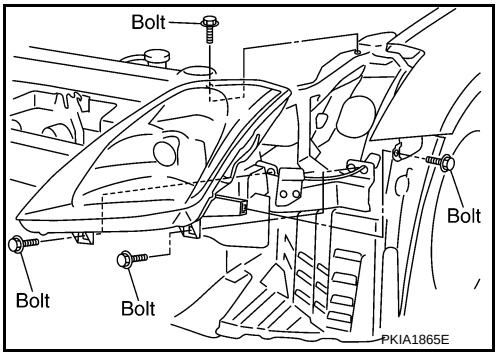
CAUTION:
After installing bulb, be sure to install plastic cap and bulb socket securely to insure watertightness.

Removal and Installation

INFOID:0000000001647308

REMOVAL

1. Open the driver and front passenger window, and then disconnect the battery cable from the negative terminal or remove power fuse.
   CAUTION:
   After battery cables are disconnected, never open/close the driver and/or front passenger door with the window in the full up position. The automatic window adjusting function will not work and the side roof panel may be damaged.
2. Remove front bumper fascia. Refer to EI-13.
3. Remove headlamp mounting bolts.
4. Pull head lamp toward vehicle front, disconnect connector, and remove headlamp.



INSTALLATION

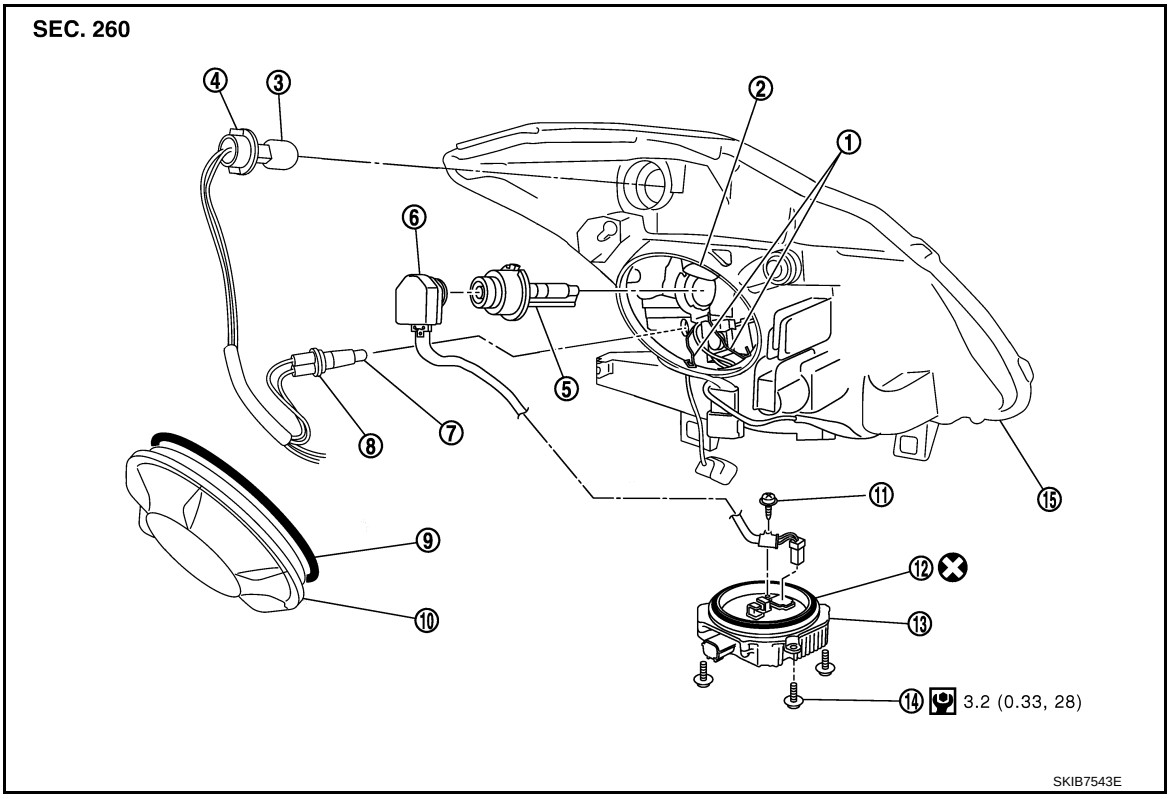
Installation is the reverse order of removal.

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

NOTE:
After installation, perform aiming adjustment. Refer to LT-26, "Aiming Adjustment".

Disassembly and Assembly

INFOID:0000000001647309



1. Retaining spring	2. Xenon bulb socket ground	3. Front turn signal lamp bulb
4. Front turn signal lamp bulb socket	5. Xenon bulb	6. Xenon bulb socket
7. Parking lamp bulb	8. Parking lamp bulb socket	9. Seal packing
10. Plastic cap	11. Ground screw	12. Seal packing
13. HID control unit	14. HID control unit mounting screw	15. Headlamp housing assembly

: N·m (kg-m, in-lb)

: Always replace after every disassembly.

DISASSEMBLY

1. Turn plastic cap counterclockwise, and unlock it.
2. Turn xenon bulb socket counterclockwise, and unlock it.
3. Unlock retaining spring, and remove xenon bulb.
4. Disconnect xenon bulb socket ground.
5. Remove HID control unit mounting screws.
6. Remove ground screw from HID control unit.
7. Disconnect connectors from HID control unit.
8. Pull out xenon bulb socket from head lamp housing assembly.
9. Turn parking lamp bulb socket counterclockwise and unlock it.
10. Remove parking lamp bulb from its socket.
11. Turn front turn signal lamp bulb socket counterclockwise and unlock it.
12. Remove front turn signal lamp bulb from its socket.

ASSEMBLY

Assembly is the reverse order of disassembly.

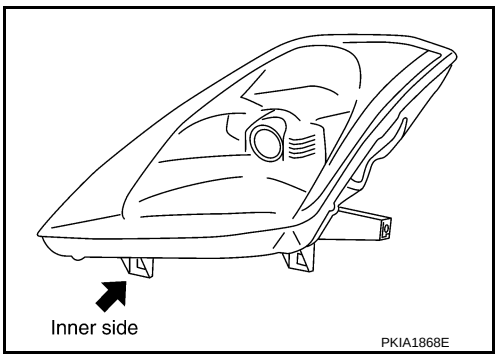
HID control unit mounting screw : 3.2 N·m (0.33 kg-m, 28 in-lb)

CAUTION:
- **When HID control unit is removed, reinstall it securely and avoid any looseness.**
- **After installing bulb, be sure to install plastic cap and bulb socket securely to insure watertightness**

Servicing to Replace Headlamps When Damaged

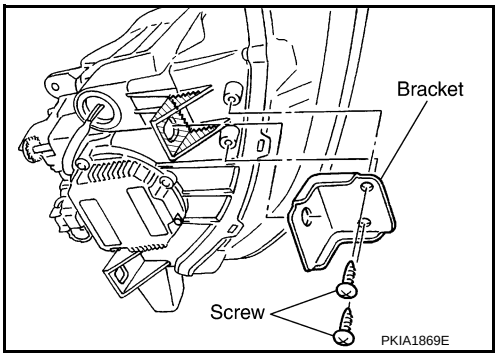
INFOID:0000000001647310

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



INSTALLATION OF HEADLAMP BRACKET

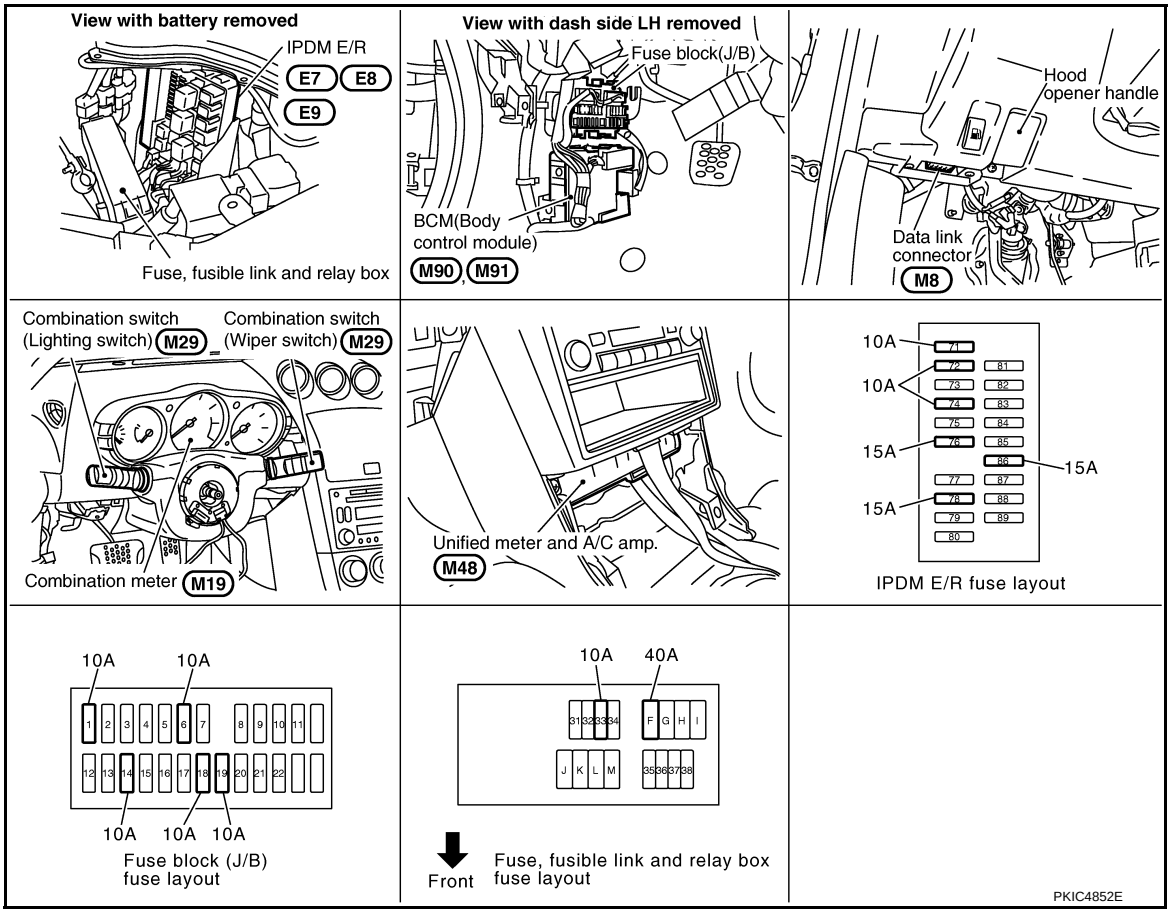
1. Remove headlamps. Refer to LT-28, "Removal and Installation".
2. Cut damaged section of installation part, then shape with sandpaper.
3. Attach each correction bracket to headlamp housing boss with 2 screws.



HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

Component Parts and Harness Connector Location

INFOID:0000000001647311



System Description

INFOID:0000000001647312

- BCM (Body Control Module) controls headlamps low beam, high beam and daytime light operation.
- Daytime light system operates parking, license plate, side marker, tail lamps and headlamp low beam according to signals from unified meter and A/C amp. (receive parking brake switch signal through CAN communication), ECM (receive engine status signal through CAN communication), lighting switch, and ignition switch.
- IPDM E/R (Intelligent Power Distribution Module Engine Room) operates parking, license plate, side marker, tail lamps, headlamp bulbs and high beam solenoids according to CAN communication signals from BCM.
- Unified meter and A/C amp. operates high beam indicator lamp according to CAN communication signals from BCM.

OUTLINE

Power is supplied at all times
- to headlamp high relay, located in IPDM E/R and
- to headlamp low relay, located in IPDM E/R, from battery directly,
- through 15A fuse [No. 78, located in IPDM E/R]
- to CPU (central processing unit) located in IPDM E/R,
- through 40A fusible link [letter F, located in the fuse, fusible link and relay box]
- to BCM terminal 55,
- through 10A fuse [No.18, located in fuse block (J/B)]
- to BCM terminal 42,
- through 10A fuse [No. 71, located in IPDM E/R]
- to CPU located in IPDM E/R,
- through 10A fuse [No.19, located in fuse block (J/B)]
- to combination meter terminal 24,
- through 10A fuse [No.33, located in the fuse, fusible link and relay box]

• to daytime light relay terminals 1 and 3.
With ignition switch in ON or START position, power is supplied
• to CPU located in IPDM E/R,
• through 10A fuse [No. 1, located in fuse block (J/B)]
• to BCM terminal 38,
• through 10A fuse [No.14, located in fuse block (J/B)]
• to combination meter terminal 23.
With ignition switch in ACC or ON position, power is supplied
• through 10A fuse [No. 6, located in fuse block (J/B)]
• to BCM terminal 11.
Ground is supplied
• to IPDM E/R terminals 38 and 60
• through grounds E17, E43 and B102 (with VDC system, navigation system or telephone)
• through grounds E17, E43 and F152 (without VDC system, navigation system and telephone),
• to BCM terminal 52
• through grounds M30 and M66,
• to combination meter terminals 10, 11 and 12
• through grounds M30 and M66.

HEADLAMP OPERATION

Low Beam Operation

With the lighting switch in 2ND position, the BCM receives input signal requesting the headlamps to illuminate. This input signal is communicated to the IPDM E/R through CAN communication. The CPU located in the IPDM E/R controls the headlamp low relay turned ON, which when energized, supplies power,
• through 15A fuse [No. 76, located in IPDM E/R]
• through IPDM E/R terminal 20
• to front combination lamp RH terminal 7,
• through 15A fuse [No. 86, located in IPDM E/R]
• through IPDM E/R terminal 30
• to front combination lamp LH terminal 7.
Ground is supplied
• to front combination lamp RH terminal 4, and
• to front combination lamp LH terminal 4
• through grounds E17, E43 and B102 (with VDC system, navigation system or telephone)
• through grounds E17, E43 and F152 (without VDC system, navigation system and telephone).
With power and ground supplied, headlamp bulbs illuminate.

High Beam Operation /Flash-to-Pass Operation

With the lighting switch in 2ND position and placed in HIGH or PASS position, the BCM receives input signal requesting headlamp high beams to illuminate. High beam request signal and low beam request signal is communicated to the IPDM E/R through CAN communication. The CPU located in the IPDM E/R controls headlamp high relay and headlamp low relay turned ON, which when energized, supplies power,
• through 15A fuse [No. 76, located in IPDM E/R]
• through IPDM E/R terminal 20
• to front combination lamp RH terminal 7,
• through 15A fuse [No. 86, located in IPDM E/R]
• through IPDM E/R terminal 30
• to front combination lamp LH terminal 7,
• through 10A fuse [No.72, located in IPDM E/R]
• through IPDM E/R terminal 27
• to front combination lamp RH terminal 3,
• through 10A fuse [No.74, located in IPDM E/R]
• through IPDM E/R terminal 28
• to front combination lamp LH terminal 3.
Ground is supplied
• to front combination lamp RH terminal 4, and
• to front combination lamp LH terminal 4
• through grounds E17, E43 and B102 (with VDC system, navigation system or telephone)
• through grounds E17, E43 and F152 (without VDC system, navigation system and telephone).
With the power and ground supplied, headlamp bulbs illuminate. High beam solenoids move the bulb shades in the front combination lamps, and the bulb shades change to high beam position.

Unified meter and A/C amp. receives signal from BCM through CAN communication, and then combination meter indicator illuminates high beam,

DAYTIME LIGHT OPERATION

Once the parking brake is turned OFF after ignition switch ON, if the lighting switch is turned OFF while engine is running, the BCM outputs the signal requesting parking, license plate, side marker, tail lamps and headlamp low beam to illuminate. This output signal is communicated to the IPDM E/R through CAN communication. The CPU located in the IPDM E/R controls headlamp low relay and daytime light relay turned ON, which when energized, supplies power,

- through 15A fuse [No.76, located in the IPDM E/R]
- through IPDM E/R terminal 20
- to front combination lamp RH terminal 7,
- through 15A fuse [No.86, located in the IPDM E/R]
- through IPDM E/R terminal 30
- to front combination lamp LH terminal 7,
- through 10A fuse [No.33, located in the fuse, fusible link and relay box]
- through daytime light relay terminal 2
- to IPDM E/R terminal 55,
- through daytime light relay terminal 5
- to front combination lamp RH terminal 6
- to front combination lamp LH terminal 6
- to rear combination lamp RH terminal 2
- to rear combination lamp LH terminal 2
- to license plate lamp RH terminal 2
- to license plate lamp LH terminal 2.

Ground is supplied

- to front combination lamp RH terminal 4
- to front combination lamp LH terminal 4
- to front combination lamp RH terminal 8
- to front combination lamp LH terminal 8
- through grounds E17, E43 and B102 (with VDC system, navigation system or telephone)
- through grounds E17, E43 and F152 (without VDC system, navigation system and telephone),
- to rear combination lamp RH terminal 3
- to rear combination lamp LH terminal 3
- to license plate lamp RH terminal 1
- to license plate lamp LH terminal 1
- through grounds B5, B6, D105 and T14 (Coupe models)
- through grounds B5, B6 and T14 (Roadster models).

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

OPERATION

Engine		With engine stopped									With engine running								
Lighting switch		OFF			1ST			2ND			OFF			1ST			2ND		
		OFF	Hi	P	T	Hi	P	Lo	Hi	P	OFF	Hi	P	T	Hi	P	Lo	Hi	P
Headlamp	High beams	–	–	–	–	–	×	–	×	×	–	–	×	–	–	×	–	×	×
	Low beams	–	–	–	–	–	–	×	–	–	×*	×*	–	×*	×*	–	×	–	–
Parking, license plate, side marker and tail lamps		–	–	–	×	–	×	×	×	×	×*	×*	–	×	×	×	×	×	×
Illumination		–	–	–	×	–	×	×	×	×	–	–	–	×	×	×	×	×	×

- T: “TAIL LAMP” position
- Hi: “HIGH BEAM” position
- Lo: “LOW BEAM” position
- P: “FLASH TO PASS” position
- ×: Lamp “ON”
- –: Lamp “OFF”

- *: Once the parking brake is turned OFF after ignition switch ON, parking, license plate, side marker, tail lamps and headlamp low are turned ON.

COMBINATION SWITCH READING FUNCTION

Refer to BCS-4, "System Description".

EXTERIOR LAMP BATTERY SAVER CONTROL

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

INTERLOCKED OPERATION WITH REMOTE KEYLESS ENTRY SYSTEM

Refer to BL-52.

INTERLOCKED OPERATION WITH VEHICLE SECURITY SYSTEM

Refer to BL-111.

XENON HEADLAMP

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

- The light produced by the headlamps is white color similar to sunlight that is easy to the eyes.
- Light output is nearly double that of halogen headlamps, affording increased area of illumination.
- Counter-reflected luminance increases and the contrast enhances on the wet road in the rain. That makes visibility go up more than the increase of the light volume.
- Power consumption is approximately 25 percent less than halogen headlamps, reducing battery load.

CAN Communication System Description

INFOID:0000000001647313

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

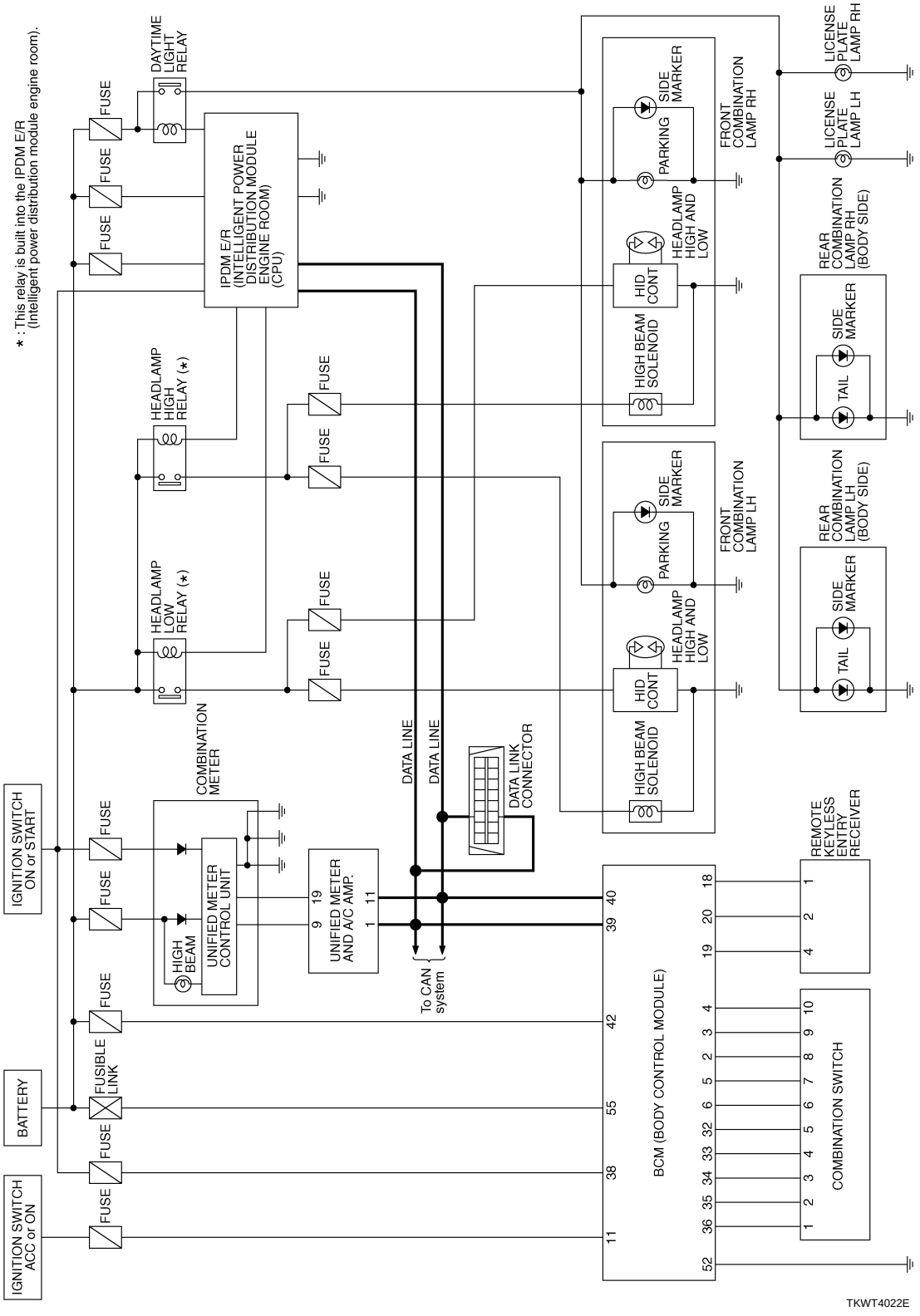
CAN Communication Unit

INFOID:0000000001647314

Refer to LAN-41, "CAN System Specification Chart".

Schematic

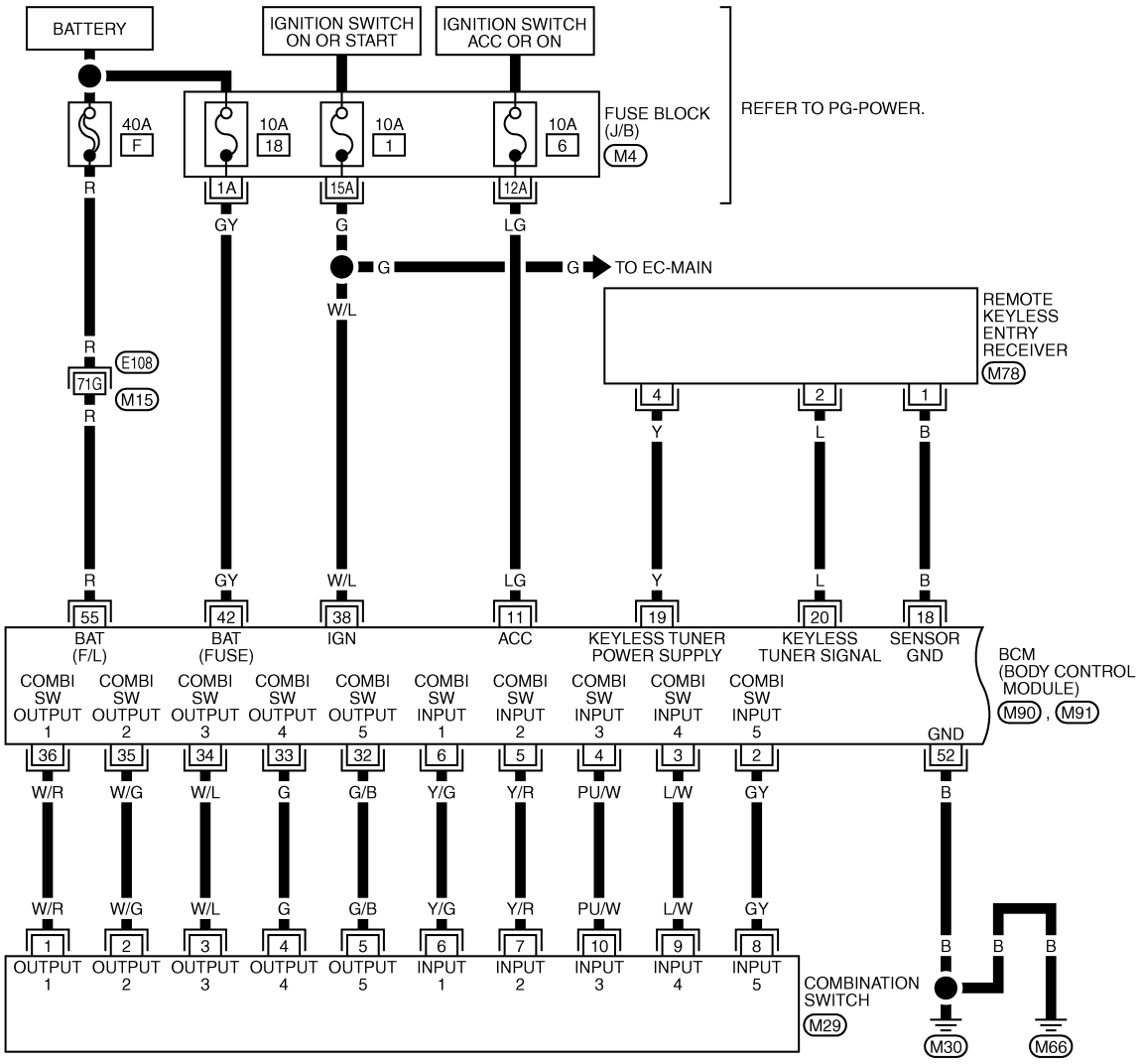
INFOID:0000000001647315

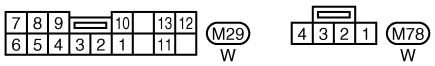


Wiring Diagram - DTRL -

INFOID:0000000001647316

LT-DTRL-01





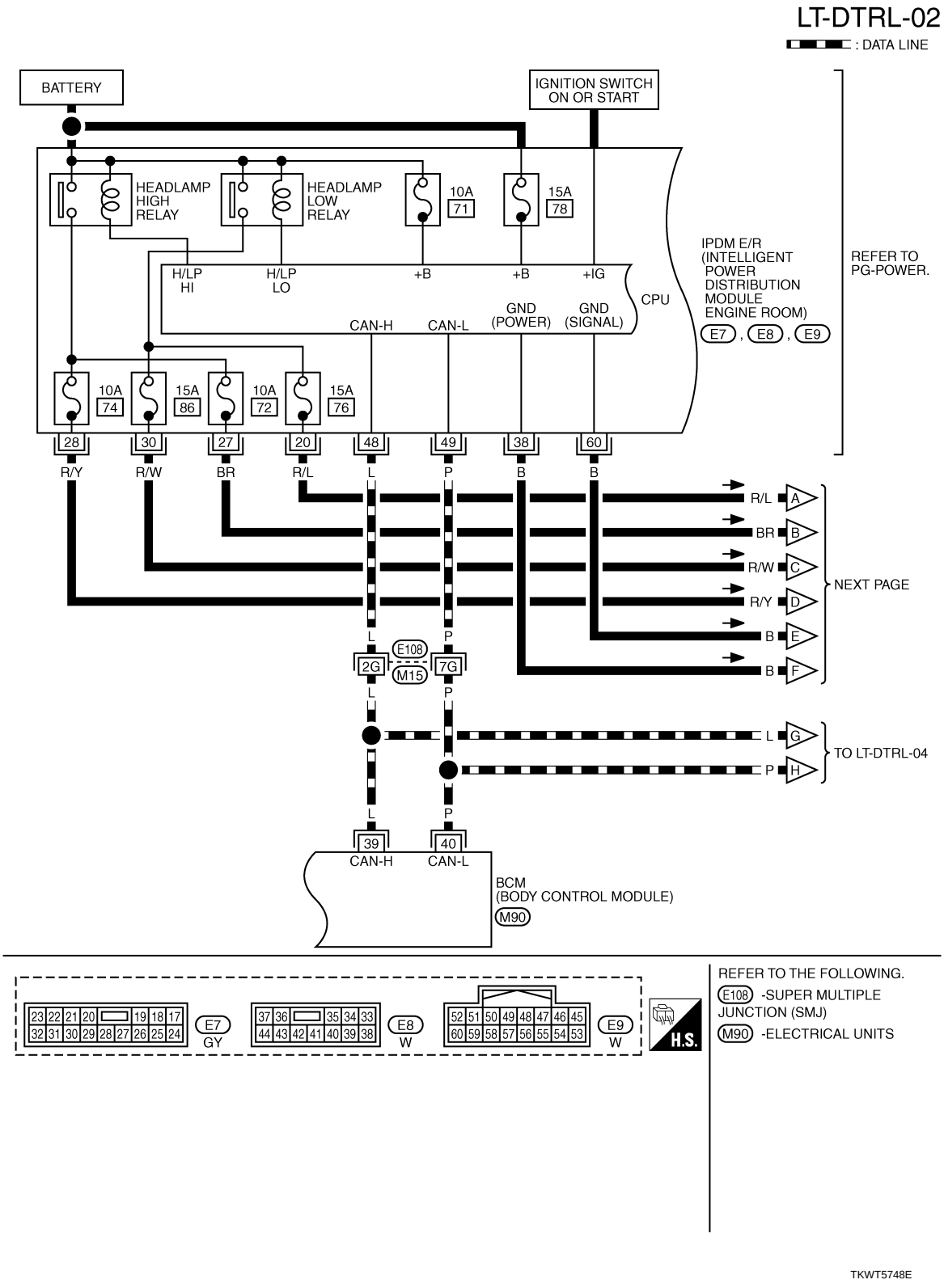
REFER TO THE FOLLOWING.

E108 -SUPER MULTIPLE JUNCTION (SMJ)

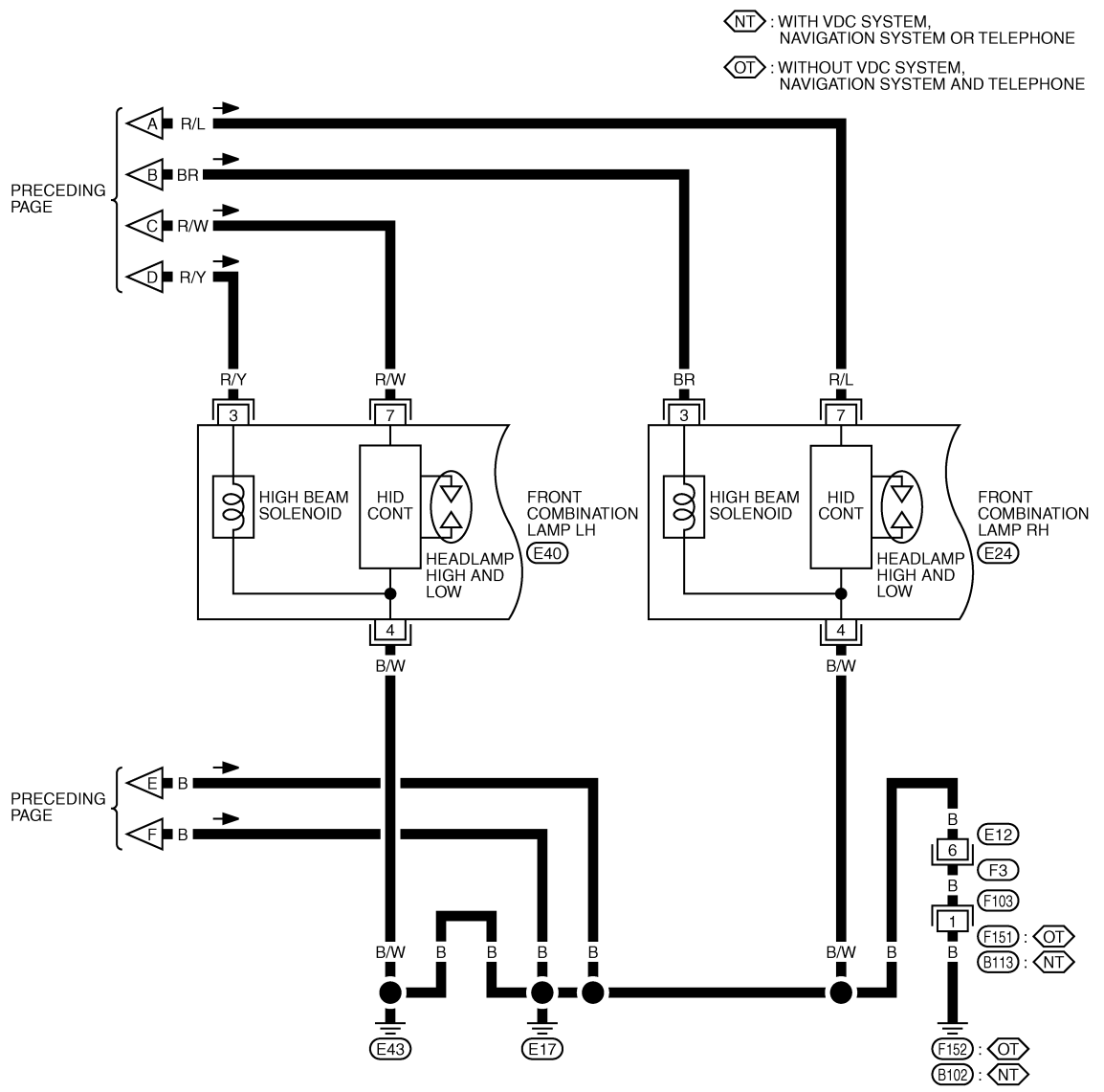
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

M90 , M91 -ELECTRICAL UNITS

TKWT5747E


LT-DTRL-02
: DATA LINE
BATTERY
IGNITION SWITCH ON OR START
HEADLAMP HIGH RELAY
HEADLAMP LOW RELAY
10A 71
15A 78
H/LP HI
H/LP LO
+B
+B
+IG
CPU
GND (POWER)
GND (SIGNAL)
CAN-H
CAN-L
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E7 , E8 , E9
REFER TO PG-POWER.
10A 74
15A 86
10A 72
15A 76
28
30
27
20
48
49
38
60
R/Y
R/W
BR
R/L
L
P
B
B
R/L A
BR B
R/W C
R/Y D
B E
B F
NEXT PAGE
E108
2G
M15
7G
L G
P H
TO LT-DTRL-04
39
40
CAN-H
CAN-L
BCM (BODY CONTROL MODULE)
M90
23 22 21 20 19 18 17
32 31 30 29 28 27 26 25 24
E7
GY
37 36 35 34 33
44 43 42 41 40 39 38
E8
W
52 51 50 49 48 47 46 45
60 59 58 57 56 55 54 53
E9
W
H.S.
REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M90 -ELECTRICAL UNITS
TKWT5748E

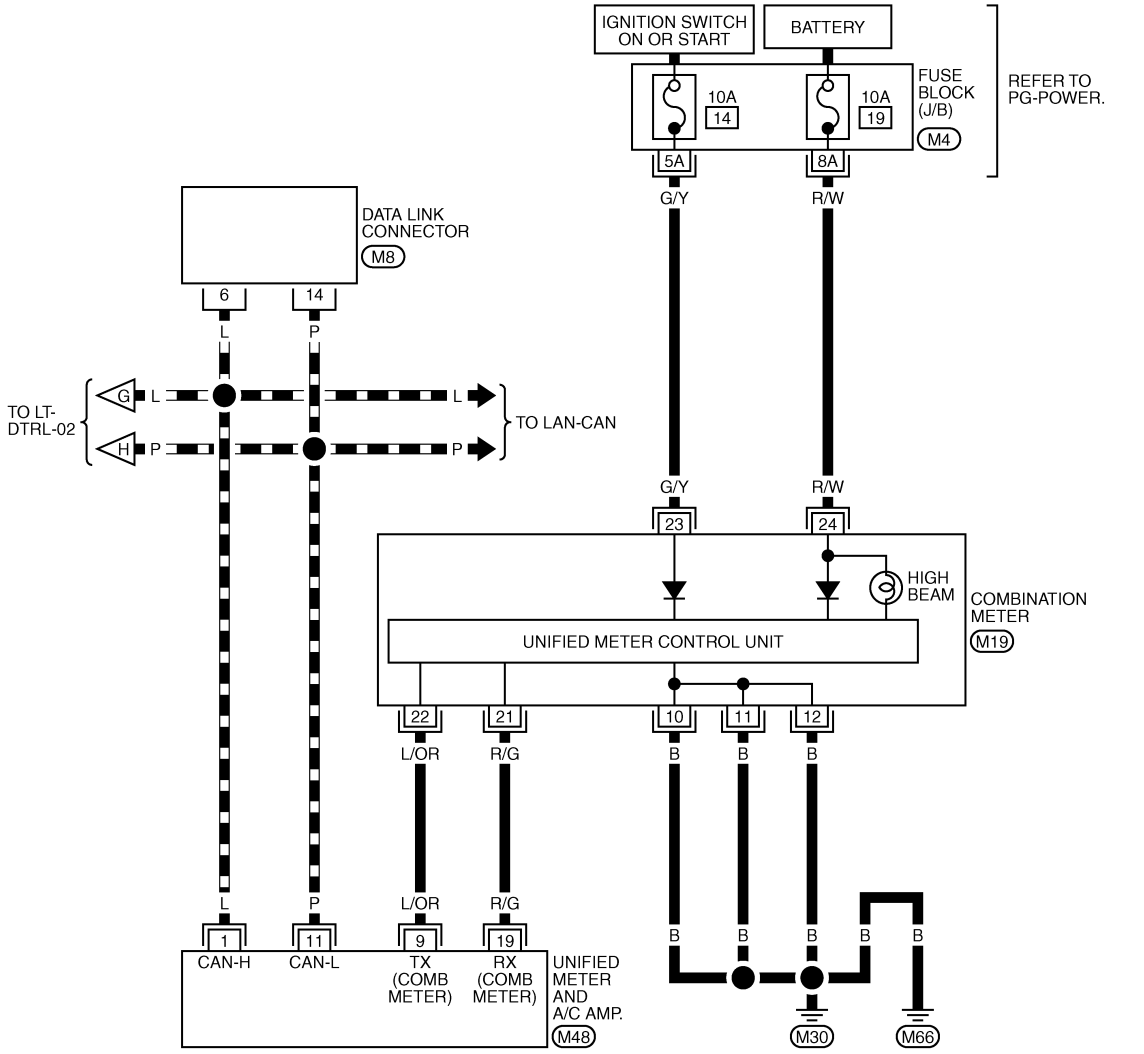
LT-DTRL-03

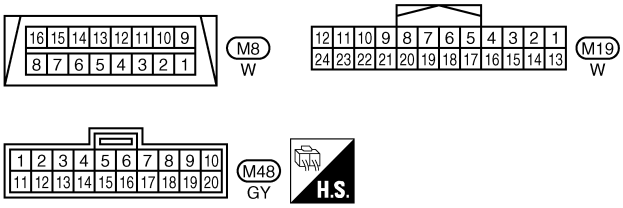


TKWT5749E

LT-DTRL-04

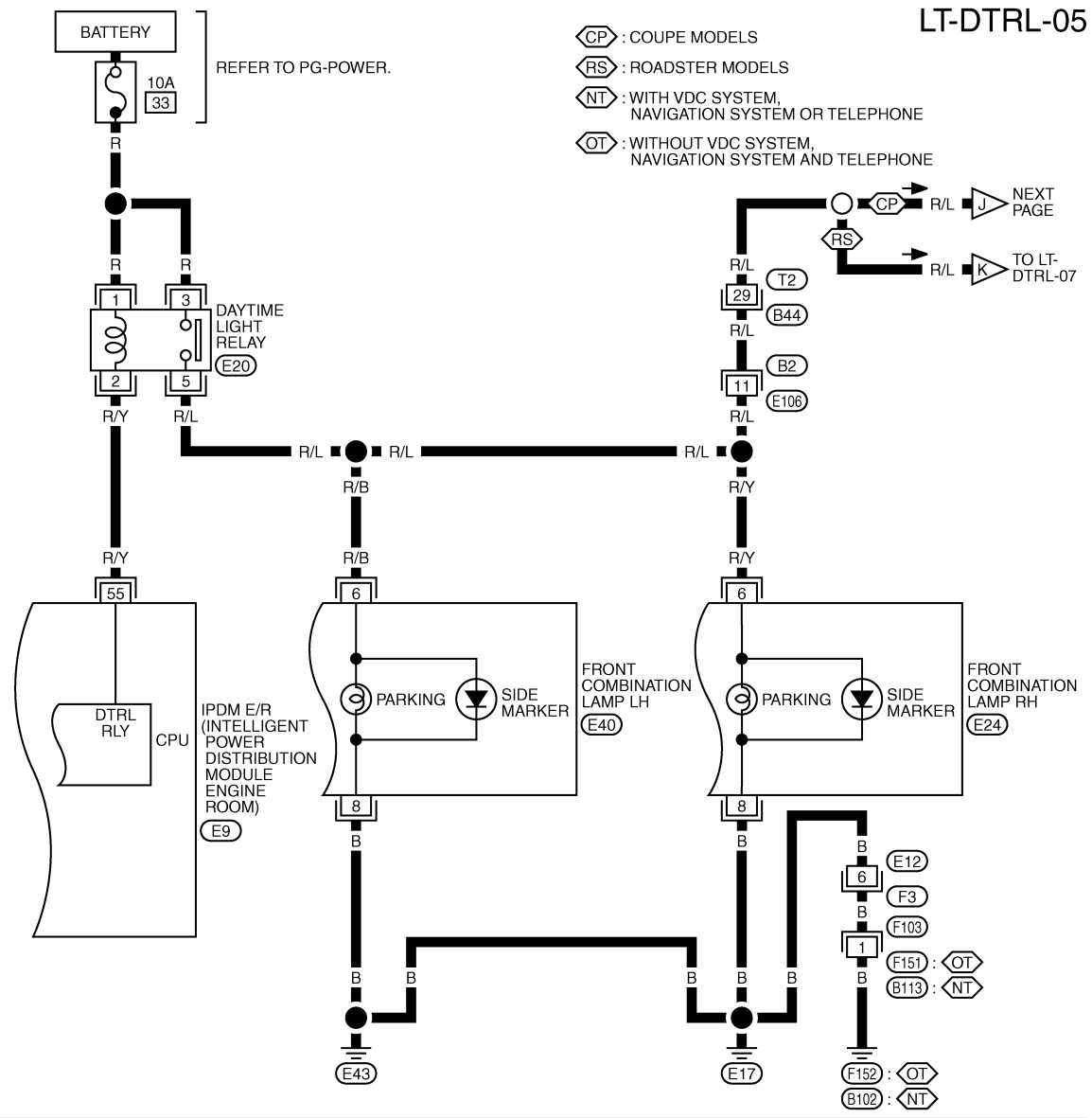
: DATA LINE





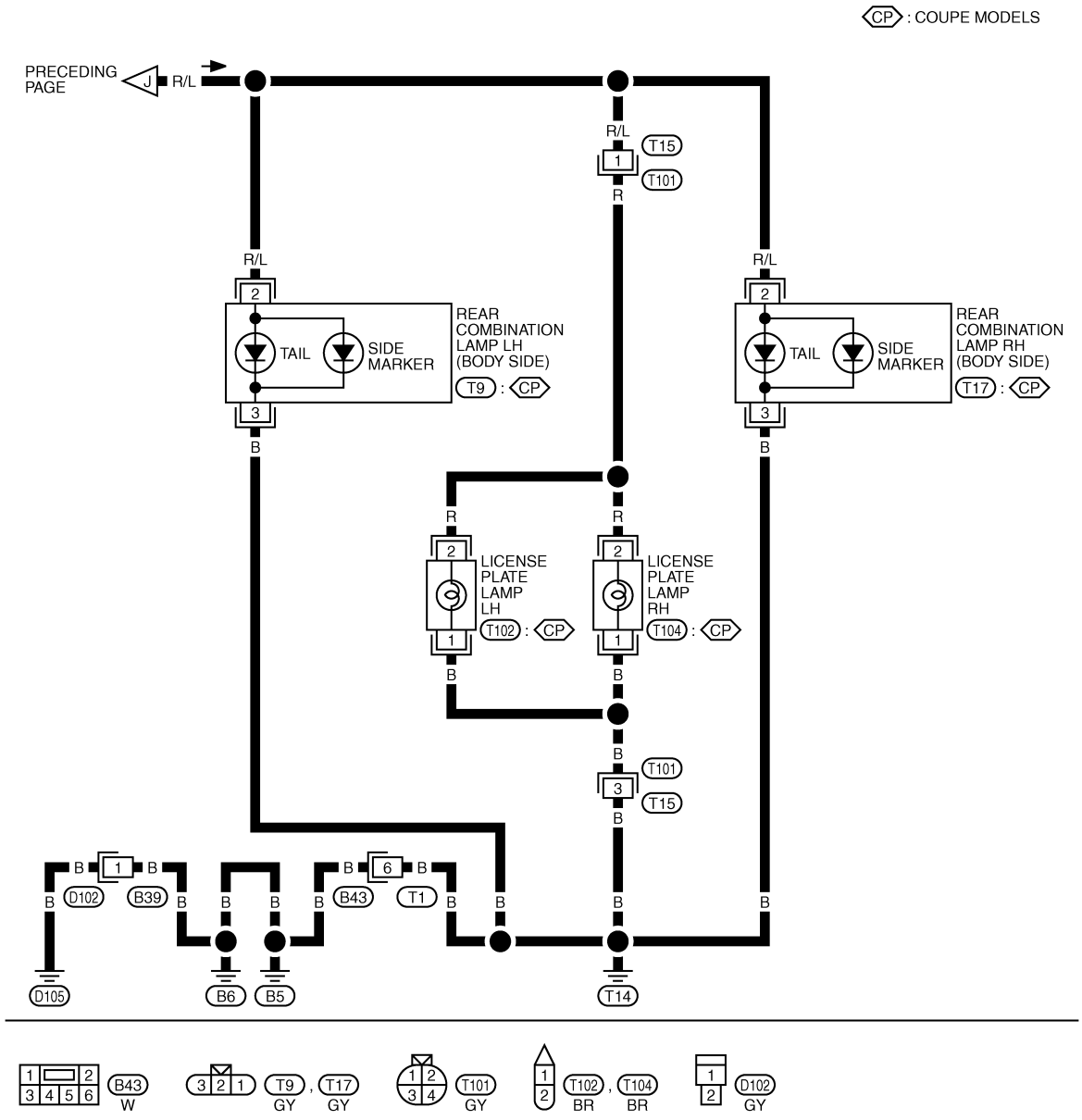
REFER TO THE FOLLOWING.
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT4026E


LT-DTRL-05
BATTERY
REFER TO PG-POWER.
10A
33
CP : COUPE MODELS
RS : ROADSTER MODELS
NT : WITH VDC SYSTEM, NAVIGATION SYSTEM OR TELEPHONE
OT : WITHOUT VDC SYSTEM, NAVIGATION SYSTEM AND TELEPHONE
NEXT PAGE
TO LT-DTRL-07
DAYTIME LIGHT RELAY
E20
T2
B44
B2
E106
DTRL RLY
CPU
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E9
PARKING
SIDE MARKER
FRONT COMBINATION LAMP LH
E40
FRONT COMBINATION LAMP RH
E24
E12
F3
F103
F151 : OT
B113 : NT
F152 : OT
B102 : NT
E43
E17
E9
W
H.S.
E20
L
E24 , E40 , F3
GY GY B
F103
W
B2
W
B44
W

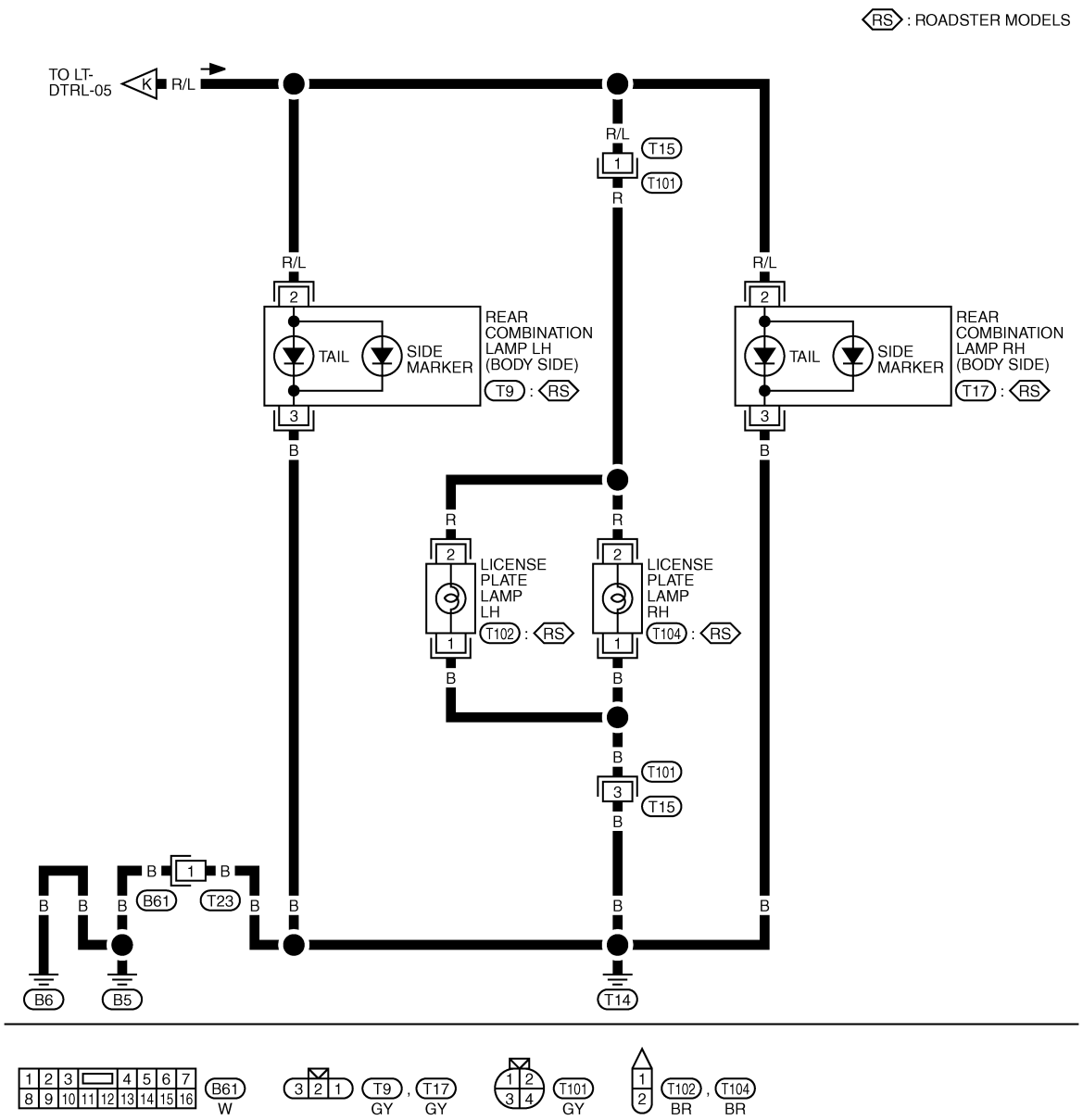
TKWT5750E

LT-DTRL-06



TKWT4028E

LT-DTRL-07



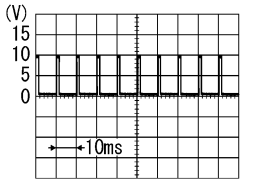
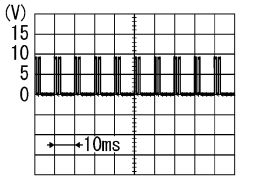
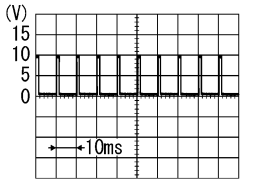
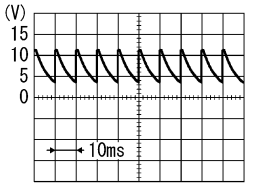
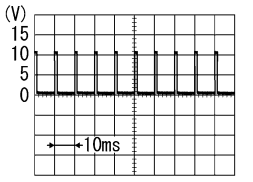
TKWT4029E

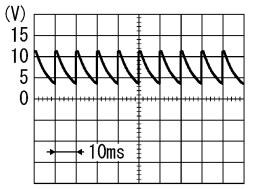
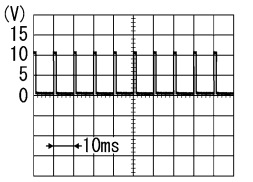
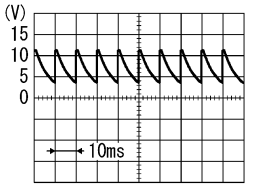
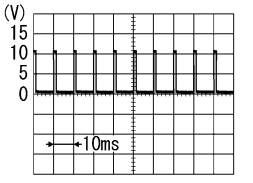
Terminal and Reference Value for BCM

INFOID:0000000001647317

CAUTION:

- **Check combination switch system terminal waveform under the loaded condition with lighting switch, turn signal switch and wiper switch OFF not to be fluctuated by overloaded.**
- **Turn wiper dial position to 4 except when checking waveform or voltage of wiper dial position. Wiper dial position can be confirmed on CONSULT-III. Refer to LT-85, "CONSULT-III Function (BCM)".**

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
2	GY	Combination switch input 5	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	Approx. 0 V
					Any of the conditions below • Lighting switch 1ST • Lighting switch HIGH beam (Operates only HIGH beam switch)	 PKIB4959J Approx. 1.0 V
					Lighting switch 2ND	 PKIB4953J Approx. 2.0 V
3	L/W	Combination switch input 4	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	Approx. 0 V
					Any of the conditions below • Lighting switch 2ND • Lighting switch PASSING (Operates only PASSING switch)	 PKIB4959J Approx. 1.0 V
11	LG	Ignition switch (ACC)	ACC	—		Battery voltage
33	G	Combination switch output 4	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	 PKIB4960J Approx. 7.2 V
					Lighting switch 1ST (The same result with lighting switch 2ND)	 PKIB4958J Approx. 1.2 V

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
34	W/L	Combination switch output 3	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	 PKIB4960J Approx. 7.2 V
					Any of the conditions below • Lighting switch 2ND • Lighting switch HI beam (Operates only HI beam switch)	 PKIB4958J Approx. 1.2 V
35	W/G	Combination switch output 2	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	 PKIB4960J Approx. 7.2 V
					Any of the conditions below • Lighting switch 2ND • Lighting switch PASSING (Operates only PASSING switch)	 PKIB4958J Approx. 1.2 V
38	W/L	Ignition switch (ON)	ON	—		Battery voltage
39	L	CAN – H	—	—		—
40	P	CAN – L	—	—		—
42	GY	Battery power supply	OFF	—		Battery voltage
52	B	Ground	ON	—		Approx. 0 V
55	R	Battery power supply	OFF	—		Battery voltage

Terminal and Reference Value for IPDM E/R

INFOID:0000000001647318

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
20	R/L	Headlamp low (RH)	ON	Lighting switch 2ND position	OFF	Approx. 0 V
					ON	Battery voltage

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
27	BR	Headlamp high (RH)	ON	Lighting switch HIGH or PASS position	OFF	Approx. 0 V
					ON	Battery voltage
28	R/Y	Headlamp high (LH)	ON	Lighting switch HIGH or PASS position	OFF	Approx. 0 V
					ON	Battery voltage
30	R/W	Headlamp low (LH)	ON	Lighting switch 2ND position	OFF	Approx. 0 V
					ON	Battery voltage
38	B	Ground	ON	—		Approx. 0 V
48	L	CAN – H	—	—		—
49	P	CAN – L	—	—		—
55	R/Y	Daytime light relay signal	ON	Lighting switch 1ST position	OFF	Approx. 0 V
					ON	Battery voltage
60	B	Ground	ON	—		Approx. 0 V

How to Proceed with Trouble Diagnosis

INFOID:0000000001647319

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-31, "System Description".
3. Perform the preliminary check. Refer to LT-45, "Preliminary Check".
4. Check symptom and repair or replace the cause of malfunction.
5. Does headlamp operate normally? If YES, GO TO 6. If NO, GO TO 4.
6. INSPECTION END

Preliminary Check

INFOID:0000000001647320

CHECK POWER SUPPLY AND GROUND CIRCUIT

1.CHECK FUSES AND FUSIBLE LINK

Check for blown fuses and fusible link.

UNIT	POWER SOURCE	Fuse and fusible link No.
BCM	Battery	F
		18
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
IPDM E/R	Battery	33
		72
		74
		76
		86

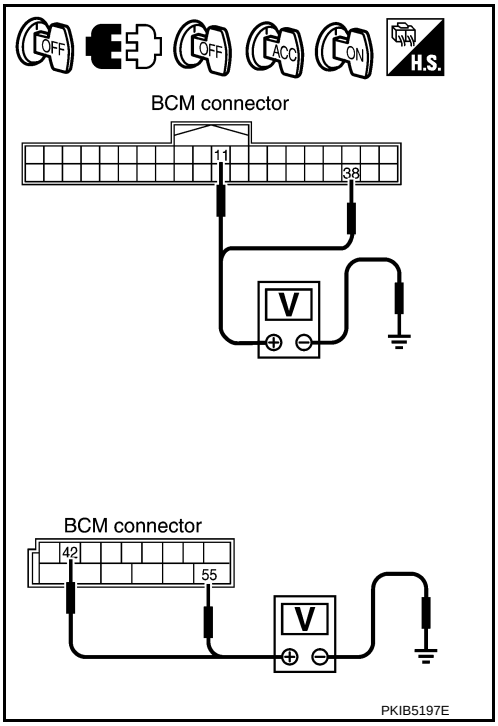
Refer to LT-36, "Wiring Diagram - DTRL -".

OK or NG

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

2.CHECK POWER SUPPLY CIRCUIT

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



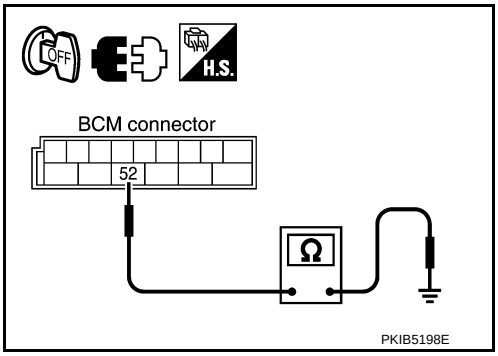
Terminals			Ignition switch position		
(+)		(-)	OFF	ACC	ON
BCM connector	Terminal				
M90	11	Ground	Approx. 0 V	Battery voltage	Battery voltage
	38		Approx. 0 V	Approx. 0 V	Battery voltage
M91	42		Battery voltage	Battery voltage	Battery voltage
	55		Battery voltage	Battery voltage	Battery voltage

OK or NG

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.



BCM connector	Terminal	Ground	Continuity
M91	52		Yes

OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

CONSULT-III Function (BCM)

INFOID:0000000001647321

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

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

WORK SUPPORT

Display Item List

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

DATA MONITOR

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 1 judged from lighting switch signal.
HEAD LAMP SW 2	“ON/OFF”	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
LIGHT SW 1 ST	“ON/OFF”	Displays status (lighting switch 1ST or 2ND position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
PASSING SW	“ON/OFF”	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW NOTE	“ON/OFF”	—
DOOR SW - DR	“ON/OFF”	Displays status of driver door as judged from driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - AS	“ON/OFF”	Displays status of passenger door as judged from passenger door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RR NOTE	“OFF”	—
DOOR SW - RL NOTE	“OFF”	—
BACK DOOR SW	“ON/OFF”	• Displays status of back door as judged from back door switch signal. (Coupe models) • Displays status of rear trunk hood as judged from trunk lamp switch signal. (Roadster models)
TURN SIGNAL R	“ON/OFF”	Displays status (Turn right: ON/Others: OFF) as judged from lighting switch signal.
TURN SIGNAL L	“ON/OFF”	Displays status (Turn left: ON/Others: OFF) as judged from lighting switch signal.
ENGINE RUN	“ON/OFF”	Displays status (engine running: ON/ engine stopped: OFF) of engine judged from engine run signal.
PKB SW	“ON/OFF”	Displays status (parking brake released: ON/ parking brake applied: OFF) of parking brake switch judged from parking brake switch signal.
CARGO LAMP SW NOTE	“OFF”	—

NOTE:
This item is displayed, but cannot be monitored.

ACTIVE TEST

Display Item List

Test item	Description
TAIL LAMP	Allows tail lamp relay to operate by switching ON–OFF.
HEAD LAMP	Allows headlamp relay to operate by switching ON–OFF.
FR FOG LAMP NOTE	—
CORNERING LAMP NOTE	—
DAYTIME RUNNING LIGHT	Allows headlamp low relay and daytime light relay to operate switching ON–OFF.

NOTE:
This item is displayed, but cannot be tested.

CONSULT-III Function (IPDM E/R)

INFOID:0000000001647322

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

Check Item, Diagnosis Mode	Description
SELF-DIAG RESULTS	Refer to PG-17, "CONSULT-III Function (IPDM E/R)".
DATA MONITOR	The input/output data of IPDM E/R is displayed in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST	IPDM E/R sends a drive signal to electronic components to check their operation.

DATA MONITOR

All Signals, Main Signals, Selection From Menu

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

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

ACTIVE TEST

Display Item List

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 ON, LO ON) at your option (Headlamp high beam repeats ON–OFF every 1 second).

Daytime Light Control Does Not Operate

INFOID:0000000001647323

NOTE:
Check if parking, license plate, side marker, tail lamps and head lamps low operates normally.

1.ACTIVE TEST

CONSULT-III ACTIVE TEST
1. Select "DAYTIME RUNNING LIGHT" of BCM active test item.
2. With operating the test item, check the headlamp low beam, parking, license plate and tail lamps operate.

Headlamp low beam, parking, license plate and tail lamps should operate.

OK or NG

OK >> GO TO 2.
NG >> Replace IPDM E/R. Refer to PG-23, "Removal and Installation of IPDM E/R".

2.CHECK INPUT SIGNAL

CONSULT-III DATA MONITOR
1. Select "HEAD LAMP" of BCM data monitor item.
2. With the engine running or stop, check the monitor status.

Engine running : ENGINE RUN ON
Engine stop : ENGINE RUN OFF

3. With operating the parking brake, check the monitor status.

Parking brake ON : PKB SW ON
Parking brake OFF : PKB SW OFF

OK or NG

OK >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM".
NG >> Refer to BCS-15, "U1000 CAN Communication Circuit".

Headlamp Does Not Change To High Beam (Both Sides)

INFOID:0000000001647324

1.CHECK COMBINATION SWITCH INPUT SIGNAL

CONSULT-III DATA MONITOR
1. Select "HEAD LAMP" of BCM data monitor item.
2. With operating the lighting switch, check the monitor status.

When lighting switch is HIGH BEAM : HI BEAM SW ON

Without CONSULT-III
Refer to LT-86, "Combination Switch Inspection".

OK or NG

OK >> GO TO 2.
NG >> Check combination switch (lighting switch). Refer to LT-86, "Combination Switch Inspection".

2.HEADLAMP ACTIVE TEST

CONSULT-III ACTIVE TEST
1. Select "LAMPS" of IPDM E/R active test item.
2. With operating the test item, check the headlamp high beam operation.

Headlamp high beam should operate.
(Headlamp high beam repeats ON-OFF every 1 second).

IPDM E/R AUTO ACTIVE TEST
1. Start auto active test. Refer to PG-19, "Auto Active Test".
2. Check that the headlamp high beam operation.

Headlamp high beam should operate.

OK or NG

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

3.CHECK IPDM E/R

1. Select "HL LO REQ" and "HL HI REQ" of IPDM E/R data monitor item.
2. With operating the lighting switch, check the monitor status

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

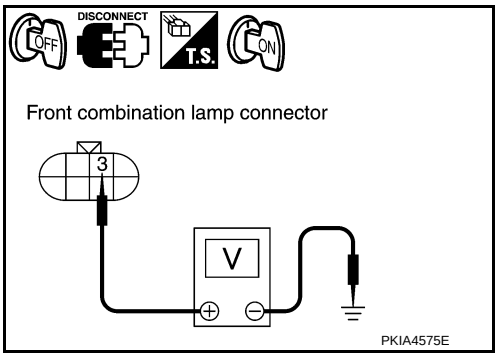
OK or NG

OK >> Replace IPDM E/R. Refer to PG-23, "Removal and Installation of IPDM E/R".
NG >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM".

4.CHECK HEADLAMP INPUT SIGNAL

CONSULT-III ACTIVE TEST

1. Turn ignition switch OFF.
2. Disconnect front combination lamp RH and LH connector.
3. Select "LAMPS" of IPDM E/R active test item
4. With operating the test item, check voltage between front combination lamp (RH and LH) harness connector and ground.
   NOTE:
   Headlamp high beam repeats ON–OFF every 1 second.



Terminals				Voltage (Approx.)
(+)			(-)	
Front combination lamp connector		Terminal		
RH	E24	3	Ground	Battery voltage
LH	E40	3		

IPDM E/R AUTO ACTIVE TEST

1. Turn ignition switch OFF.
2. Disconnect front combination lamp RH and LH connector.
3. Start auto active test. Refer to PG-19, "Auto Active Test".
4. With operating the test item, check voltage between front combination lamp (RH and LH) harness connector and ground.
   NOTE:
   Headlamp high beam repeats ON–OFF every 1 second.

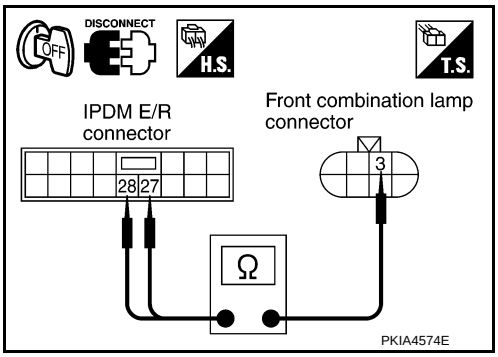
Terminals				Voltage (Approx.)
(+)			(-)	
Front combination lamp connector		Terminal		
RH	E24	3	Ground	Battery voltage
LH	E40	3		

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 and front combination lamp (RH and LH) harness connector.



Terminals					Continuity
IPDM E/R			Front combination lamp		
Connector		Terminal	Connector	Terminal	
RH	E7	27	E24	3	Yes
LH		28	E40	3	

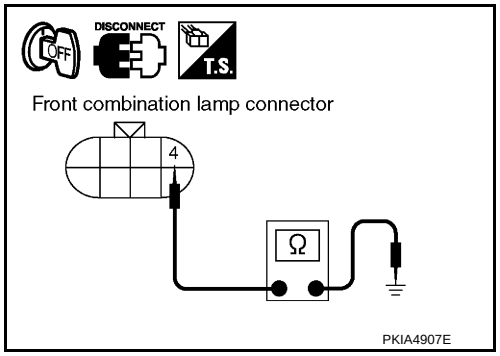
OK or NG

OK >> Replace IPDM E/R. Refer to PG-23, "Removal and Installation of IPDM E/R".
NG >> Repair harness or connector.

6. CHECK HEADLAMP GROUND

Check continuity between front combination lamp (RH and LH) harness connector and ground.

Front combination lamp connector		Terminal	Ground	Continuity
RH	E24	4		Yes
LH	E40	4		



OK or NG

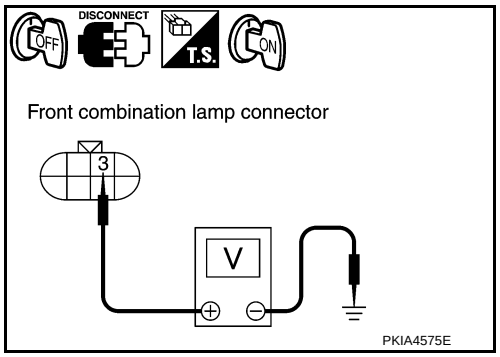
OK >> Check headlamp harness, connector and bulb.
NG >> Repair harness or connector.

Headlamp Does Not Change To High Beam (One Side)

INFOID:0000000001647325

1.CHECK HEADLAMP INPUT SIGNAL

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



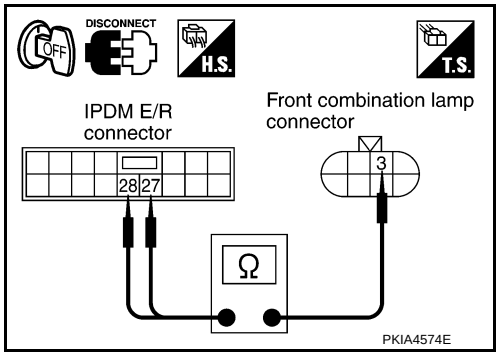
Terminals				Voltage (Approx.)
(+)			(-)	
Front combination lamp connector		Terminal		
RH	E24	3	Ground	Battery voltage
LH	E40	3		

OK or NG

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

2.CHECK HEADLAMP 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 RH or LH harness connector.



Terminals					Continuity
IPDM E/R			Front combination lamp		
Connector		Terminal	Connector	Terminal	
RH	E7	27	E24	3	Yes
LH		28	E40	3	

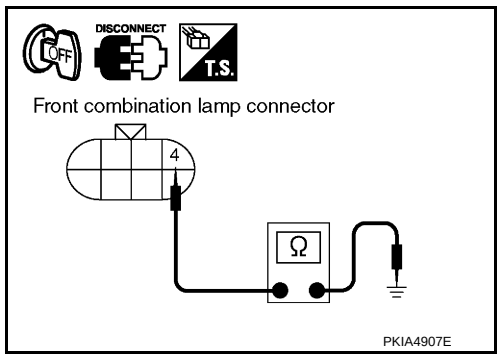
OK or NG

OK >> Replace IPDM E/R. Refer to PG-23, "Removal and Installation of IPDM E/R".
NG >> Repair harness or connector.

3.CHECK HEADLAMP GROUND

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

Front combination lamp connector		Terminal	Ground	Continuity
RH	E24	4		Yes
LH	E40	4		



OK or NG

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

High Beam Indicator Lamp Does Not Illuminate

INFOID:0000000001647326

1.CHECK BULB

Check bulb of high beam indicator lamp.

OK or NG

OK >> Replace combination meter. Refer to DI-22, "Removal and Installation for Combination Meter".
NG >> Replace indicator bulb.

Headlamp Low Beam Does Not Illuminate (Both Sides)

INFOID:0000000001647327

1.CHECK COMBINATION SWITCH INPUT SIGNAL

CONSULT-III DATA MONITOR
1. Select "HEAD LAMP SW1" and "HEAD LAMP SW2" of BCM data monitor item.
2. With operating the lighting switch, check the monitor status.

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

CHECK COMBINATION SWITCH
Refer to LT-86, "Combination Switch Inspection".

OK or NG

OK >> GO TO 2.
NG >> Check combination switch (lighting switch). Refer to LT-86, "Combination Switch Inspection".

2.HEADLAMP ACTIVE TEST

CONSULT-III ACTIVE TEST
1. Select "LAMPS" of IPDM E/R active test item.
2. With operating the test item, check the headlamp low beam operation.

Headlamp low beam should operate.

IPDM E/R AUTO ACTIVE TEST
1. Start auto active test. Refer to PG-19, "Auto Active Test".
2. Check that the headlamp low beam operation.

Headlamp low beam should operate.

OK or NG

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

3.CHECK IPDM E/R

1. Select "HL LO REQ" of IPDM E/R data monitor item.
2. With operating the lighting switch, check the monitor status.

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

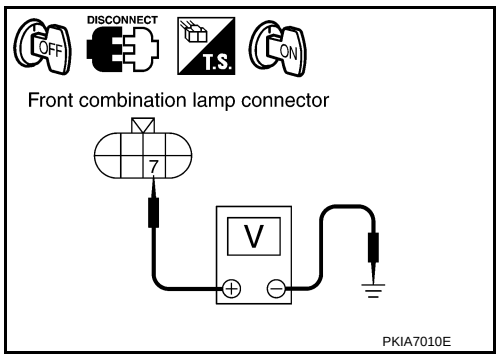
OK or NG

OK >> Replace IPDM E/R. Refer to PG-23, "Removal and Installation of IPDM E/R".
NG >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM".

4. CHECK HEADLAMP INPUT SIGNAL

CONSULT-III ACTIVE TEST

1. Turn ignition switch OFF.
2. Disconnect front combination lamp RH and LH connector.
3. Select "LAMPS" of IPDM E/R active test item.
4. With operating the test item, check voltage between front combination lamp (RH and LH) harness connector and ground.



Terminals				Voltage (Approx.)
(+)			(-)	
Front combination lamp connector		Terminal		
RH	E24	7	Ground	Battery voltage
LH	E40	7		

IPDM E/R AUTO ACTIVE TEST

1. Turn ignition switch OFF.
2. Disconnect front combination lamp RH and LH connector.
3. Start auto active test. Refer to PG-19, "Auto Active Test".
4. With operating the test item, check voltage between front combination lamp (RH and LH) harness connector and ground.

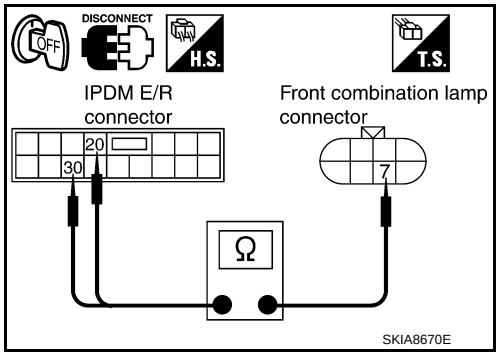
Terminals				Voltage (Approx.)
(+)			(-)	
Front combination lamp connector		Terminal		
RH	E24	7	Ground	Battery voltage
LH	E40	7		

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 and front combination lamp (RH and LH) harness connector.



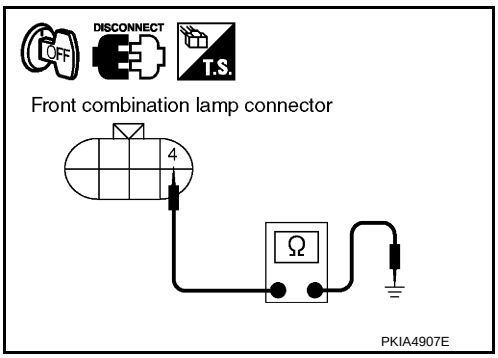
Terminals					Continuity
IPDM E/R			Front combination lamp		
Connector		Terminal	Connector	Terminal	
RH	E7	20	E24	7	Yes
LH		30	E40	7	

OK or NG

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

6.CHECK HEADLAMP GROUND

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



Front combination lamp connector		Terminal	Ground	Continuity
RH	E24	4		Yes
LH	E40	4		

OK or NG

OK >> Check headlamp harness and connectors, ballasts (HID control unit), and xenon bulbs. Refer to LT-56, "Xenon Headlamp Trouble Diagnosis".

NG >> Repair harness or connector.

Headlamp Low Beam Does Not Illuminate (One Side)

INFOID:0000000001647328

1.CHECK BULB

Check ballast (HID control unit) and xenon bulb of lamp which does not illuminate. Refer to LT-56, "Xenon Headlamp Trouble Diagnosis".

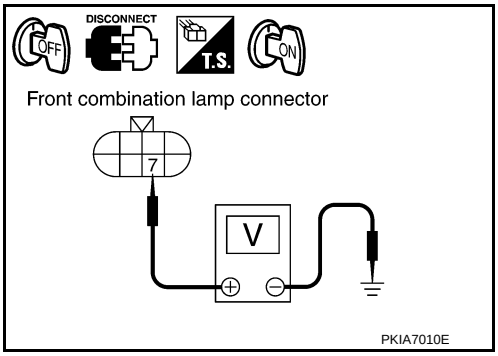
OK or NG

OK >> GO TO 2.

NG >> Replace malfunctioning part.

2.CHECK HEADLAMP INPUT SIGNAL

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



Terminals				Voltage (Approx.)
(+)			(-)	
Front combination lamp connector		Terminal		
RH	E24	7	Ground	Battery voltage
LH	E40	7		

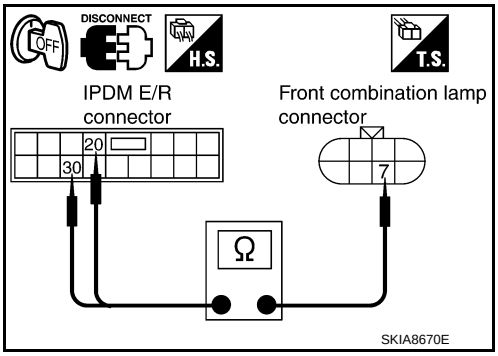
OK or NG

OK >> GO TO 4.

NG >> GO TO 3.

3.CHECK HEADLAMP CIRCUIT

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



Terminals					Continuity
IPDM E/R			Front combination lamp		
Connector		Terminal	Connector	Terminal	
RH	E7	20	E24	7	Yes
LH		30	E40	7	

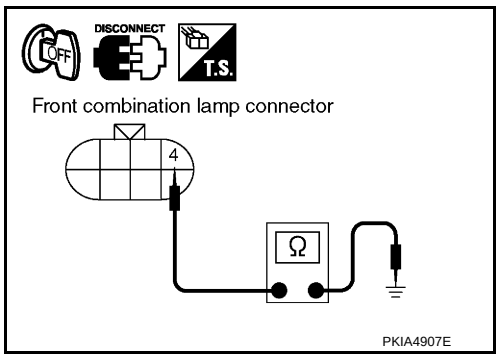
OK or NG

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

4. CHECK HEADLAMP GROUND

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

Front combination lamp connector		Terminal	Ground	Continuity
RH	E24	4		Yes
LH	E40	4		



OK or NG

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

Headlamps Does Not Turn OFF

INFOID:0000000001647329

1. CHECK HEADLAMP TURN OFF

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

OK or NG

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

2. CHECK COMBINATION SWITCH INPUT SIGNAL

CONSULT-III DATA MONITOR
1. Select "HEAD LAMP1" and "HEAD LAMP2" of BCM data monitor item.
2. With operating the lighting switch, check the monitor status.

When lighting switch is OFF : HEAD LAMP SW1 OFF
: HEAD LAMP SW2 OFF

OK or NG

OK >> Replace IPDM E/R. Refer to PG-23, "Removal and Installation of IPDM E/R".
NG >> Check combination switch (lighting switch). Refer to LT-86, "Combination Switch Inspection".

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

Perform self-diagnosis for “BCM” with CONSULT-III.

Display of self-diagnosis results

NO DTC>> Replace IPDM E/R. Refer to PG-23, "Removal and Installation of IPDM E/R".
CAN COMM CIRCUIT>> Refer to BCS-15, "U1000 CAN Communication Circuit".

General Information for Xenon Headlamp Trouble Diagnosis

INFOID:0000000001647330

In most cases, malfunction of xenon headlamp - “does not illuminate”, “flickers” or “dark” - is caused by a malfunctioning xenon bulb. A malfunctioning HID control unit or lamp housing, however, may be a cause. Be sure to perform trouble diagnosis following the steps described below.

Caution:

INFOID:0000000001647331

- Installation or removal of connector must be done with lighting switch OFF.
- Disconnect the battery cable from the negative terminal or remove power fuse.
  CAUTION:
  After the battery cables are disconnected, never open/close the driver and/or front passenger door with the window in the full up position. The automatic window adjusting function will not work and the side roof panel may be damaged.
- When the lamp is illuminated (when lighting switch is ON), never touch harness, HID control unit, inside of lamp, or lamp metal parts.

- To check illumination, temporarily install lamp in vehicle. Be sure to connect power at vehicle side connector.
- If error can be traced directly to electrical system, first check for items such as blown fuses and fusible links, broken wires or loose connectors, dislocated terminals, and improper connections.
- Never work with wet hands.
- Using a tester for HID control unit circuit trouble diagnosis is prohibited.
- Disassembling HID control unit or harnesses (bulb socket harness, ECM harness) is prohibited.
- Immediately after illumination, light intensity and color will fluctuate, but there is nothing wrong.
- When bulb has come to end of its life, brightness will drop significantly, it will flash repeatedly, or light color will turn reddish.

Xenon Headlamp Trouble Diagnosis

INFOID:0000000001647332

1.CHECK 1: XENON HEADLAMP LIGHTING

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

OK or NG

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

2.CHECK 2: XENON HEADLAMP LIGHTING

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

OK or NG

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

3.CHECK 3: XENON HEADLAMP LIGHTING

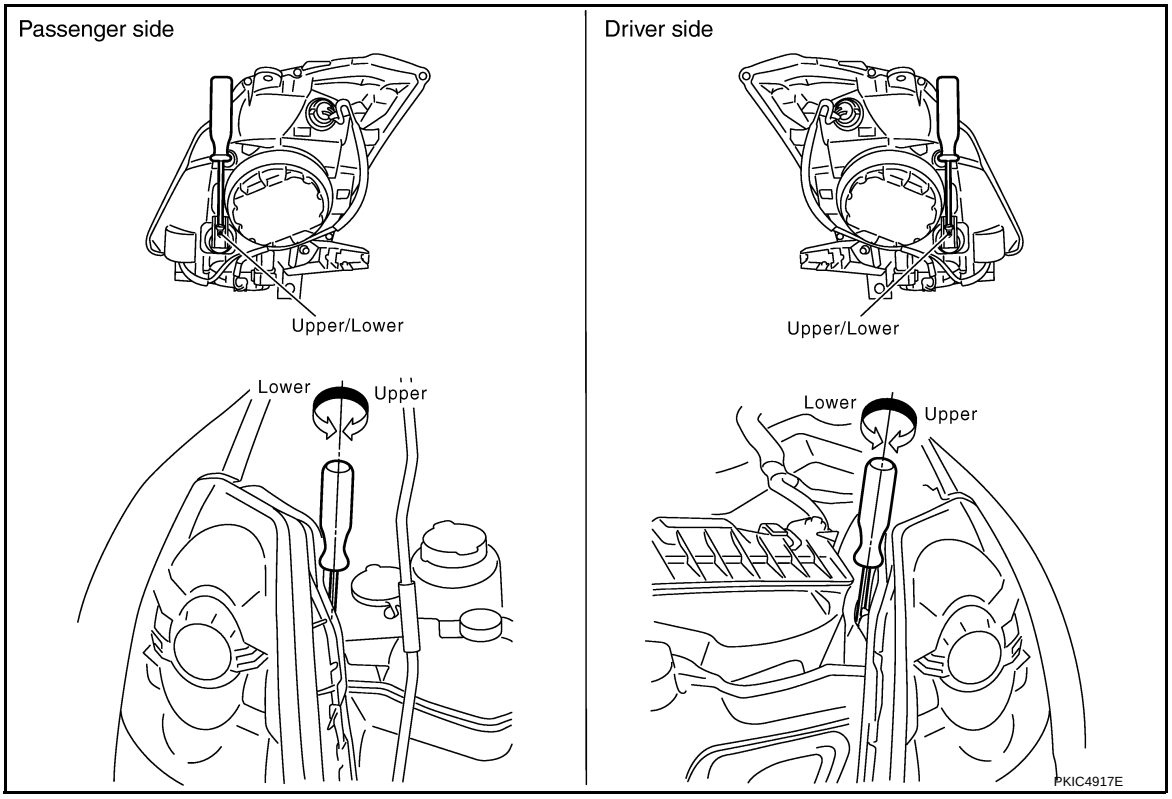
Install normal xenon lamp housing assembly to corresponding xenon headlamp, and check if lamp lights up.

OK or NG

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

Aiming Adjustment

INFOID:0000000001647333



PREPARATION BEFORE ADJUSTING

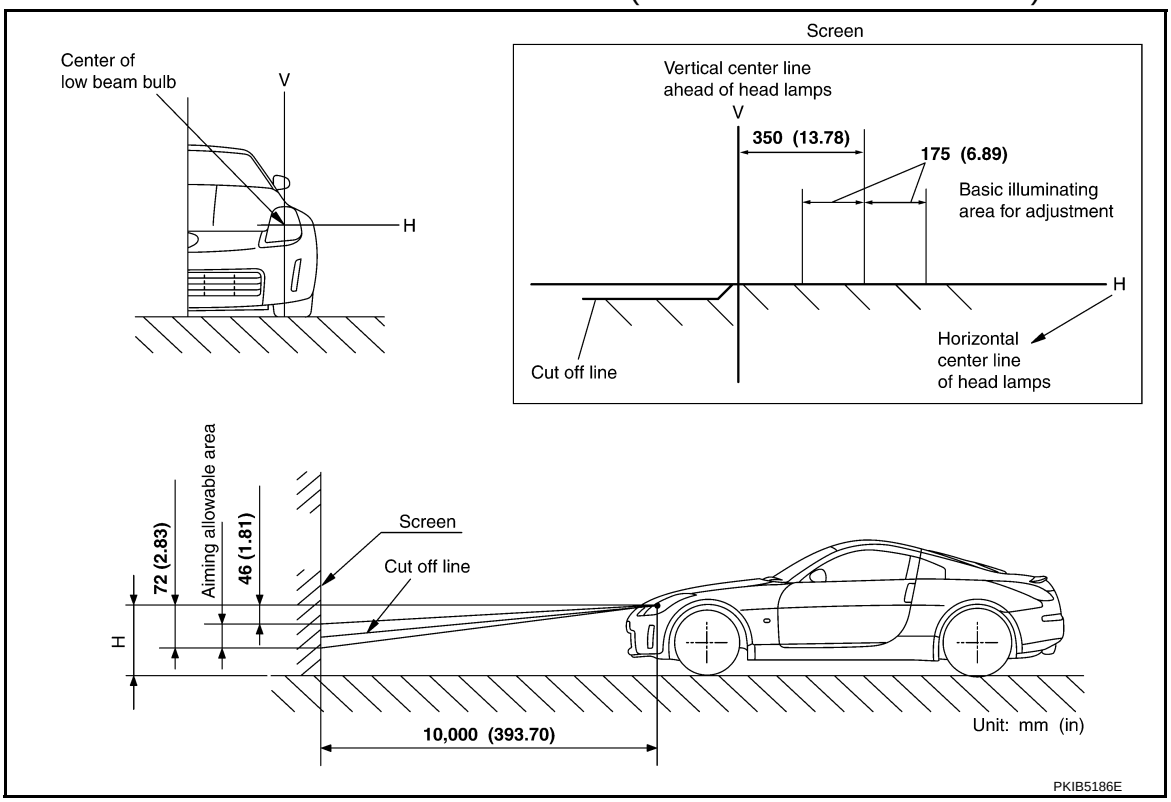
For details, refer to the regulations in your own country.
Before performing aiming adjustment, check the following.

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

LOW BEAM AND HIGH BEAM

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

ADJUSTMENT USING AN ADJUSTMENT SCREEN (LIGHT/DARK BORDERLINE)



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

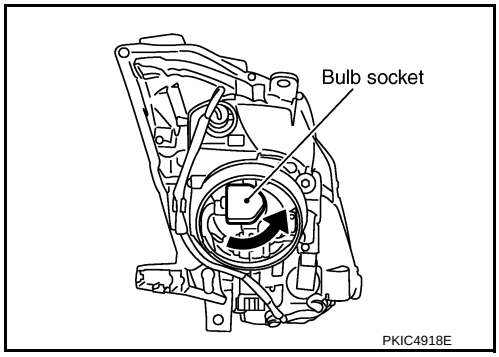
- Basic illumination area for adjustment should be within the range shown on the aiming chart. Adjust headlamp accordingly.

Bulb Replacement

INFOID:0000000001647334

HEADLAMP HIGH/LOW BEAM

1. Turn lighting switch OFF.
2. Open the driver and front passenger window, and then disconnect the battery cable from the negative terminal or remove power fuse.
   CAUTION:
   After the battery cables are disconnected, never open/close the driver and/or front passenger door with the window in the full up position. The automatic window adjusting function will not work and the side roof panel may be damaged.
3. Remove headlamp. Refer to LT-58, "Removal and Installation".
4. Turn plastic cap counterclockwise and unlock it.
5. Turn bulb socket counterclockwise and unlock it.



6. Unlock retaining spring and remove bulb from headlamp.
7. Installation is the reverse order of removal.
   NOTE:
   After installation, perform aiming adjustment. Refer to LT-56, "Aiming Adjustment".

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

PARKING LAMP

1. Turn lighting switch OFF.
2. Remove fender protector (front). Refer to EI-19.
3. Turn bulb socket counterclockwise and unlock it.
4. Remove bulb from its socket.
5. Installation is the reverse order of removal.

Parking lamp : 12V - 5W

FRONT TURN SIGNAL LAMP

1. Turn lighting switch OFF.
2. Remove fender protector (front). Refer to EI-19.
3. Turn bulb socket counterclockwise and unlock it.
4. Remove bulb from its socket.
5. Installation is the reverse order of removal.

Front turn signal lamp/— : 12V - 28/8W (amber)

FRONT SIDE MARKER LAMP

1. Remove headlamp. Refer to LT-58, "Removal and Installation".
2. Replacement integral with headlamp housing assembly.
3. Installation is reverse order of removal.

Front side marker lamp : LED

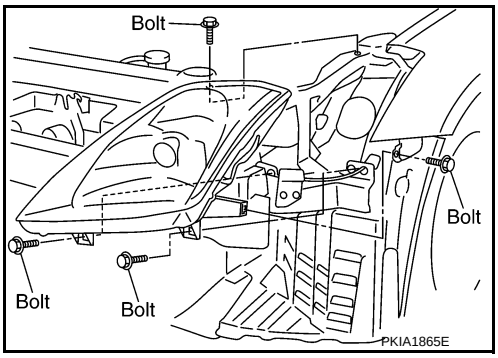
CAUTION:
After installing bulb, be sure to install plastic cap and bulb socket securely to insure watertightness.

Removal and Installation

INFOID:0000000001647335

REMOVAL

1. Open the driver and front passenger window, and then disconnect the battery cable from the negative terminal or remove power fuse.
   CAUTION:
   After the battery cables are disconnected, never open/close the driver and/or front passenger door with the window in the full up position. The automatic window adjusting function will not work and the side roof panel may be damaged.
2. Remove front bumper fascia. Refer to EI-13.
3. Remove headlamp mounting bolts.
4. Pull head lamp toward vehicle front, disconnect connector, and remove headlamp.



INSTALLATION

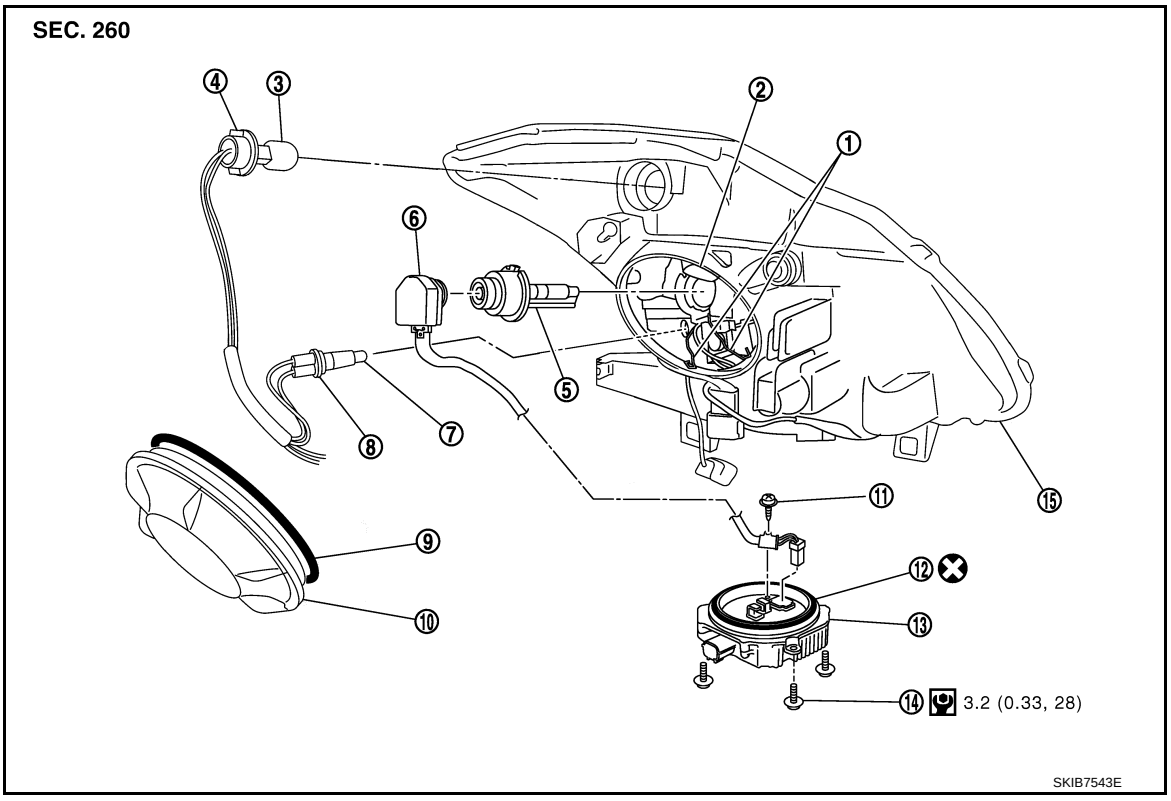
Installation is the reverse order of removal.

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

NOTE:
After installation, perform aiming adjustment. Refer to LT-56, "Aiming Adjustment".

Disassembly and Assembly

INFOID:0000000001647336



1. Retaining spring
2. Xenon bulb socket ground
3. Front turn signal lamp bulb
4. Front turn signal lamp bulb socket
5. Xenon bulb
6. Xenon bulb socket
7. Parking lamp bulb
8. Parking lamp bulb socket
9. Seal packing
10. Plastic cap
11. Ground screw
12. Seal packing
13. HID control unit
14. HID control unit mounting screw
15. Headlamp housing assembly

:N·m (kg-m, in-lb)

: Always replace after every disassembly.

DISASSEMBLY

1. Turn plastic cap counterclockwise, and unlock it.
2. Turn xenon bulb socket counterclockwise, and unlock it.
3. Unlock retaining spring, and remove xenon bulb.
4. Disconnect xenon bulb socket ground.
5. Remove HID control unit mounting screws.
6. Remove ground screw from HID control unit.
7. Disconnect connectors from HID control unit.
8. Pull out xenon bulb socket from head lamp housing assembly.
9. Turn parking lamp bulb socket counterclockwise and unlock it.
10. Remove parking lamp bulb from its socket.

11. Turn front turn signal lamp bulb socket counterclockwise and unlock it.
12. Remove front turn signal lamp bulb from its socket.

ASSEMBLY

Assembly is the reverse order of disassembly.

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

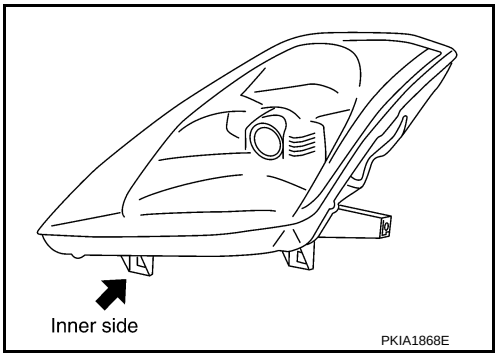
CAUTION:

- **When HID control unit is removed, reinstall it securely and avoid any looseness.**
- **After installing bulb, be sure to install plastic cap and bulb socket securely to insure watertightness**

Serving to Replace Headlamps When Damaged

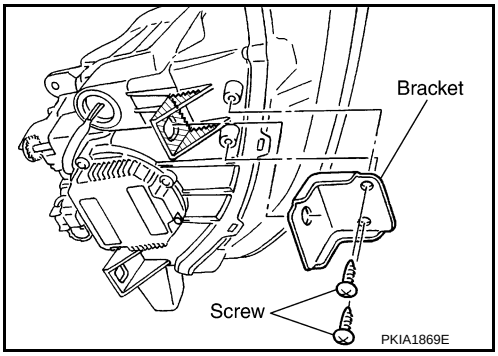
INFOID:0000000001647337

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



INSTALLATION OF HEADLAMP BRACKET

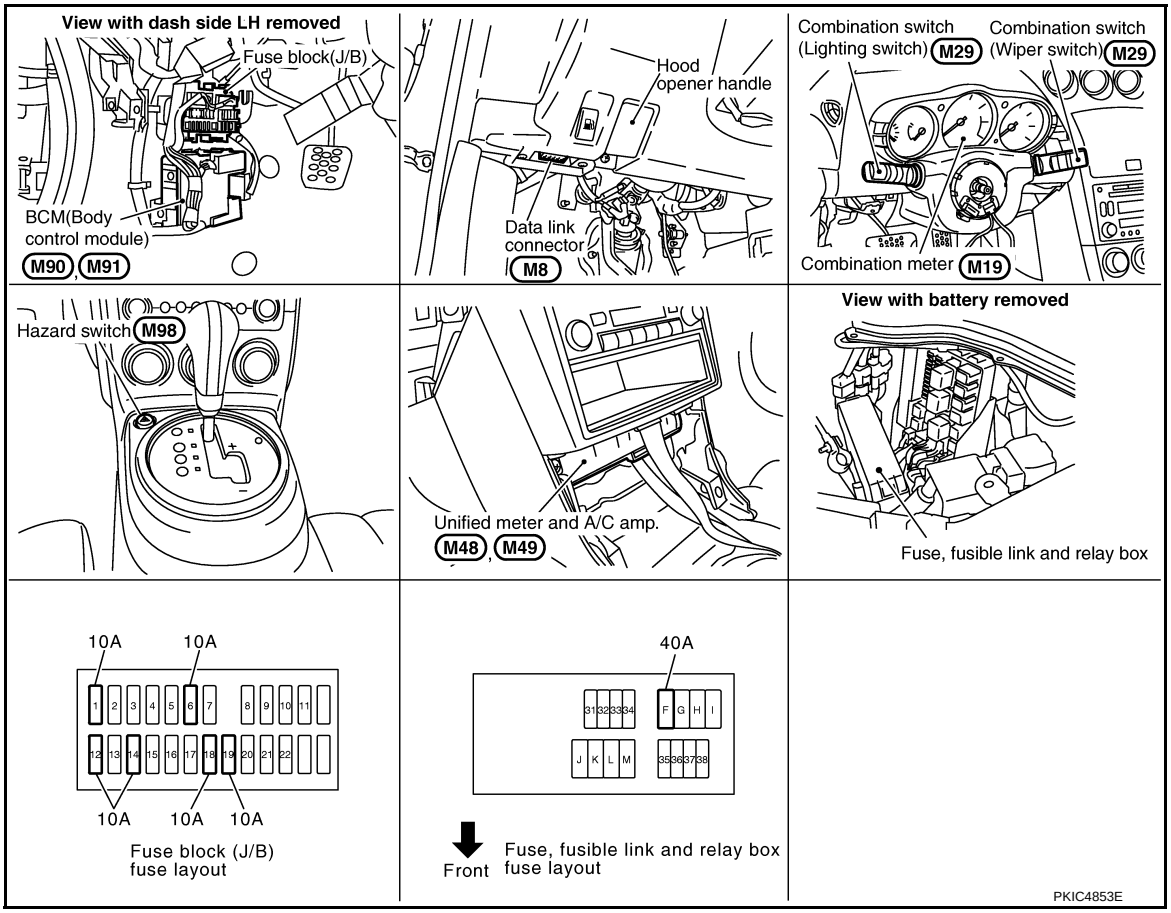
1. Remove headlamps. Refer to LT-58, "Removal and Installation".
2. Cut damaged section of installation part, then shape with sandpaper.
3. Attach each correction bracket to headlamp housing boss with 2 screws.



TURN SIGNAL AND HAZARD WARNING LAMPS

Component Parts and Harness Connector Location

INFOID:0000000001647338



System Description

INFOID:0000000001647339

TURN SIGNAL OPERATION

When the ignition switch is in ON or START position, power is supplied
- through 10A fuse [No.1, located in fuse block (J/B)]
- to BCM (body control module) terminal 38,
- through 10A fuse [No.12, located in fuse block (J/B)]
- to unified meter and A/C amp. terminal 22,
- through 10A fuse [No.14, located in fuse block (J/B)]
- to combination meter terminal 23.

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

LH Turn Signal Lamp

When the turn signal switch is moved to the left position, the BCM receives left turn signal by combination switch reading function (Refer to BCS-4, "System Description"). Power is supplied
- through BCM terminal 45
- to front combination lamp LH terminal 2
- to rear combination lamp LH terminal 2.

Ground is supplied
- to front combination lamp LH terminal 8
- through grounds E17, E43 and B102 (with VDC system, navigation system or telephone)
- through grounds E17, E43 and F152 (without VDC system, navigation system and telephone),
- to rear combination lamp LH terminal 4

• through grounds B5, B6, D105 and T14 (Coupe models)
• through grounds B5, B6 and T14 (Roadster models).

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

RH Turn Signal Lamp

When the turn signal switch is moved to the right position, the BCM receives right turn signal by combination switch reading function (Refer to BCS-4, "System Description"). Power is supplied
• through BCM terminal 46
• to front combination lamp RH terminal 2
• to rear combination lamp RH terminal 2.

Ground is supplied
• to front combination lamp RH terminal 8
• through grounds E17, E43 and B102 (with VDC system, navigation system or telephone)
• through grounds E17, E43 and F152 (without VDC system, navigation system and telephone),
• to rear combination lamp RH terminal 4
• through grounds B5, B6, D105 and T14 (Coupe models)
• through grounds B5, B6 and T14 (Roadster models).

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

HAZARD WARNING LAMP OPERATION

Power is supplied at all times
• through 40A fusible link (letter F, located in fuse, fusible link and relay box)
• to BCM terminal 55,
• through 10A fuse [No. 18, located in fuse block (J/B)]
• to BCM terminal 42,
• through 10A fuse [No. 19, located in fuse block (J/B)]
• to combination meter terminal 24, and
• to unified meter and A/C amp. terminal 21.

Ground is supplied
• to BCM terminals 52
• to unified meter and A/C amp. terminals 29 and 30, and
• to combination meter terminals 10, 11 and 12
• through grounds M30 and M66.

When the hazard switch is depressed, power is supplied
• through BCM terminal 29
• to hazard lamp switch terminal 2.

Ground is supplied
• through hazard lamp switch terminal 1
• to grounds M30 and M66.

The BCM then supplies power
• through BCM terminal 45
• to front combination lamp LH terminal 2
• to rear combination lamp LH terminal 2,
• through BCM terminal 46
• to front combination lamp RH terminal 2
• to rear combination lamp RH terminal 2.

Ground is supplied
• to front combination lamp LH terminal 8, and
• to front combination lamp RH terminal 8
• through grounds E17, E43 and B102 (with VDC system, navigation system or telephone)
• through grounds E17, E43 and F152 (without VDC system, navigation system and telephone),
• to rear combination lamp LH terminal 4, and
• to rear combination lamp RH terminal 4
• through grounds B5, B6, D105 and T14 (Coupe models)
• through grounds B5, B6 and T14 (Roadster models).

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

REMOTE KEYLESS ENTRY SYSTEM OPERATION

Refer to BL-52.

COMBINATION SWITCH READING FUNCTION

Refer to BCS-4, "System Description".

CAN Communication System Description

INFOID:0000000001647340

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

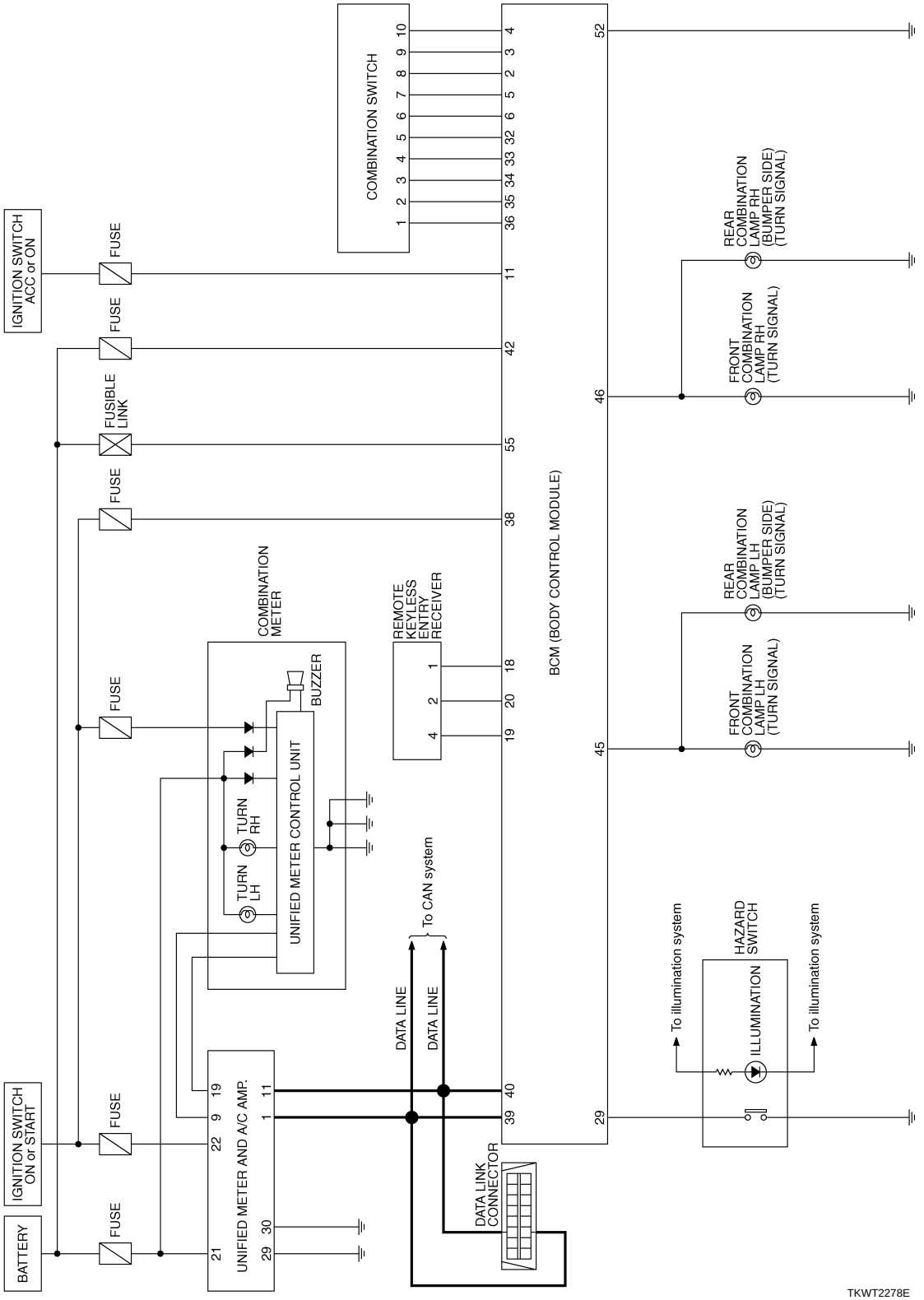
CAN Communication Unit

INFOID:0000000001647341

Refer to LAN-41, "CAN System Specification Chart".

Schematic

INFOID:0000000001647342

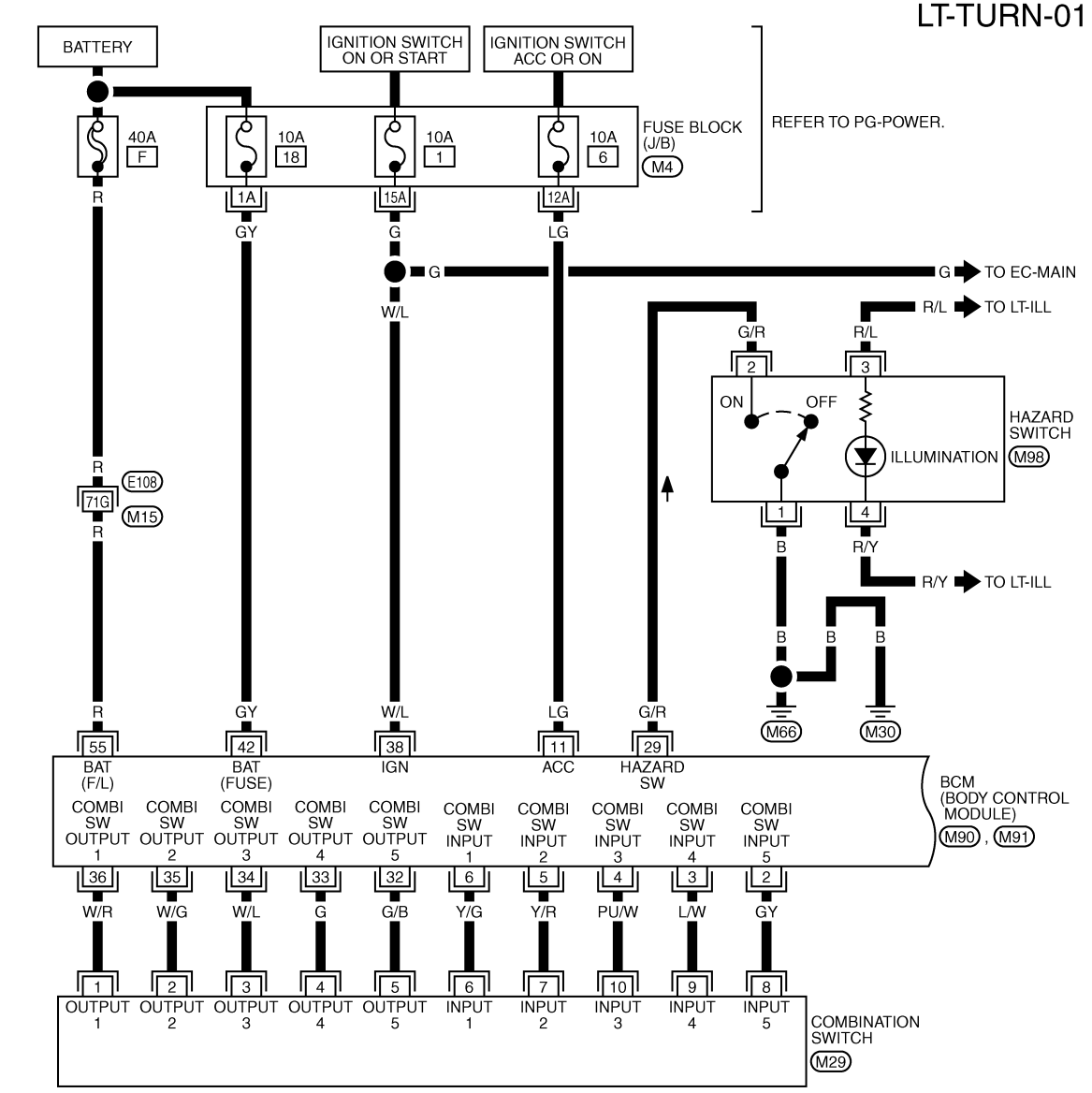


Wiring Diagram - TURN -

INFOID:0000000001647343

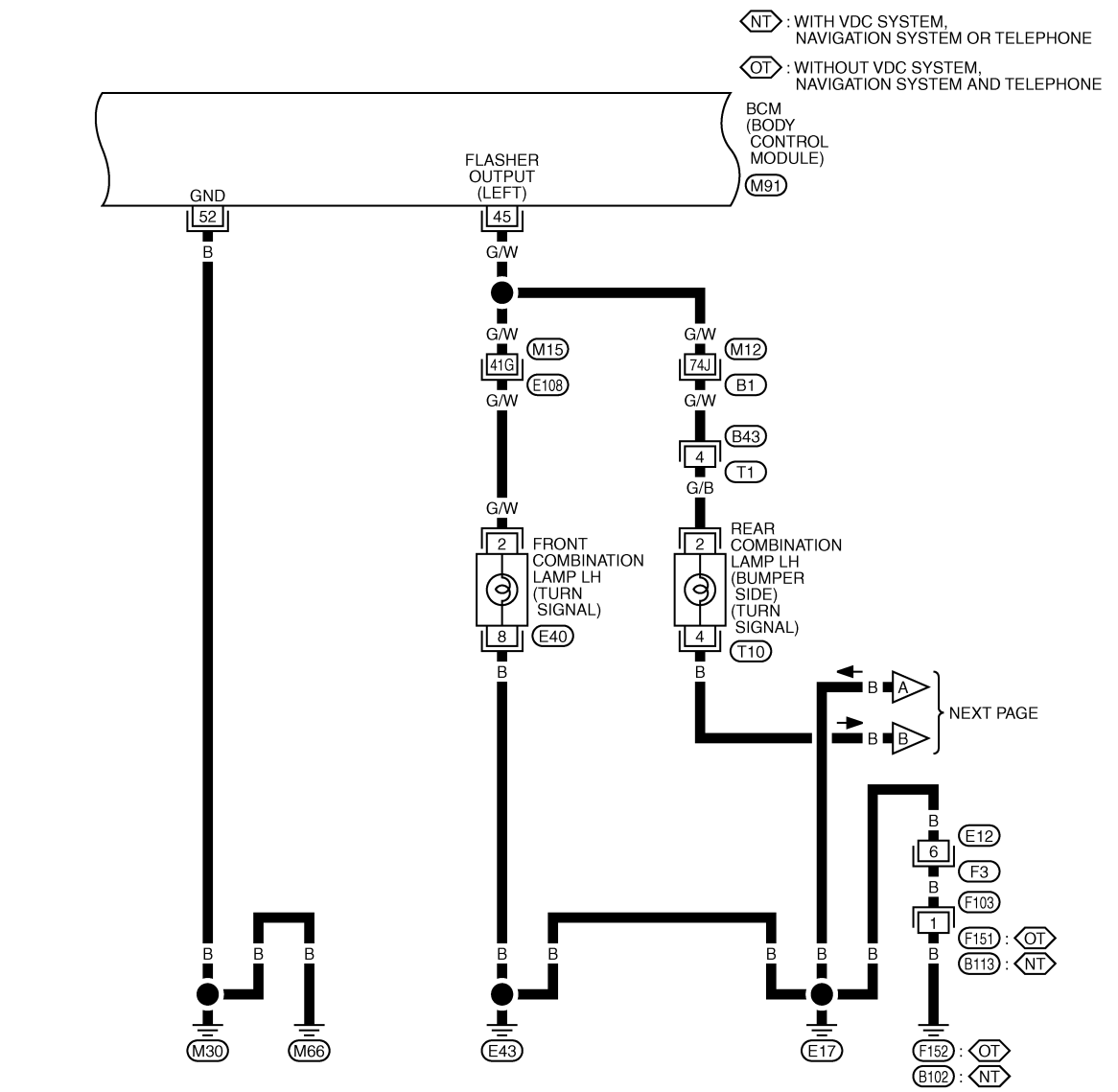
COUPE MODELS

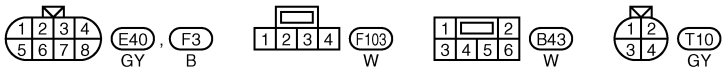
LT-TURN-01



TKWT5751E

LT-TURN-02

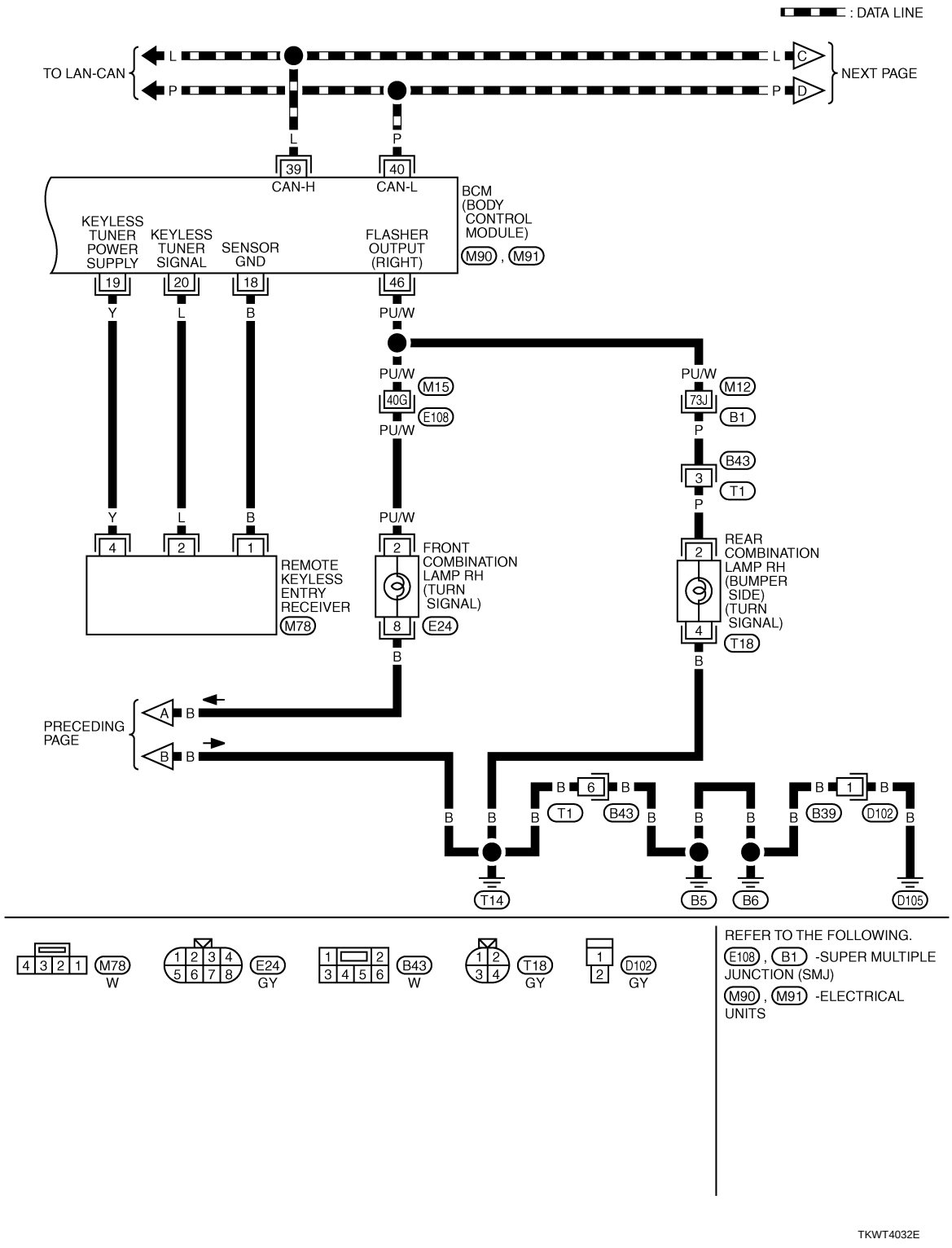




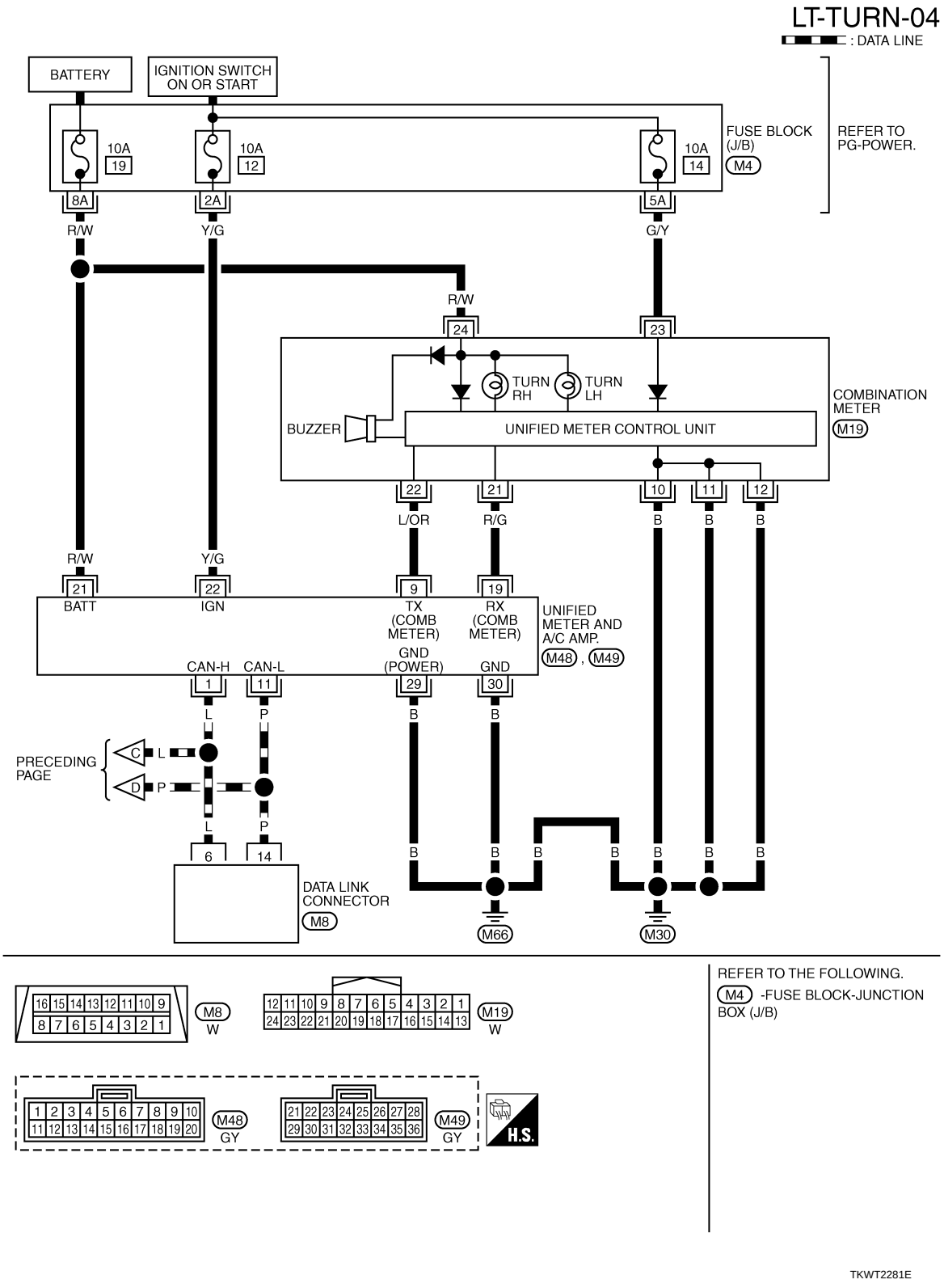
REFER TO THE FOLLOWING.
E108 , B1 -SUPER MULTIPLE JUNCTION (SMJ)
M91 -ELECTRICAL UNITS

TKWT5752E

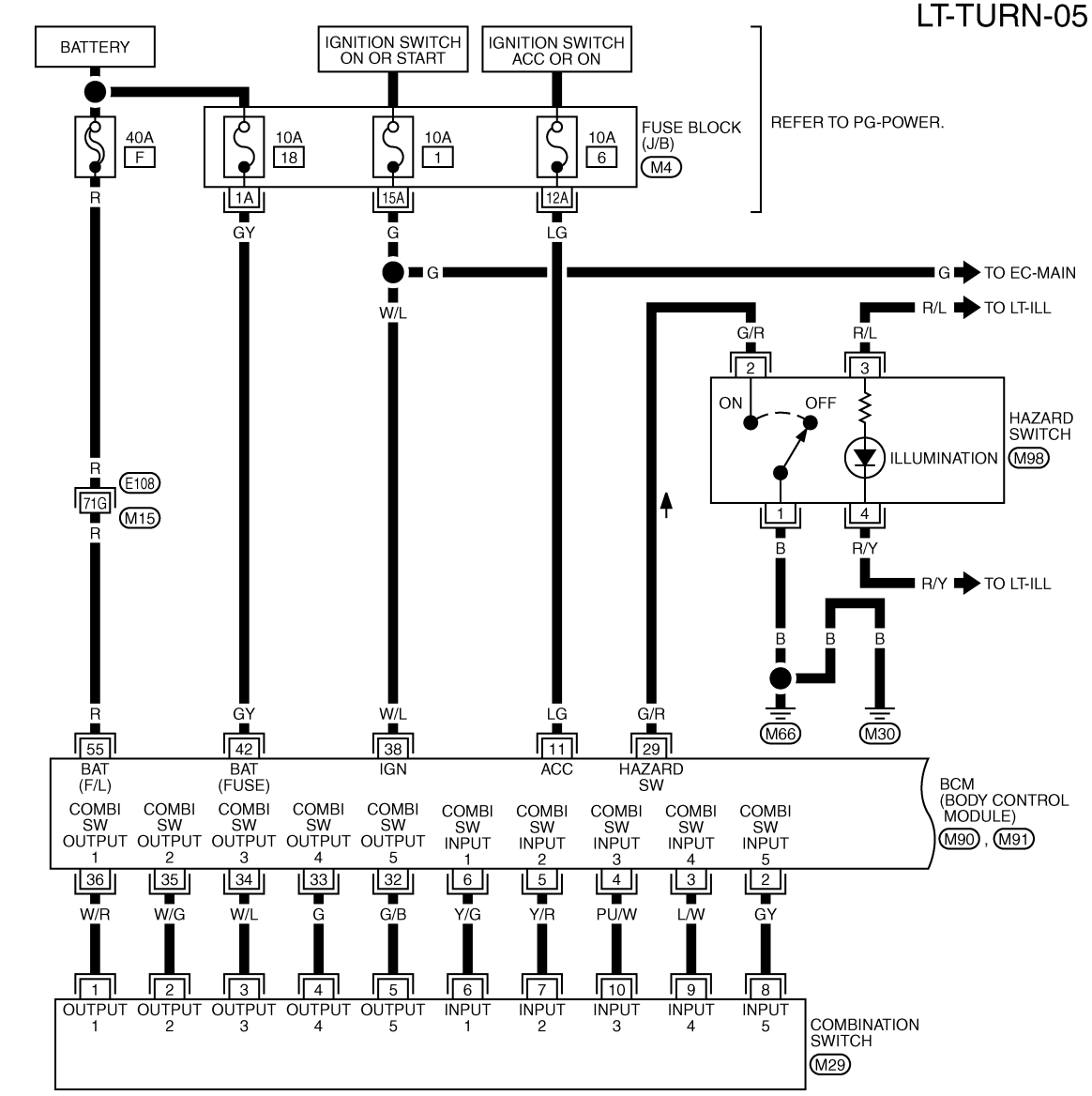
LT-TURN-03



TKWT4032E


LT-TURN-04
: DATA LINE
BATTERY
IGNITION SWITCH ON OR START
FUSE BLOCK (J/B)
M4
REFER TO PG-POWER.
10A 19
10A 12
10A 14
8A
2A
5A
R/W
Y/G
G/Y
R/W
24
23
TURN RH
TURN LH
BUZZER
UNIFIED METER CONTROL UNIT
COMBINATION METER
M19
22
21
10
11
12
L/OR
R/G
B
B
B
R/W
Y/G
21
22
9
19
BATT
IGN
TX (COMB METER)
RX (COMB METER)
UNIFIED METER AND A/C AMP.
M48 , M49
CAN-H
CAN-L
GND (POWER)
GND
1
11
29
30
L
P
B
B
PRECEDING PAGE
C
D
L
P
6
14
DATA LINK CONNECTOR
M8
M66
M30
M8
W
M19
W
M48
GY
M49
GY
H.S.
REFER TO THE FOLLOWING.
M4 -FUSE BLOCK-JUNCTION BOX (J/B)
TKWT2281E

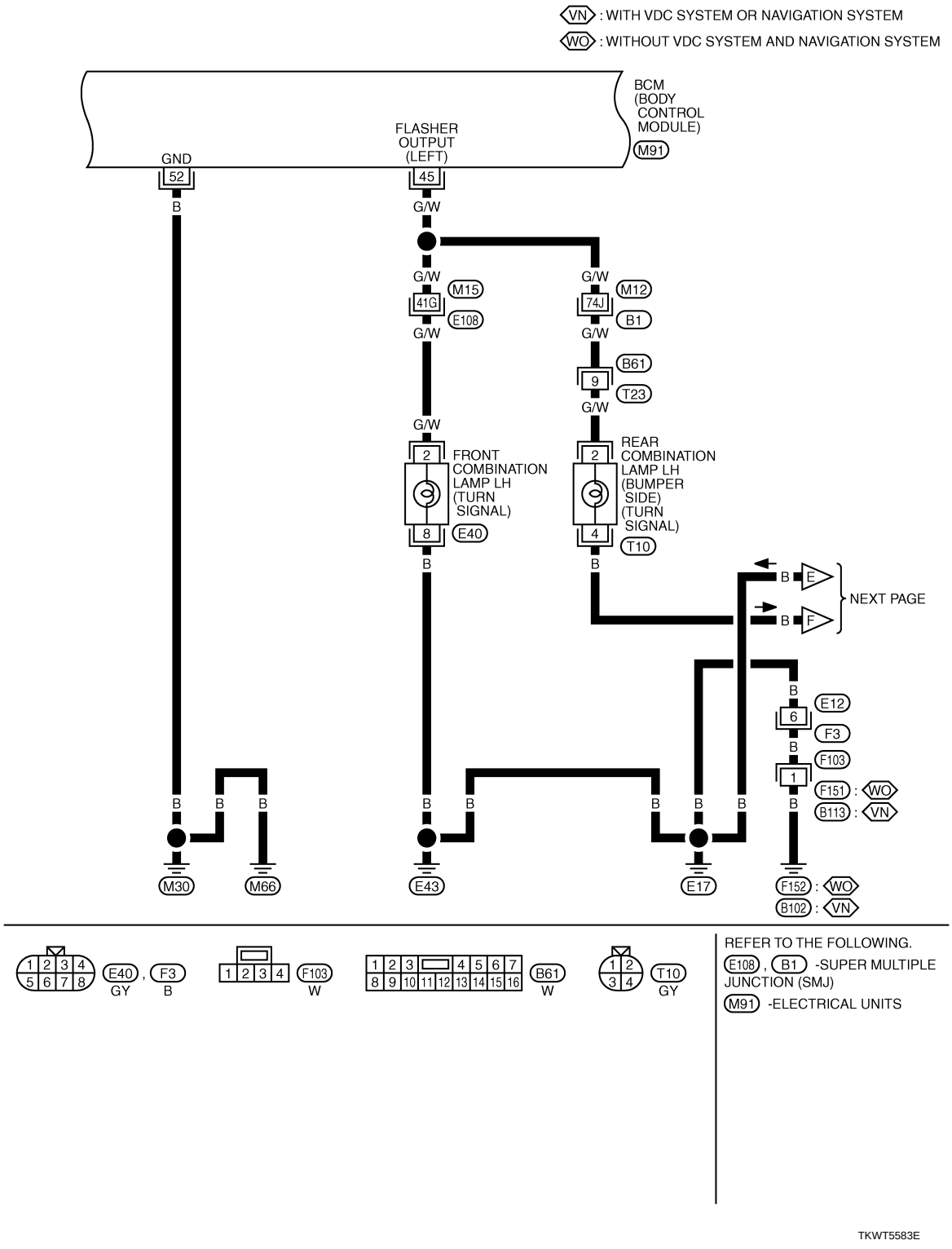
LT-TURN-05



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

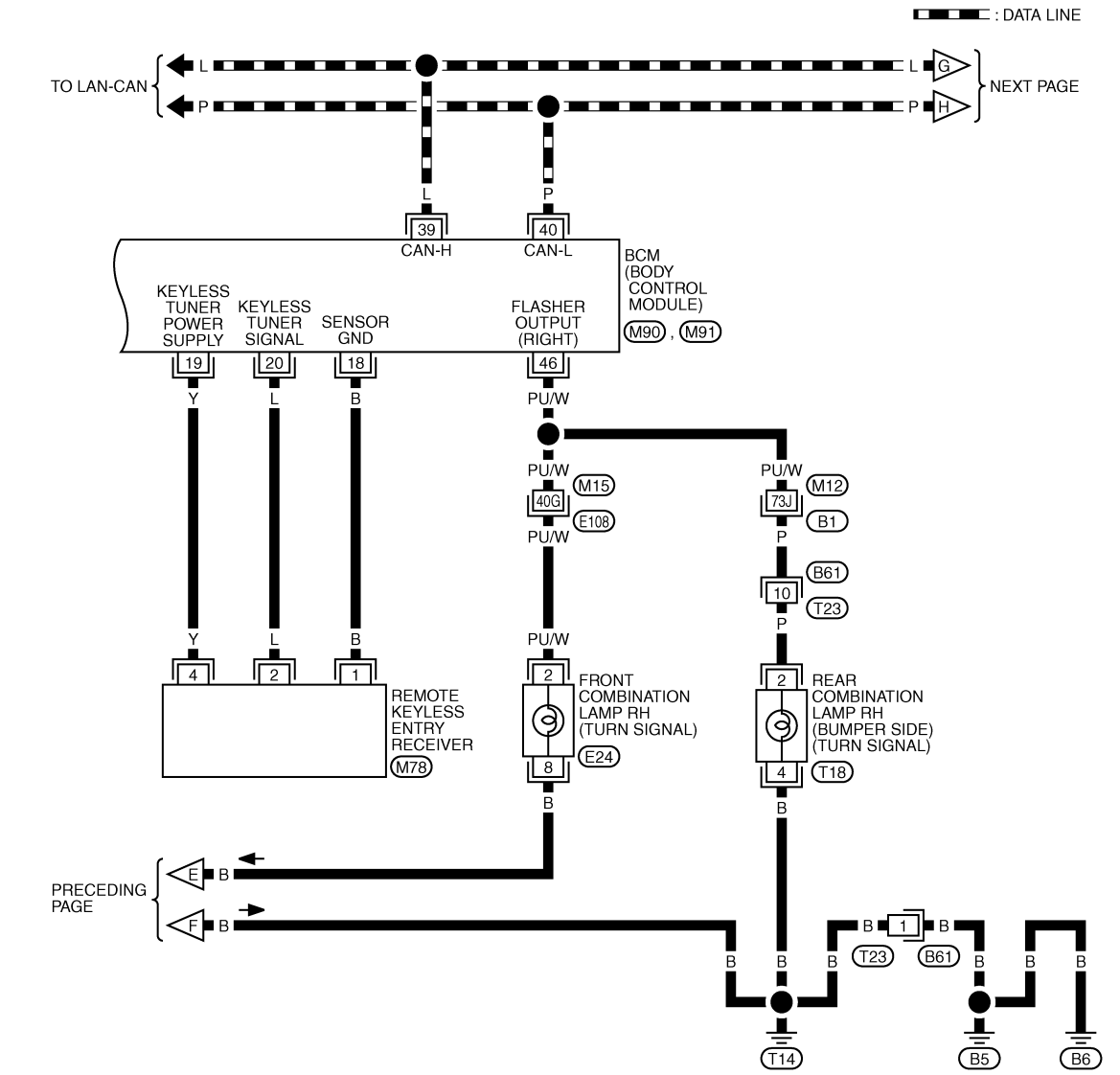
TKWT5753E

LT-TURN-06

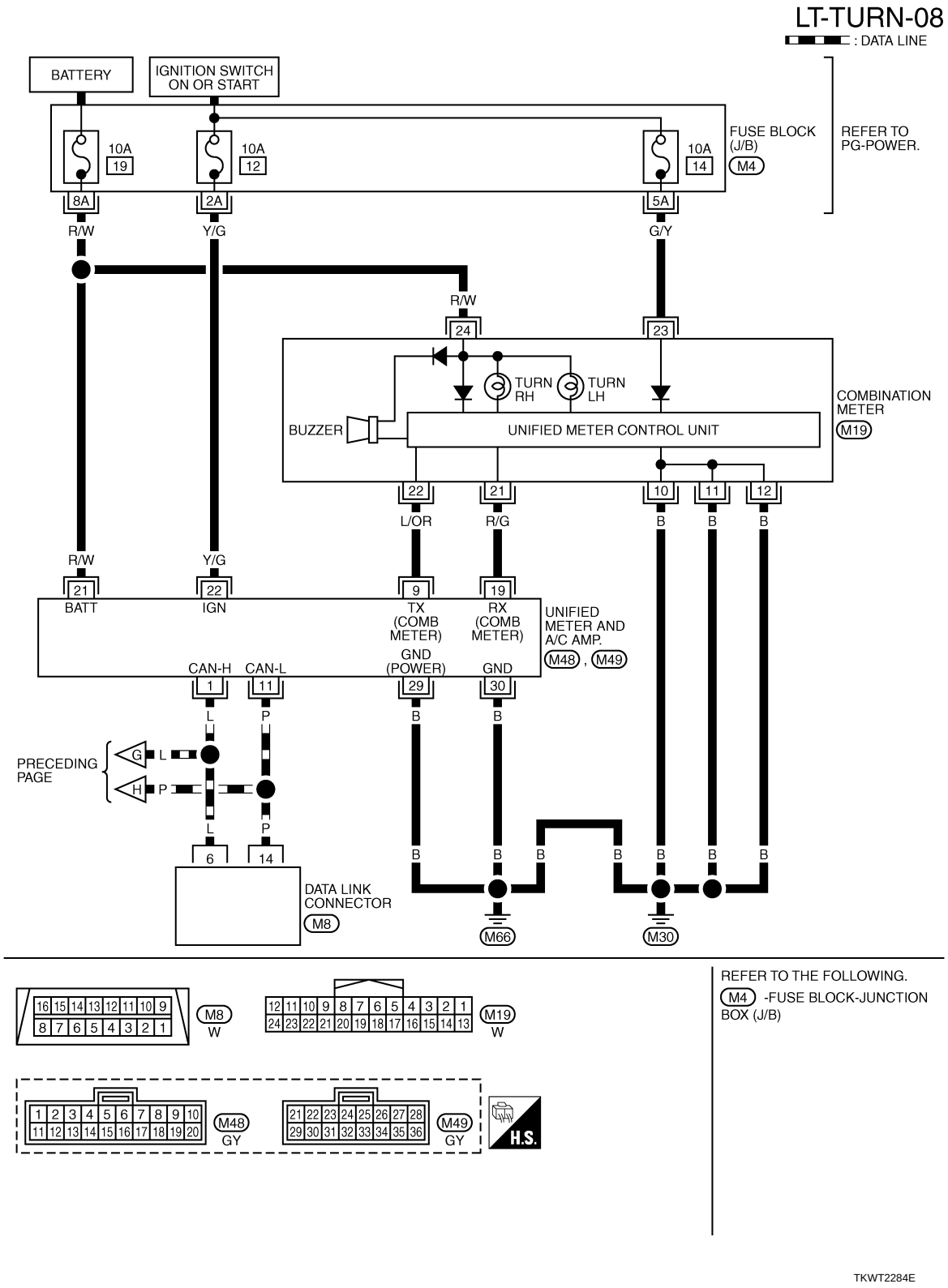


TKWT5583E

LT-TURN-07



TKWT4035E



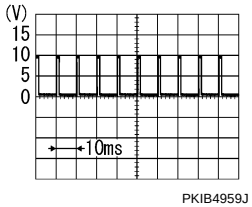
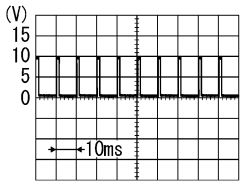
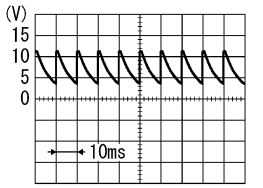
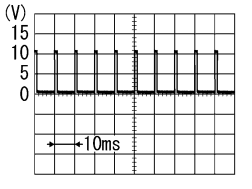
TKWT2284E

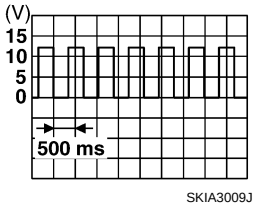
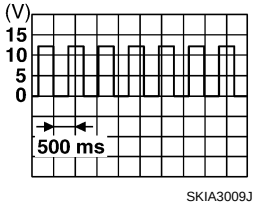
Terminal and Reference Value for BCM

INFOID:0000000001647344

CAUTION:

- **Check combination switch system terminal waveform under the loaded condition with lighting switch, turn signal switch and wiper switch OFF not to be fluctuated by overloaded.**
- **Turn wiper dial position to 4 except when checking waveform or voltage of wiper dial position. Wiper dial position can be confirmed on CONSULT-III. Refer to LT-85, "CONSULT-III Function (BCM)".**

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
2	GY	Combination switch input 5	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	Approx. 0 V
					Turn signal switch to right	 PKIB4959J Approx. 1.0 V
3	L/W	Combination switch input 4	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	Approx. 0 V
					Turn signal switch to left	 PKIB4959J Approx. 1.0 V
11	LG	Ignition switch (ACC)	ACC	—		Battery voltage
29	G/R	Hazard signal	OFF	Hazard switch	OFF	Battery voltage
					ON	Approx. 0 V
36	W/R	Combination switch output 1	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	 PKIB4960J Approx. 7.2 V
					Any of the conditions below • Turn signal switch to right • Turn signal switch to left	 PKIB4958J Approx. 1.2 V
38	W/L	Ignition switch (ON)	ON	—		Battery voltage
39	L	CAN – H	—	—		—
40	P	CAN – L	—	—		—
42	GY	Battery power supply	OFF	—		Battery voltage

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
45	G/W	Turn signal (left)	ON	Combination switch	Turn left ON	 SKIA3009J
46	PU/W	Turn signal (right)	ON	Combination switch	Turn right ON	 SKIA3009J
52	B	Ground	ON	—		Approx. 0V
55	R	Battery power supply	OFF	—		Battery voltage

How to Proceed with Trouble Diagnosis

INFOID:0000000001647345

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-61, "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:0000000001647346

CHECK POWER SUPPLY AND GROUND CIRCUIT

1.CHECK FUSES AND FUSIBLE LINK

Check for blown fuses and fusible link.

UNIT	POWER SOURCE	Fuse and fusible link No.
BCM	Battery	F
		18
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6

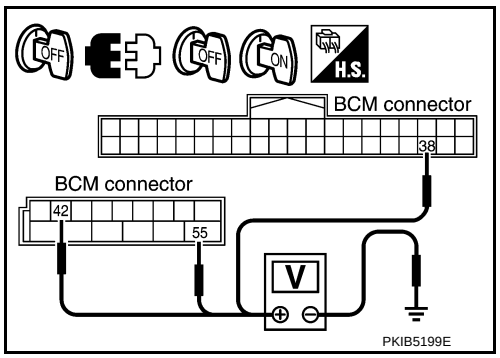
Refer to LT-65, "Wiring Diagram - TURN -".

OK or NG

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

2.CHECK POWER SUPPLY CIRCUIT

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



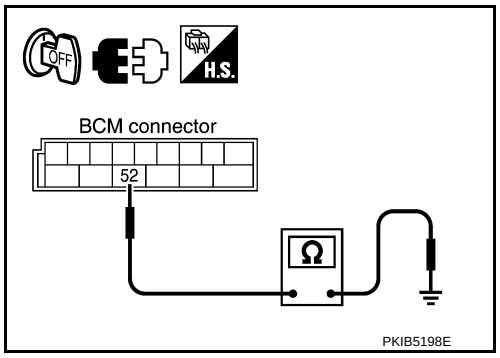
Terminals			Ignition switch position	
(+)		(-)	OFF	ON
BCM connector	Terminal			
M90	38	Ground	Approx. 0 V	Battery voltage
M91	42		Battery voltage	Battery voltage
	55		Battery voltage	Battery voltage

OK or NG

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector terminal and ground.



BCM connector	Terminal	Ground	Continuity
M91	52		Yes

OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

CONSULT-III Function (BCM)

INFOID:0000000001647347

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

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

DATA MONITOR

Display Item List

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

NOTE:
This item is displayed, but cannot be monitored.

ACTIVE TEST

Display Item List

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

Turn Signal Lamp Does Not Operate

INFOID:0000000001647348

1.CHECK BULB

Check bulb standard of each turn signal lamp is correct.

OK or NG

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

2.CHECK COMBINATION SWITCH INPUT SIGNAL

CONSULT-III DATA MONITOR
1. Select "TURN SIGNAL R" and "TURN SIGNAL L" of BCM data monitor item.
2. With operating the lighting switch, check the monitor status.

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

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

CHECK COMBINATION SWITCH
Refer to LT-86, "Combination Switch Inspection".

OK or NG

OK >> GO TO 3.
NG >> Check combination switch (lighting switch). Refer to LT-86, "Combination Switch Inspection".

3.ACTIVE TEST

CONSULT-III ACTIVE TEST
1. Select "FLASHER" of BCM active test item.
2. With operating the test item, check the turn signal lamp operation.

Turn signal lamp should operate.

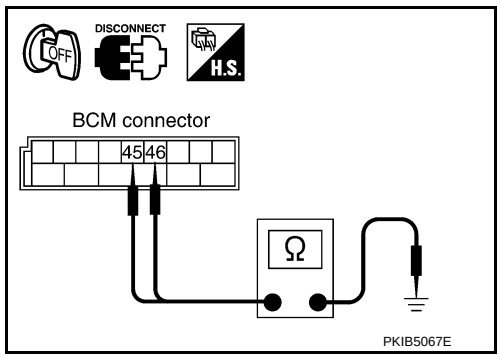
GO TO 4

OK or NG

OK >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM".
NG >> GO TO 4.

4.CHECK SHORT CIRCUIT

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



BCM connector		Terminal		Continuity
RH	M91	46	Ground	No
LH		45		

OK or NG

OK >> Replace BCM if turn signal lamps does not work after setting the connector again. Refer to BCS-15, "Removal and Installation of BCM".
NG >> Repair harness or connector.

Hazard Warning Lamp Does Not Operate But Turn Signal Lamp Operates

INFOID:0000000001647349

1.CHECK BULB

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

OK or NG

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

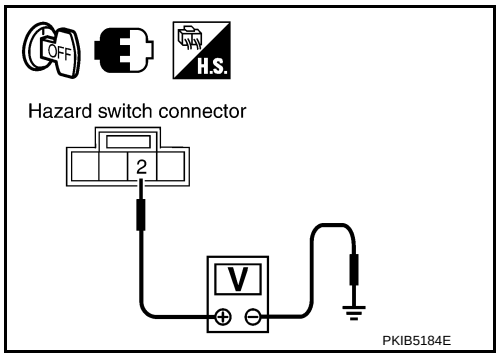
2. CHECK HAZARD SWITCH INPUT SIGNAL

With CONSULT-III
1. Select "HAZARD SW" of BCM data monitor item.
2. With operating the hazard switch, check the monitor status.

When hazard switch is ON : HAZARD SW ON position

Without CONSULT-III
Check voltage between hazard switch harness connector and ground.

Terminal			Condition	Voltage (Approx.)
(+)		(-)		
Hazard switch connector	Terminal			
M98	2	Ground	Hazard switch is ON	0V
			Hazard switch is OFF	5V

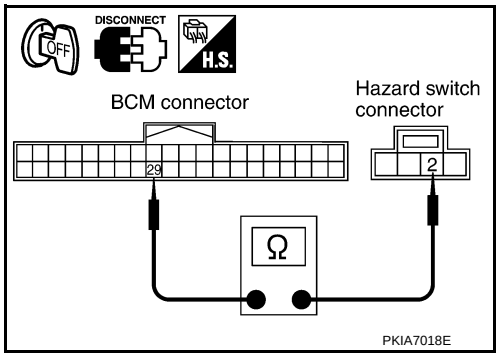


OK or NG
OK >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM".
NG >> GO TO 3.

3. CHECK HAZARD SWITCH CIRCUIT

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

Terminals				Continuity
BCM		Hazard switch		
Connector	Terminal	Connector	Terminal	
M90	29	M98	2	Yes

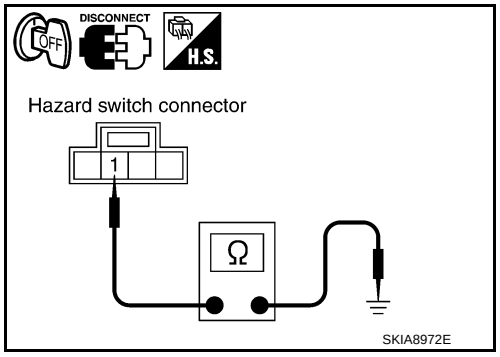


OK or NG
OK >> GO TO 4.
NG >> Repair harness or connector.

4. CHECK GROUND

Check continuity hazard switch harness connector and ground.

Hazard switch connector	Terminal	Ground	Continuity
M98	1		Yes

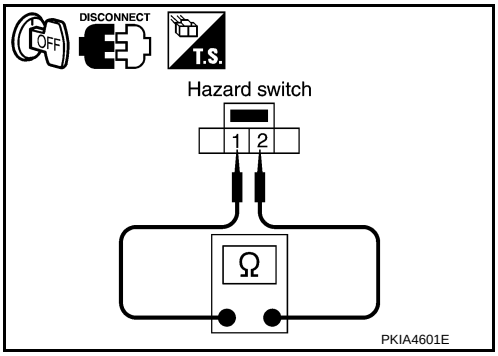


OK or NG
OK >> GO TO 5.
NG >> Repair harness or connector.

5. CHECK HAZARD SWITCH

Check continuity hazard switch.

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



OK or NG

OK >> Replace BCM if turn signal lamps does not work after setting the connector again. Refer to BCS-15, "Removal and Installation of BCM".

NG >> Replace hazard switch.

Turn Signal Indicator Lamp Does Not Operate

INFOID:0000000001647350

1.CHECK BULB

Check bulb of turn signal indicator lamp in combination meter.

OK or NG

OK >> Replace combination meter.

NG >> Replace indicator bulb.

Bulb Replacement (Front Turn Signal Lamp)

INFOID:0000000001647351

Refer to LT-27, "Bulb Replacement".

Bulb Replacement (Rear Turn Signal Lamp)

INFOID:0000000001647352

Refer to LT-117, "Bulb Replacement".

Removal and Installation of Front Turn Signal Lamp

INFOID:0000000001647353

Refer to LT-28, "Removal and Installation".

Removal and Installation of Rear Turn Signal Lamp

INFOID:0000000001647354

Refer to LT-117, "Removal and Installation".

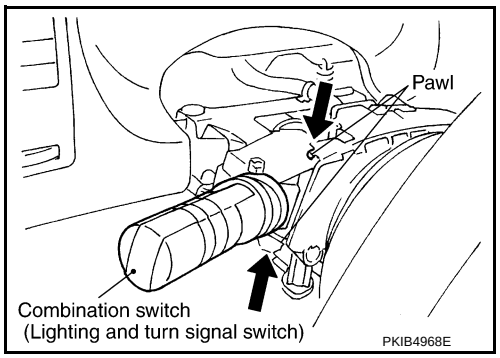
LIGHTING AND TURN SIGNAL SWITCH

Removal and Installation

INFOID:0000000001647355

REMOVAL

1. Remove steering column lower cover. Refer to IP-11.
2. Remove column upper cover and combination meter assembly. Refer to IP-11.
3. While pressing pawls in direction as shown in the figure, pull lighting and turn signal switch toward driver door and disconnect from the base.



INSTALLATION

Installation is the reverse order of removal.

HAZARD SWITCH

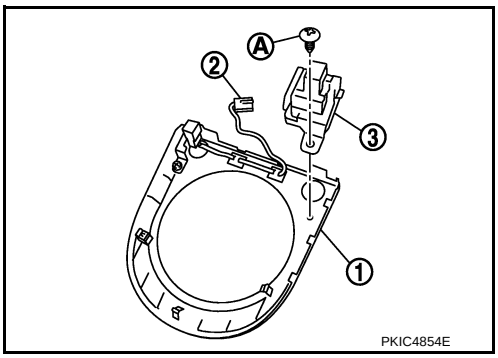
Removal and Installation

INFOID:0000000001647356

HAZARD SWITCH (A/T MODELS)

Removal

1. Remove console finisher (1). Refer to IP-11.
2. Disconnect hazard switch connector (2).
3. Remove screw (A), and remove hazard switch (3).



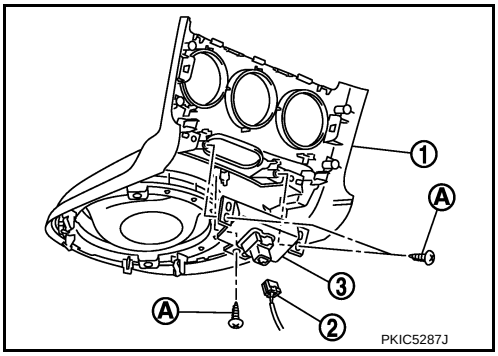
Installation

Installation is the reverse order of removal.

HAZARD SWITCH (M/T MODELS)

Removal

1. Removal console boot (1). Refer to IP-11.
2. Disconnect hazard switch connector (2).
3. Remove screw (A), and remove hazard switch (3).



Installation

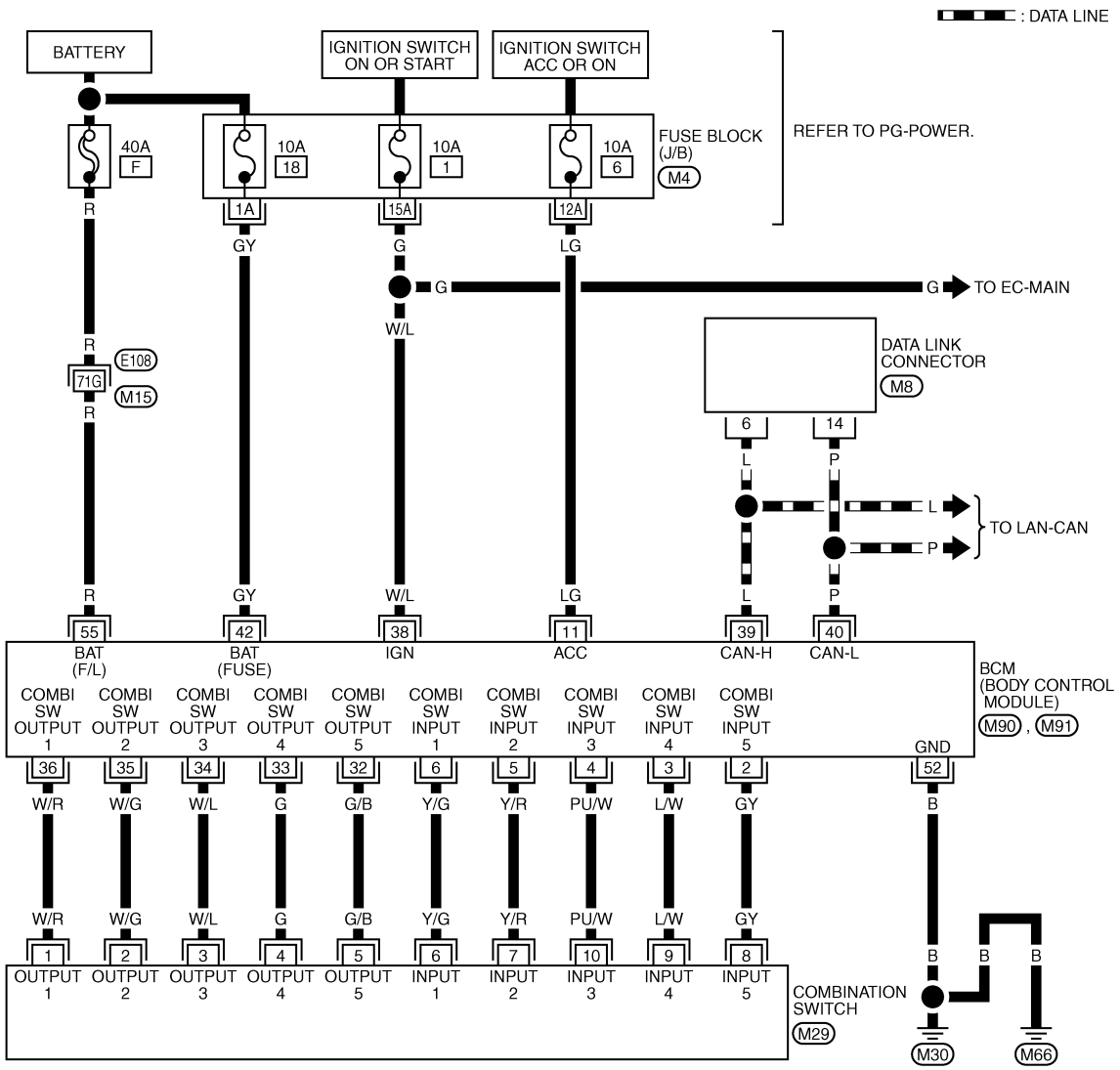
Installation is the reverse order of removal.

COMBINATION SWITCH

Wiring Diagram -COMBSW-

INFOID:0000000001647357

LT-COMBSW-01



TKWT5754E

Combination Switch Reading Function

INFOID:0000000001647358

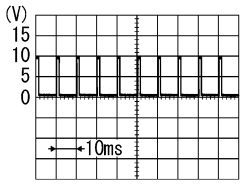
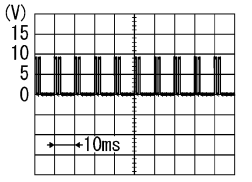
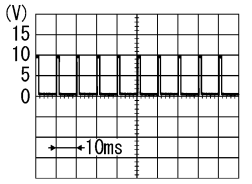
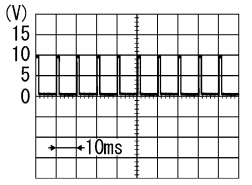
Refer to BCS-4, "System Description".

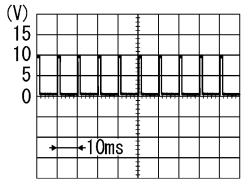
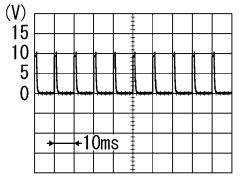
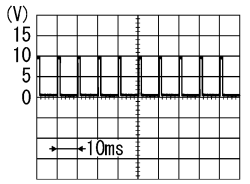
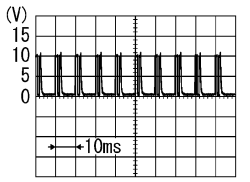
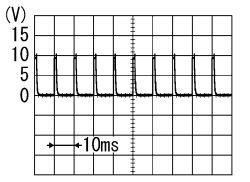
Terminal and Reference Value for BCM

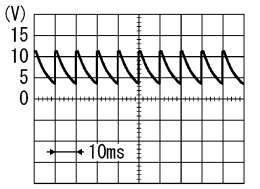
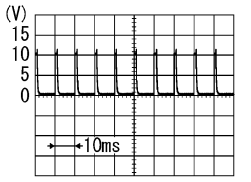
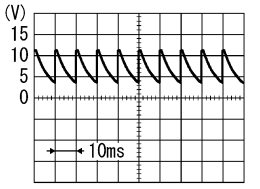
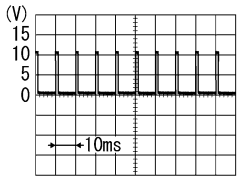
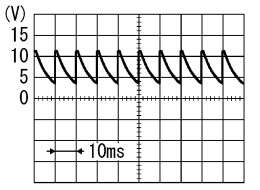
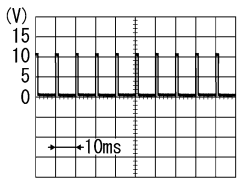
INFOID:0000000001647359

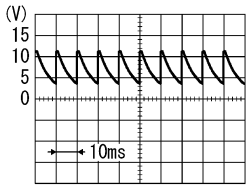
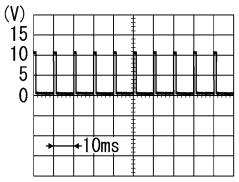
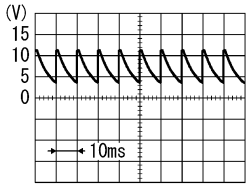
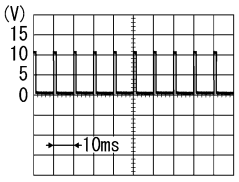
CAUTION:

- **Check combination switch system terminal waveform under the loaded condition with lighting switch, turn signal switch and wiper switch OFF not to be fluctuated by overloaded.**
- **Turn wiper dial position to 4 except when checking waveform or voltage of wiper dial position. Wiper dial position can be confirmed on CONSULT-III. Refer to LT-85, "CONSULT-III Function (BCM)".**

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
2	GY	Combination switch input 5	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	Approx. 0 V
					Any of the conditions below • Lighting switch 1ST • Lighting switch HIGH beam (Operates only HIGH beam switch) • Turn signal switch to right	 PKIB4959J Approx. 1.0 V
					Lighting switch 2ND	 PKIB4953J Approx. 2.0 V
3	L/W	Combination switch input 4	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	Approx. 0 V
					Any of the conditions below • Lighting switch 2ND • Lighting switch PASSING (Operates only PASSING switch) • Turn signal switch to left	 PKIB4959J Approx. 1.0 V
4	PU/W	Combination switch input 3	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	Approx. 0 V
					Any of the conditions below • Front wiper switch MIST • Front wiper switch INT • Front wiper switch LO	 PKIB4959J Approx. 1.0 V

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
5	Y/R	Combination switch input 2	ON	Lighting, turn, wiper switch	OFF (Wiper intermittent dial position 4)	Approx. 0 V
					Any of the conditions below • Front washer switch • Rear washer switch • Wiper intermittent dial position 1 • Wiper intermittent dial position 5 • Wiper intermittent dial position 6	 PKIB4959J Approx. 1.0 V
					Rear wiper switch ON (Wiper intermittent dial position 4)	 PKIB4955J Approx. 0.8 v
6	Y/G	Combination switch input 1	ON	Lighting, turn, wiper switch	OFF (Wiper intermittent dial position 4)	Approx. 0 V
					Any of the conditions below • Front wiper switch HI • Rear wiper switch INT • Wiper intermittent dial position 3	 PKIB4959J Approx. 1.0 V
					Any of the conditions below • Wiper intermittent dial position 1 • Wiper intermittent dial position 2	 PKIB4952J Approx. 1.7 V
					Any of the conditions below • Wiper intermittent dial position 6 • Wiper intermittent dial position 7	 PKIB4955J Approx. 0.8 V
11	LG	Ignition switch (ACC)	ACC	—		Battery voltage

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
32	G/B	Combination switch output 5	ON	Lighting, turn, wiper switch	OFF (Wiper intermittent dial position 4)	 PKIB4960J Approx. 7.2 V
					Any of the conditions below • Wiper intermittent dial position 1 • Wiper intermittent dial position 2 • Wiper intermittent dial position 6 • Wiper intermittent dial position 7	 PKIB4956J Approx. 1.0 V
33	G	Combination switch output 4	ON	Lighting, turn, wiper switch	OFF (Wiper intermittent dial position 4)	 PKIB4960J Approx. 7.2 V
					Any of the conditions below • Lighting switch 1ST (The same result with lighting switch 2ND) • Rear wiper switch INT • Wiper intermittent dial position 1 • Wiper intermittent dial position 5 • Wiper intermittent dial position 6	 PKIB4958J Approx. 1.2 V
34	W/L	Combination switch output 3	ON	Lighting, turn, wiper switch	OFF (Wiper intermittent dial position 4)	 PKIB4960J Approx. 7.2 V
					Any of the conditions below • Lighting switch 2ND • Lighting switch HI beam (Operates only HI beam switch) • Rear washer switch • Wiper intermittent dial position 1 • Wiper intermittent dial position 2 • Wiper intermittent dial position 3	 PKIB4958J Approx. 1.2 V

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
35	W/G	Combination switch output 2	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	 PKIB4960J Approx. 7.2 V
					Any of the conditions below • Lighting switch 2ND • Lighting switch PASSING (Operates only PASSING switch) • Front wiper switch INT • Front wiper switch HI	 PKIB4958J Approx. 1.2 V
36	W/R	Combination switch output 1	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	 PKIB4960J Approx. 7.2 V
					Any of the conditions below • Turn signal switch to right • Turn signal switch to left • Front wiper switch MIST • Front wiper switch LO • Front washer switch	 PKIB4958J Approx. 1.2 V
38	W/L	Ignition switch (ON)	ON	—		Battery voltage
39	L	CAN – H	—	—		—
40	P	CAN – L	—	—		—
42	GY	Battery power supply	OFF	—		Battery voltage
52	B	Ground	ON	—		Approx. 0V
55	R	Battery power supply	OFF	—		Battery voltage

CONSULT-III Function (BCM)

INFOID:0000000001647360

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

BCM diagnosis part	Diagnosis mode	Description
COMB SW	DATA MONITOR	Displays BCM input data in real time.

DATA MONITOR

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 status (headlamp switch 2: ON/Others: OFF) of headlamp switch 1 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 or 2ND position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
PASSING SW	"ON/OFF"	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW NOTE	"ON/OFF"	—
FR WIPER HI	"ON/OFF"	Displays "Front Wiper HI (ON)/Other (OFF)" status, determined from wiper switch signal.
FR WIPER LOW	"ON/OFF"	Displays "Front Wiper LOW (ON)/Other (OFF)" status, determined from wiper switch signal.
FR WIPER INT	"ON/OFF"	Displays "Front Wiper INT (ON)/Other (OFF)" status, determined from wiper switch signal.
FR WASHER SW	"ON/OFF"	Displays "Front Washer Switch (ON)/Other (OFF)" status, determined from wiper switch signal.
INT VOLUME	[1 - 7]	Displays intermittent operation knob setting (1 - 7), determined from wiper switch signal.
RR WIPER ON	"ON/OFF"	Displays "rear Wiper (ON)/Other (OFF)" status as judged from wiper switch signal.
RR WIPER INT	"ON/OFF"	Displays "rear Wiper INT (ON)/Other (OFF)" status as judged from wiper switch signal.
RR WASHER SW	"ON/OFF"	Displays "rear Washer Switch (ON)/Other (OFF)" status as judged from wiper switch signal.

NOTE:

This item is displayed, but cannot be monitored.

Combination Switch Inspection

INFOID:0000000001647361

1.SYSTEM CHECK

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

System 1	System 2	System 3	System 4	System 5
—	FR WASHER	FR WIPER LO	TURN LH	TURN RH
FR WIPER HI	—	FR WIPER INT	PASSING	HEAD LAMP 1
INT VOLUME 1	RR WASHER	—	HEAD LAMP 2	HI BEAM
RR WIPER INT	INT VOLUME 3	—	—	LIGHT SW 1ST
INT VOLUME 2	RR WIPER ON	—	—	—

>> Check the system to which malfunctioning switch belongs, and GO TO 2.

2.SYSTEM CHECK

With CONSULT-III

1. Select "COMBI SW" of BCM data monitor item.
2. Confirm that other switches in malfunctioning system operate normally.
   Example: When the HI BEAM switch is malfunctioning, confirm that "TURN RH", "HEAD LAMP 1" and "LIGHT SW 1 ST" in System 5, to which the HI BEAM switch belongs, turn ON-OFF normally.

Without CONSULT-III

Operating combination switch, and confirm that other switches in malfunctioning system operate normally.
Example: When the HI BEAM switch is malfunctioning, confirm that "TURN RH", "HEAD LAMP 1" and "LIGHT SW 1 ST" in System 5, to which HI BEAM switch belongs, turn ON-OFF normally.

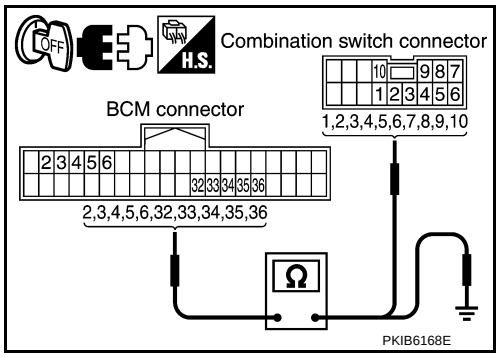
Check results

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

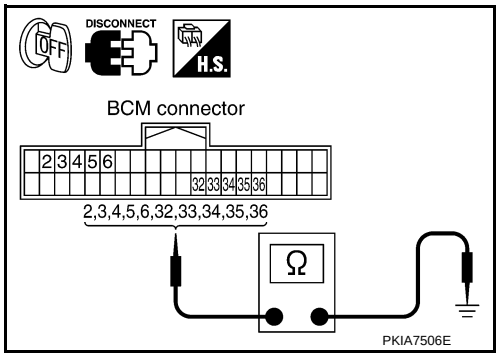
1. Turn ignition switch OFF.
2. Disconnect BCM and combination switch connectors.
3. Check for continuity between BCM harness connector of the suspect system and the corresponding combination switch harness connector.

Suspect system	BCM			Combination switch		Continuity
	Connector	Terminal		Connector	Terminal	
1	M90	Input 1	6	M29	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 BCM harness connector in suspect malfunctioning system and ground.

Suspect system	BCM				Continuity
	Connector	Terminal			
1	M90	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		

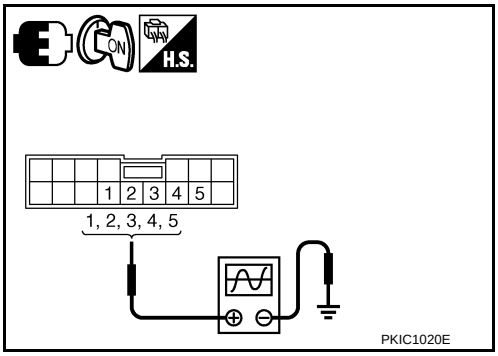


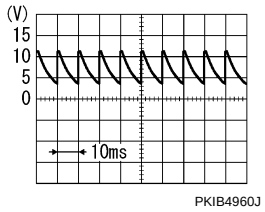
OK or NG

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

4.BCM OUTPUT TERMINAL INSPECTION

1. Connect BCM and combination switch connectors.
2. Set wiper intermittent dial position 4.
3. Turn ignition switch ON.
4. Check BCM output terminal voltage waveform of suspect malfunctioning system.



Suspect system	Terminals (+) Combination switch connector	Terminals (+) Terminal	Terminals (-)	Reference value (Approx.)
1	M29	1	Ground	
2		2		
3		3		
4		4		
5		5		

7.2 V

OK or NG

OK >> Open circuit in combination switch, GO TO 5.
NG >> Replace BCM. Refer to BCS-15, "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

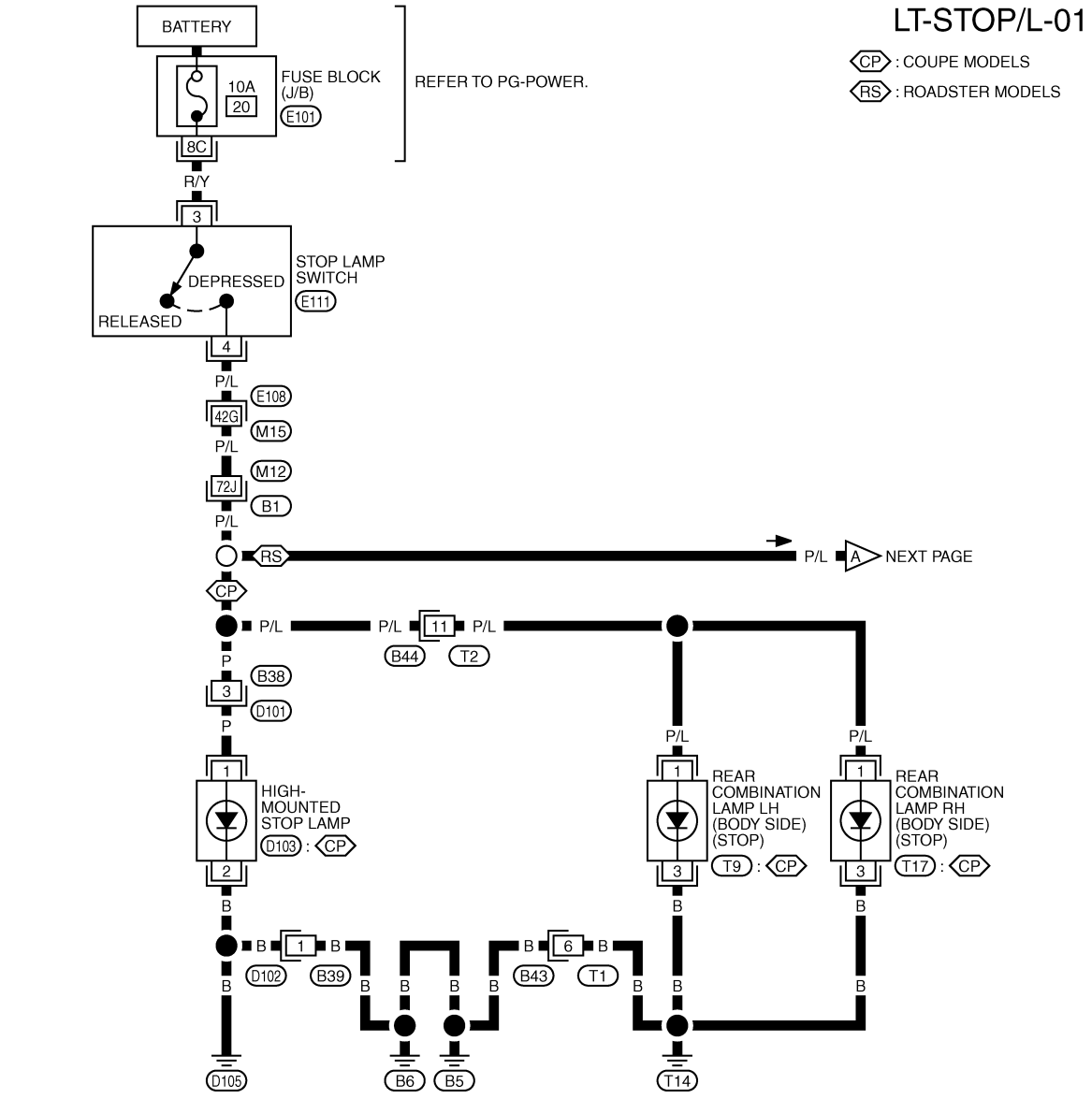
INFOID:0000000001647362

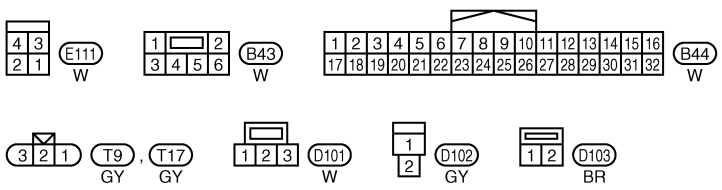
Refer to LT-79.

STOP LAMP

Wiring Diagram - STOP/L -

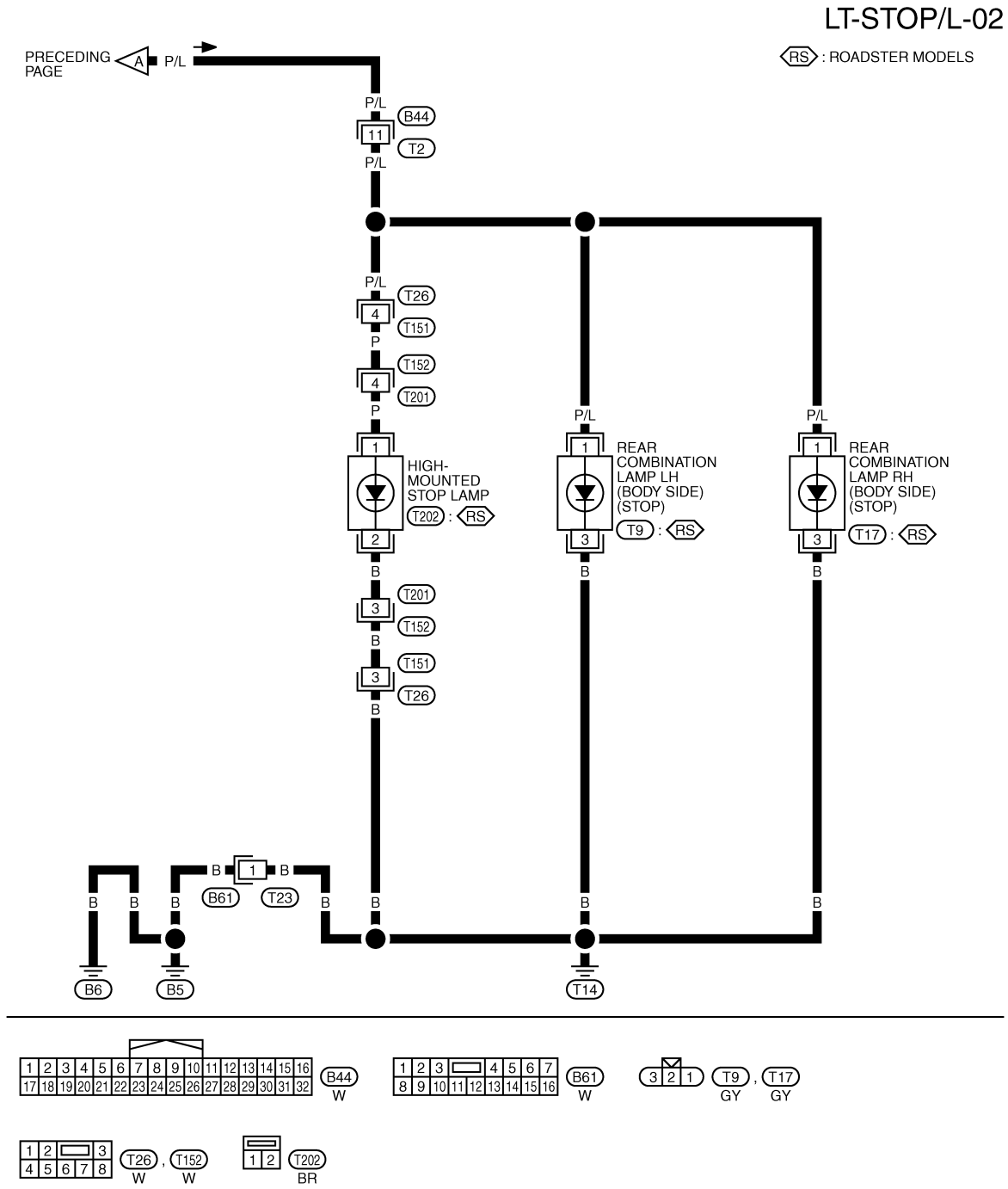
INFOID:0000000001647363





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

TKWT5755E



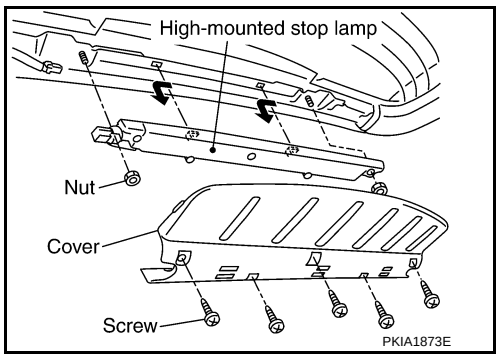
TKWT4038E

High-Mounted Stop Lamp (Coupe Models)

INFOID:0000000001647364

BULB REPLACEMENT, REMOVAL AND INSTALLATION

1. Remove back door finisher upper. Refer to EI-44, "Removal and Installation (for Coupe Models)".
2. Disconnect high-mounted stop lamp connector.
3. Remove nuts and remove high-mounted stop lamp with cover from back door. Be sure to pull toward the arrow in the figure.
4. Remove screws and remove high-mounted stop lamp assembly from cover.
5. Installation is the reverse order of removal.



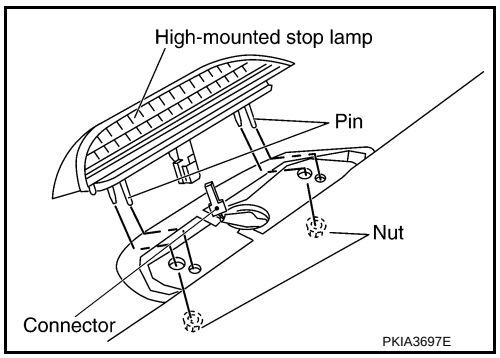
High-mounted stop lamp : LED

High-Mounted Stop Lamp (Roadster Models)

INFOID:0000000001647365

BULB REPLACEMENT, REMOVAL AND INSTALLATION

1. Turn ignition switch ON, and turn soft-top OPEN/CLOSE switch ON.
2. When the storage lid is fully opened, soft-top OPEN/CLOSE switch to OFF.
3. Remove battery negative cable.
4. Disconnect high-mounted stop lamp connector.
5. Remove high-mounted stop lamp.
6. Remove high-mounted stop lamp assembly from storage lid.
7. Installation is the reverse order of removal.



High-mounted stop lamp : LED

Stop Lamp

INFOID:0000000001647366

BULB REPLACEMENT

Refer to LT-117, "Bulb Replacement".

REMOVAL AND INSTALLATION

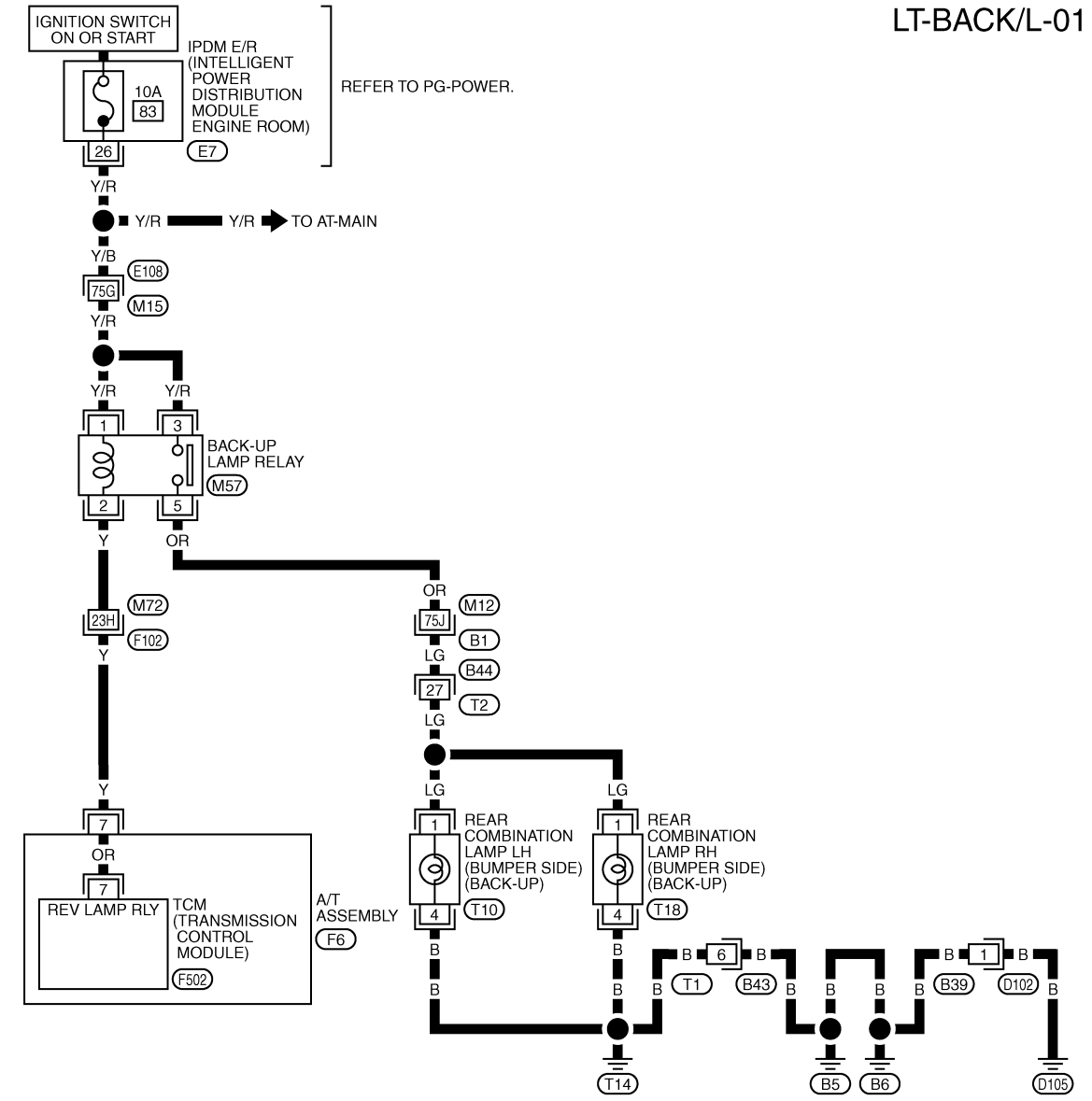
Refer to LT-117, "Removal and Installation".

BACK-UP LAMP

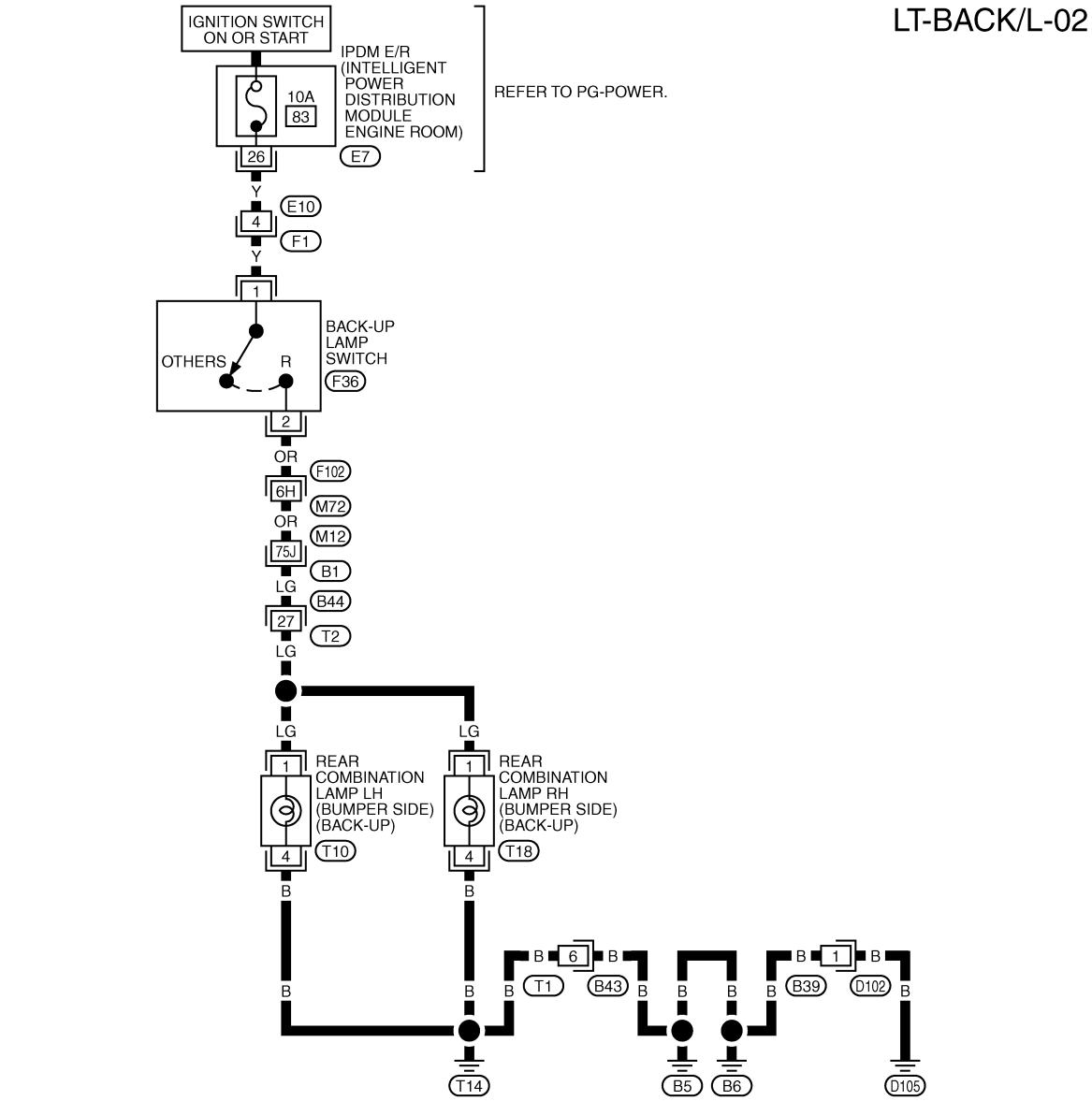
Wiring Diagram - BACK/L -

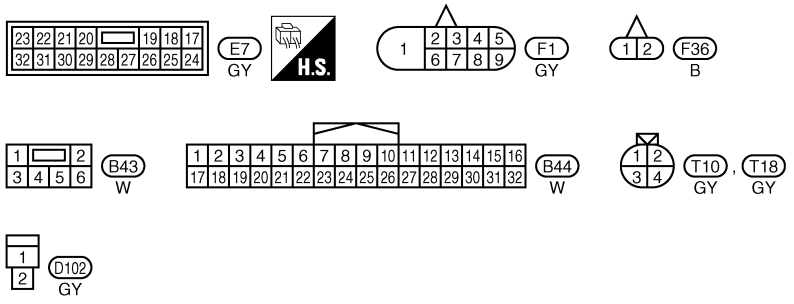
INFOID:0000000001647367

COUPE MODELS (A/T)



LT-BACK/L-02

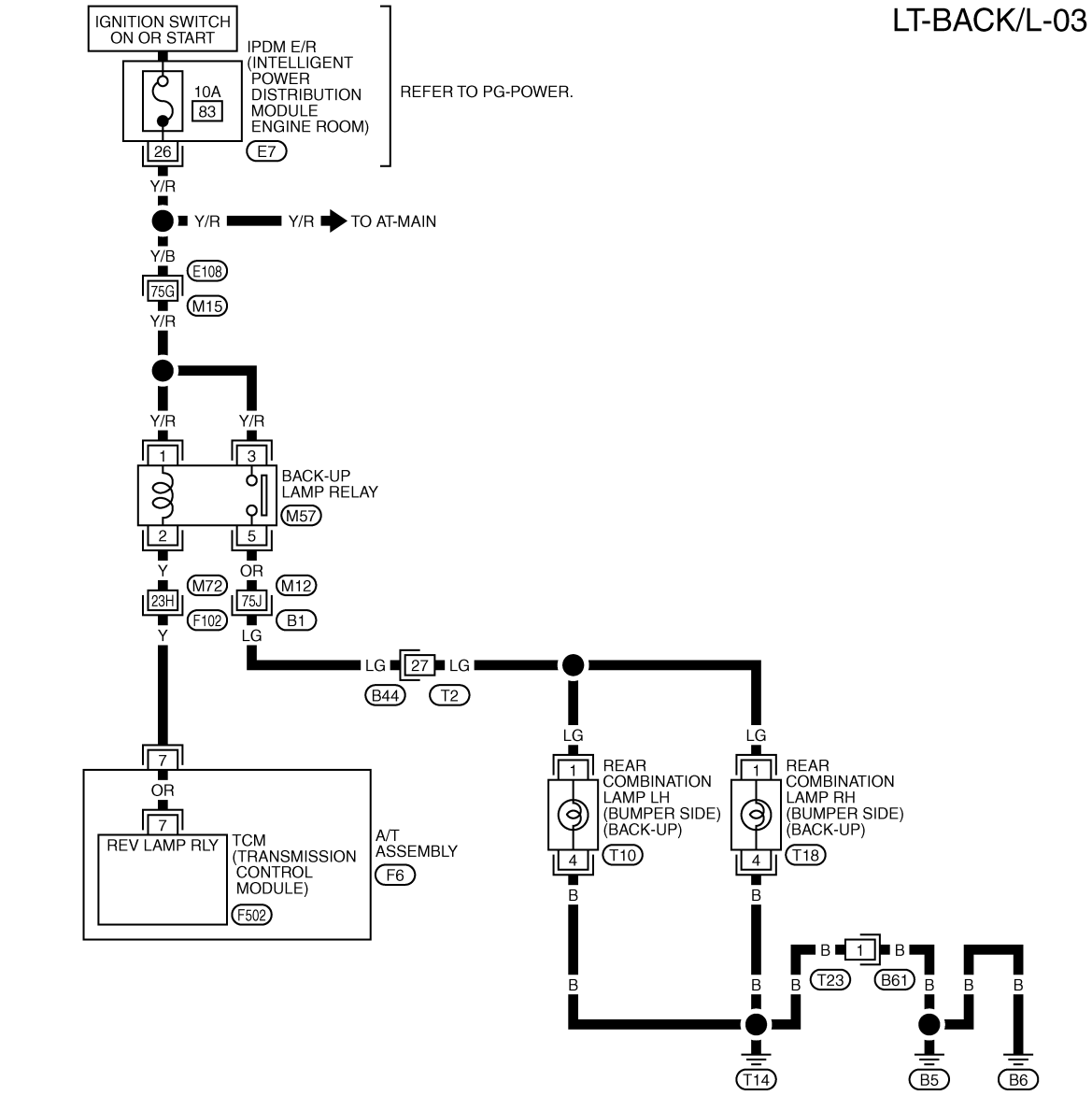




REFER TO THE FOLLOWING.
F102 , B1 -SUPER MULTIPLE JUNCTION (SMJ)

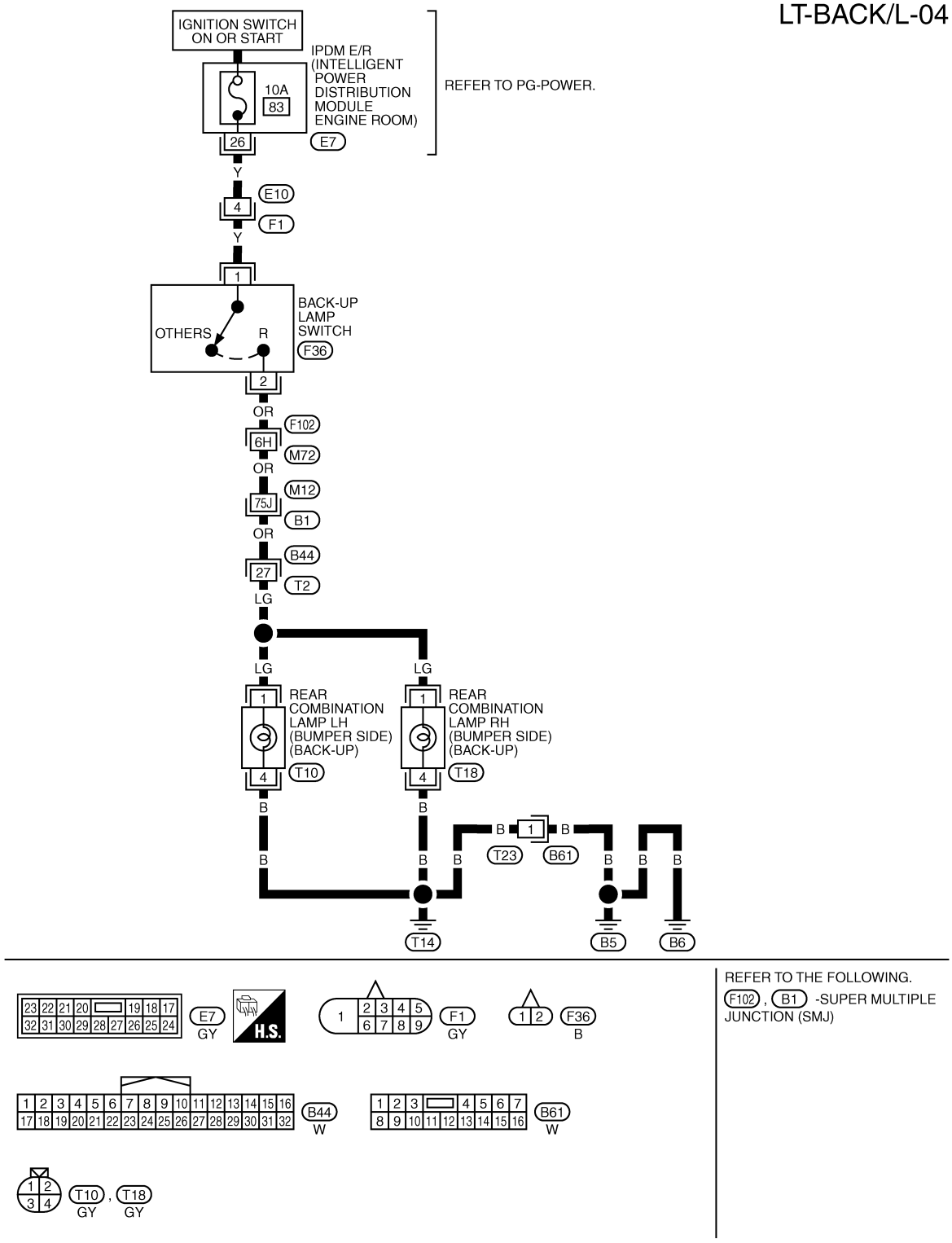
TKWT5757E

LT-BACK/L-03



TKWT5758E

LT-BACK/L-04



TKWT5759E

Bulb Replacement

INFOID:0000000001647368

Refer to LT-117, "Bulb Replacement".

Removal and Installation

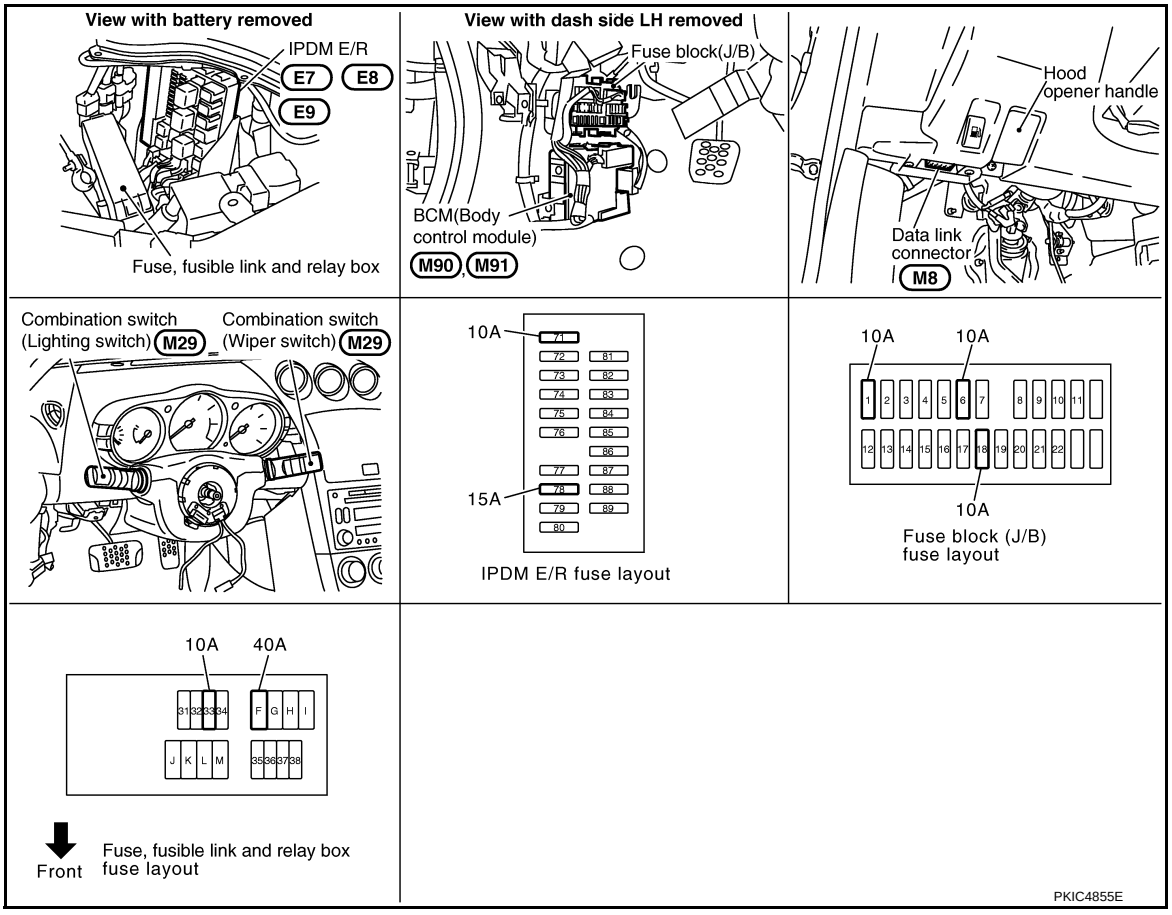
INFOID:0000000001647369

Refer to LT-117, "Removal and Installation".

PARKING, LICENSE PLATE AND TAIL LAMPS

Component Parts and Harness Connector Location

INFOID:0000000001647370



System Description

INFOID:0000000001647371

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

NOTE:

Daytime light relay*: Canada models

OUTLINE

Power is supplied at all times

- through 10A fuse (No.71, located in IPDM E/R)
- to tail lamp relay, located in IPDM E/R, and
- to CPU located in IPDM E/R,
- through 15A fuse (No.78, located in IPDM E/R)
- to CPU located in IPDM E/R,
- through 40A fusible link (letter F, located in fuse, fusible link and relay box)
- to BCM terminal 55,
- through 10A fuse [No.18, located in fuse block (J/B)]
- to BCM terminal 42.

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

- to CPU located in IPDM E/R,
- through 10A fuse [No.1, located in fuse block (J/B)]
- to BCM terminal 38.

With ignition switch in ACC or ON position, power is supplied
- through 10A fuse [No. 6, located in fuse block (J/B)]
- to BCM terminal 11.

Ground is supplied
- to BCM terminal 52
- through grounds M30 and M66,
- to IPDM E/R terminals 38 and 60
- through grounds E17, E43 and B102 (with VDC system, navigation system or telephone)
- through grounds E17, E43 and F152 (without VDC system, navigation system and telephone).

OPERATION BY LIGHTING SWITCH

With the lighting switch in the 1ST or 2ND position, the BCM receives input signal requesting the parking, license plate, side marker and tail lamps to illuminate. This input is communicated to the IPDM E/R through the CAN communication lines. The CPU located in the IPDM E/R controls the tail lamp relay coil and daytime light relay* coil. These relay, when energized, directs power to parking, license plate, side marker and tail lamps, which when energized, directs power
- through IPDM E/R terminal 22 (USA models)
- through daytime light relay terminal 5 (Canada models)
- to front combination lamp LH terminals 6
- to front combination lamp RH terminals 6
- to rear combination lamp LH terminals 2
- to rear combination lamp RH terminals 2
- to license plate lamp LH terminal 2, and
- to license plate lamp RH terminal 2.

Ground is supplied at all times
- to front combination lamp LH terminal 8, and
- to front combination lamp RH terminal 8
- through grounds E17, E43 and B102 (with VDC system, navigation system or telephone)
- through grounds E17, E43 and F152 (without VDC system, navigation system and telephone),
- to rear combination lamp LH terminals 3
- to rear combination lamp RH terminals 3
- to license plate lamp LH terminal 1, and
- to license plate lamp RH terminal 1
- through grounds B5, B6, D105 and T14 (Coupe models)
- through grounds B5, B6 and T14 (Roadster models).

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

NOTE:
Daytime light relay*: Canada models

COMBINATION SWITCH READING FUNCTION

Refer to BCS-4, "System Description".

EXTERIOR LAMP BATTERY SAVER CONTROL

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

CAN Communication System Description

INFOID:0000000001647372

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

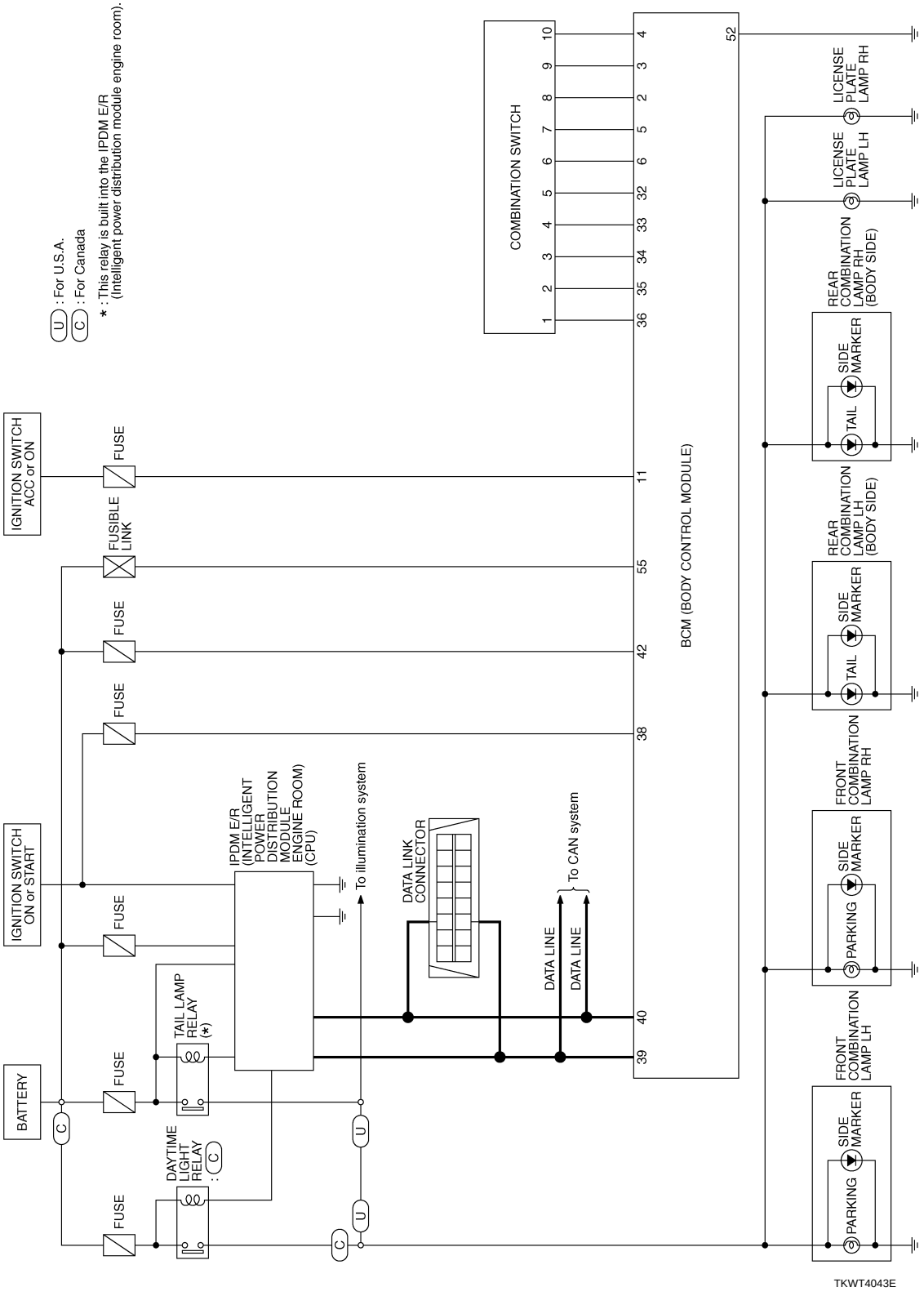
CAN Communication Unit

INFOID:0000000001647373

Refer to LAN-41, "CAN System Specification Chart".

Schematic

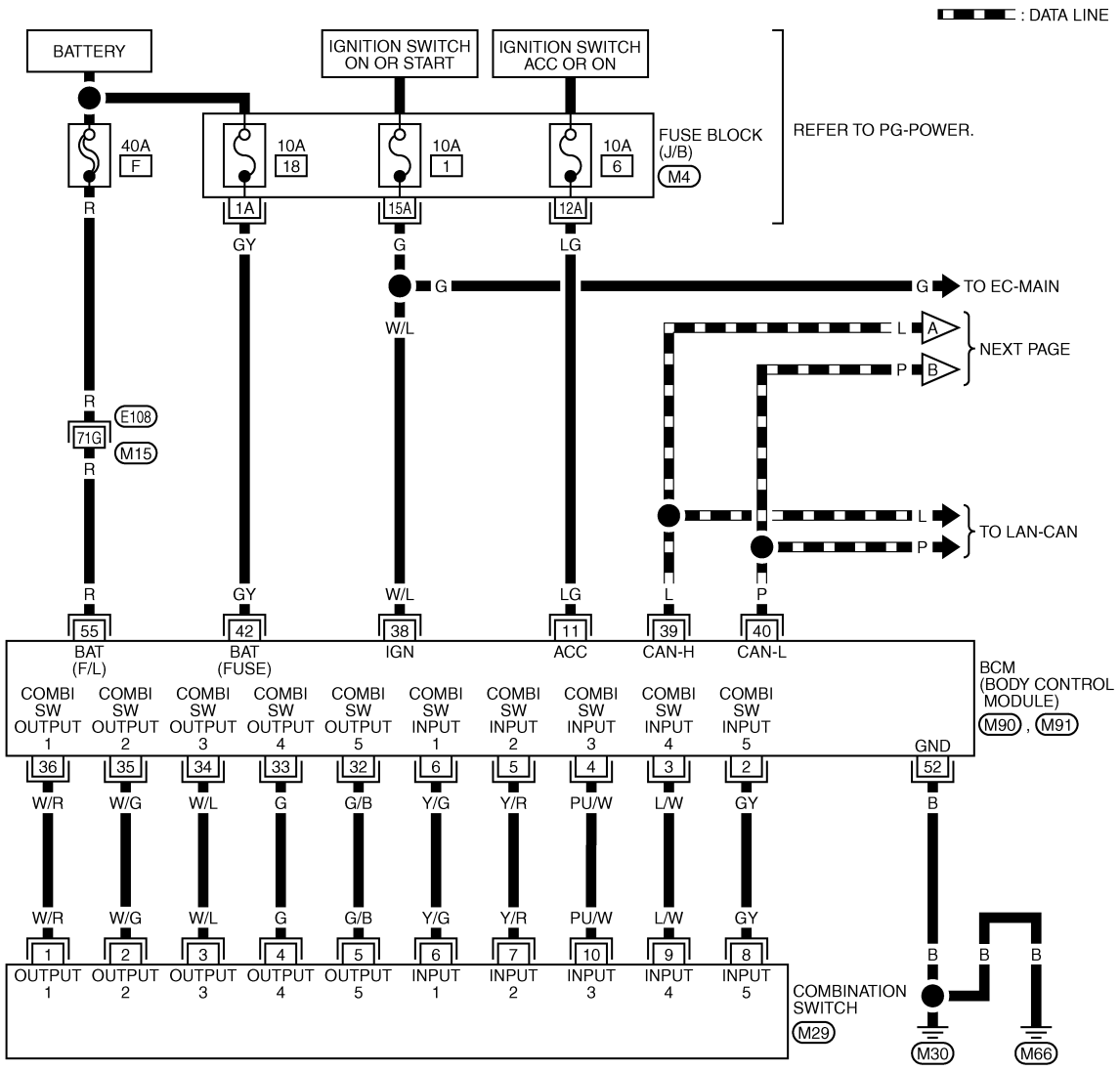
INFOID:0000000001647374

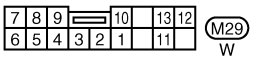


Wiring Diagram - TAIL/L -

INFOID:0000000001647375

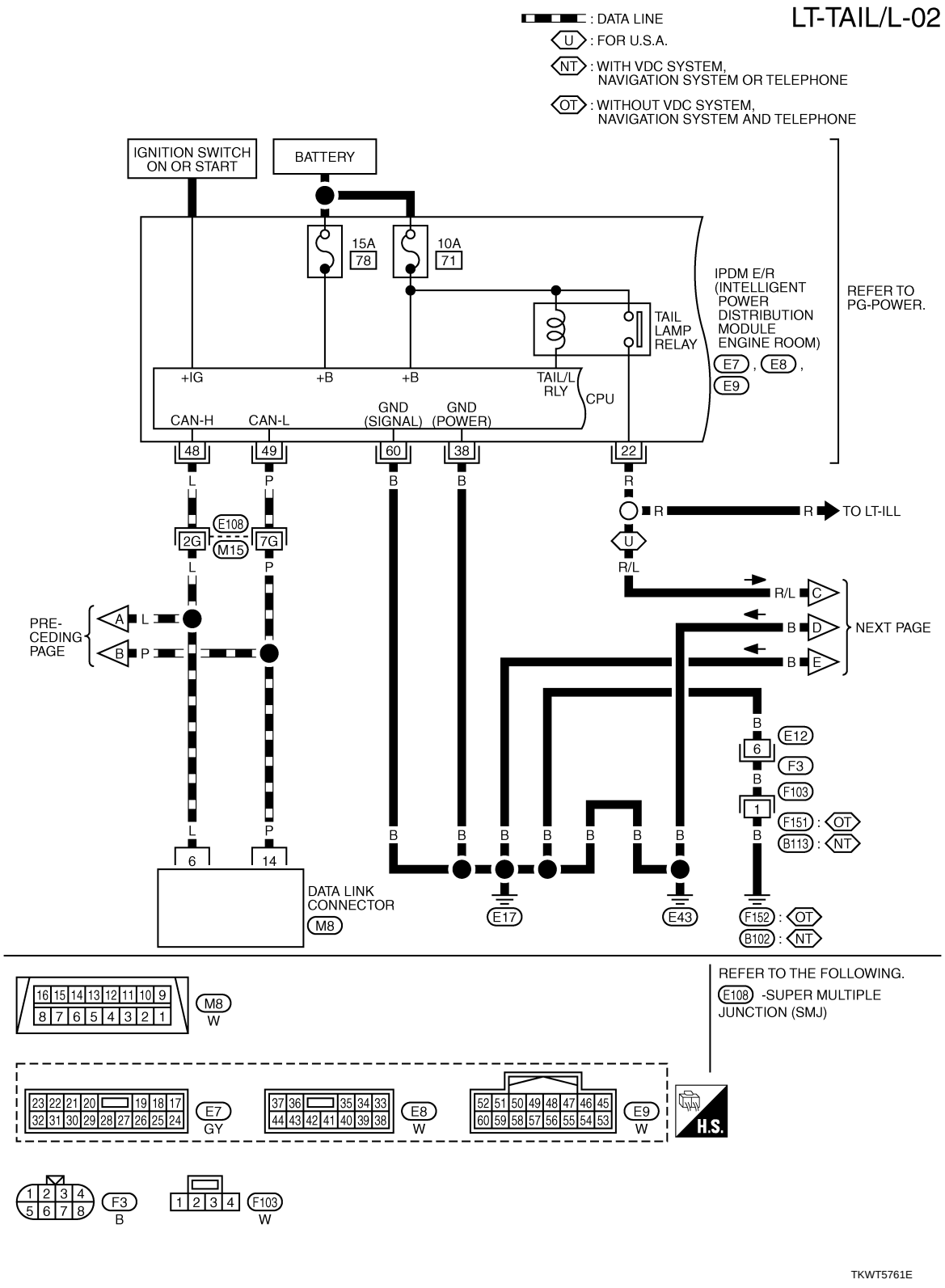
LT-TAIL/L-01

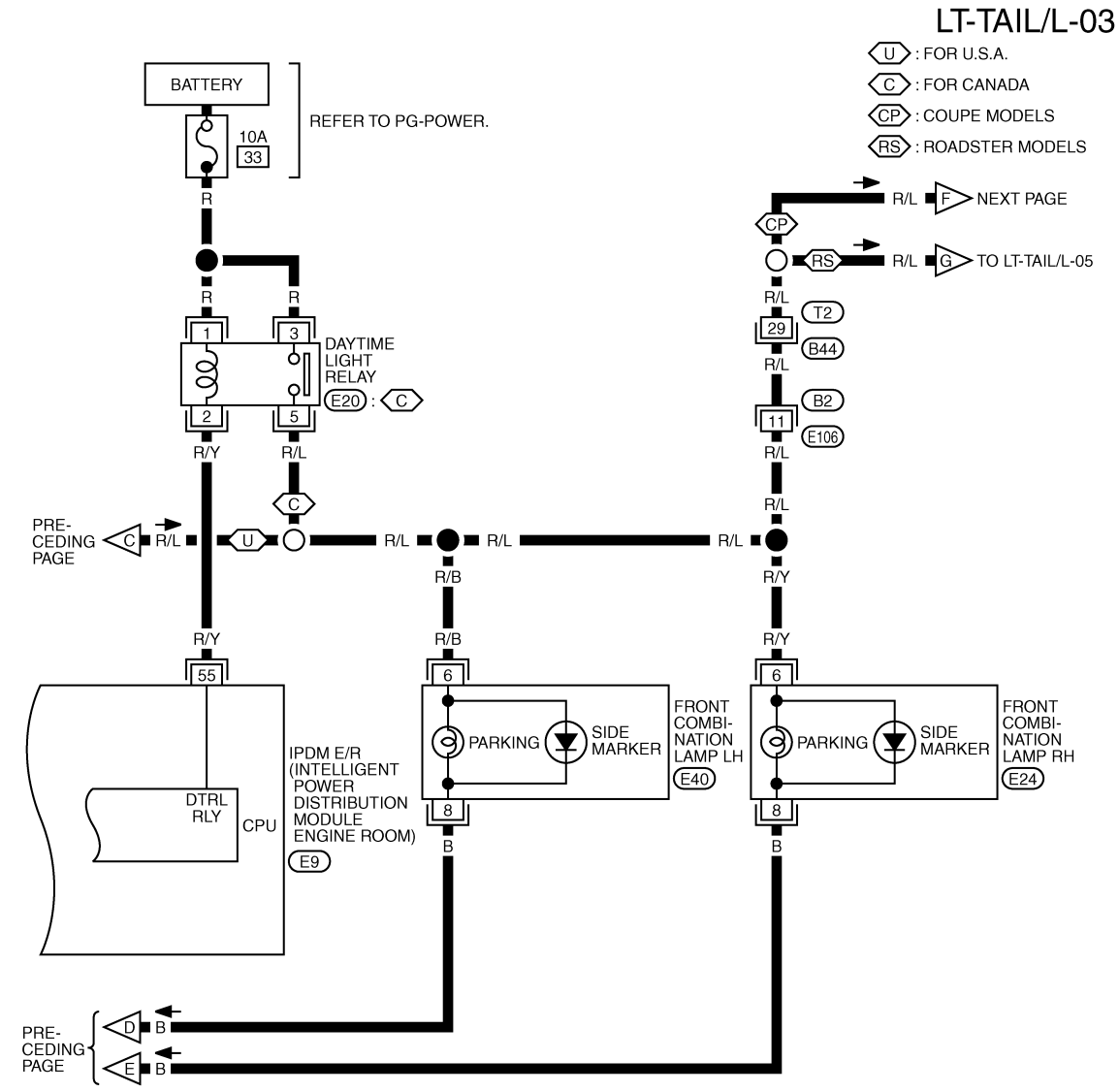


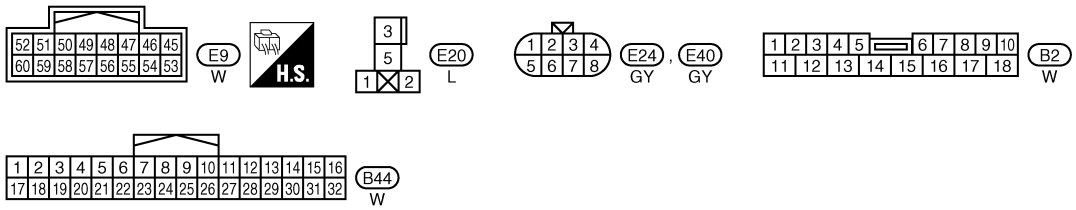


REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M4 -FUSE BLOCK-JUNCTION BOX (J/B)
M90 , M91 -ELECTRICAL UNITS

TKWT5760E


LT-TAIL/L-02
: DATA LINE
U : FOR U.S.A.
NT : WITH VDC SYSTEM, NAVIGATION SYSTEM OR TELEPHONE
OT : WITHOUT VDC SYSTEM, NAVIGATION SYSTEM AND TELEPHONE
IGNITION SWITCH ON OR START
BATTERY
15A 78
10A 71
TAIL LAMP RELAY
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) E7, E8, E9
REFER TO PG-POWER.
+IG
+B
+B
TAIL/L RLY
CPU
CAN-H
CAN-L
GND (SIGNAL)
GND (POWER)
48
49
60
38
22
TO LT-ILL
E108
2G
M15
7G
U
R/L
PRE-CEDING PAGE
A
B
C
D
E
NEXT PAGE
E12
6
F3
F103
1
F151 : OT
B113 : NT
6
14
DATA LINK CONNECTOR
M8
E17
E43
F152 : OT
B102 : NT
REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M8
W
E7
GY
E8
W
E9
W
H.S.
F3
B
F103
W
TKWT5761E

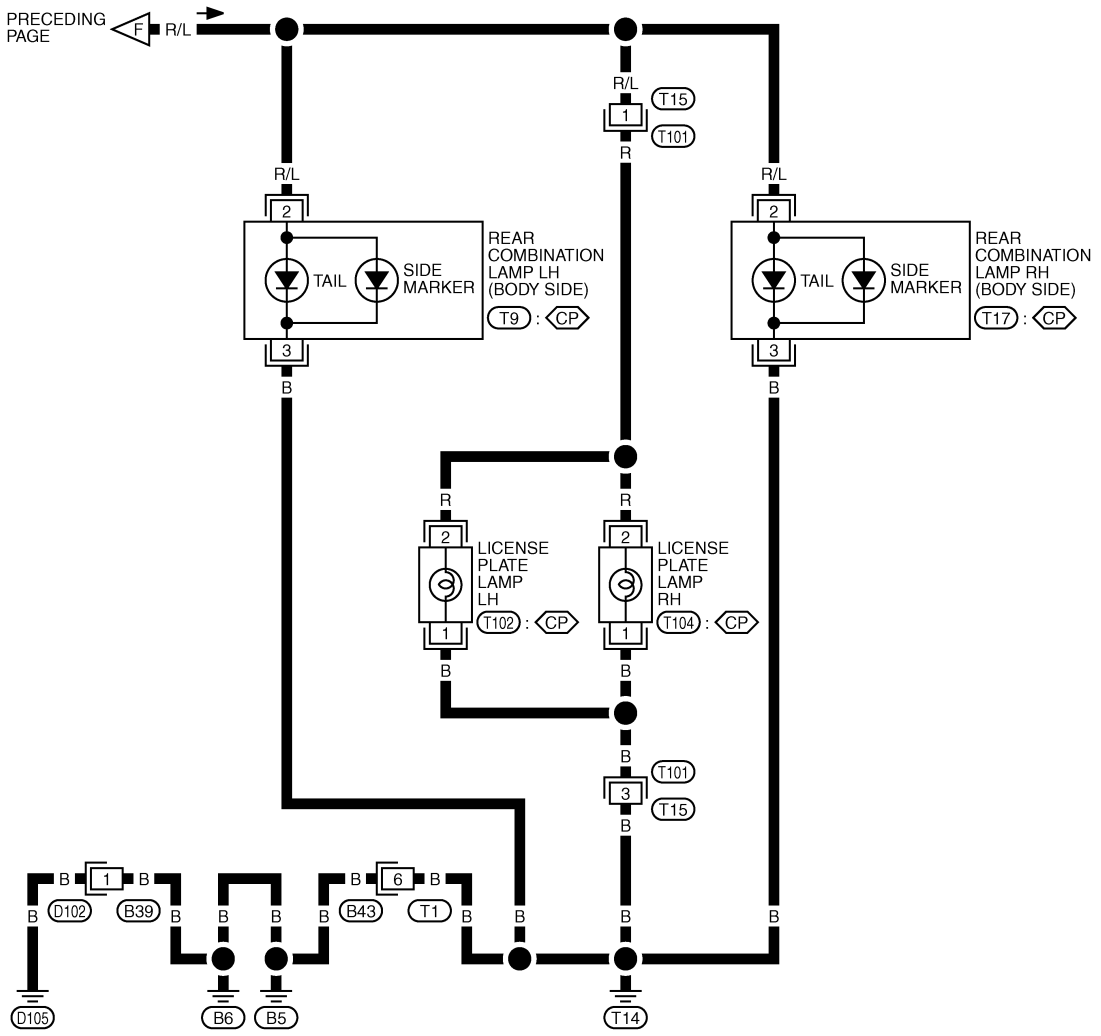

LT-TAIL/L-03
U : FOR U.S.A.
C : FOR CANADA
CP : COUPE MODELS
RS : ROADSTER MODELS
BATTERY
10A
33
REFER TO PG-POWER.
R/L F NEXT PAGE
RS R/L G TO LT-TAIL/L-05
DAYTIME LIGHT RELAY
E20 : C
T2
B44
B2
E106
PRE-CEDING PAGE
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E9
DTRL RLY
CPU
PARKING
SIDE MARKER
FRONT COMBI-NATION LAMP LH
E40
FRONT COMBI-NATION LAMP RH
E24
PRE-CEDING PAGE

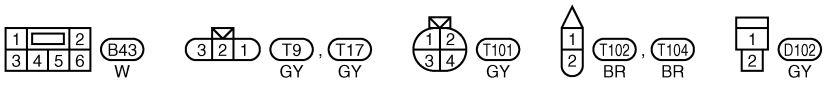

E9
W
H.S.
E20
L
E24
GY
E40
GY
B2
W
B44
W

TKWT5762E

LT-TAIL/L-04

CP : COUPE MODELS

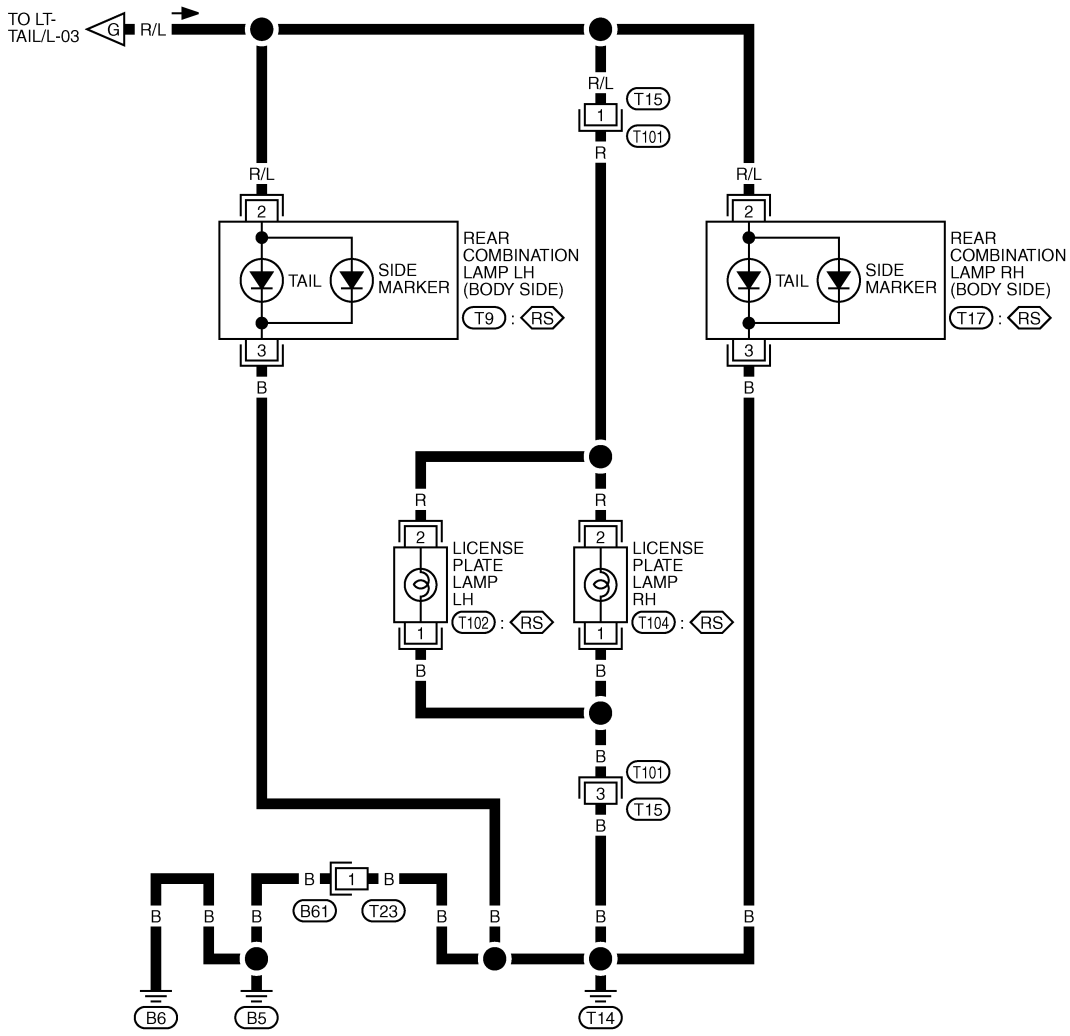


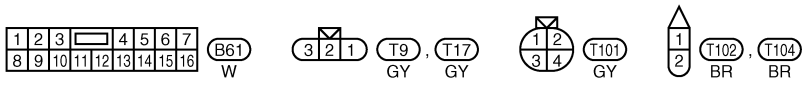


TKWT4047E

LT-TAIL/L-05

RS : ROADSTER MODELS





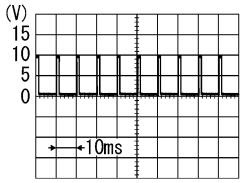
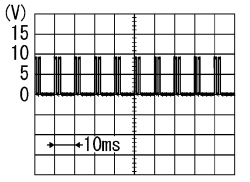
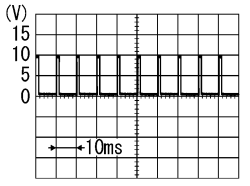
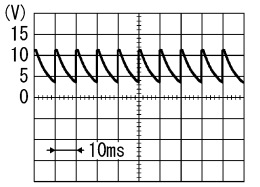
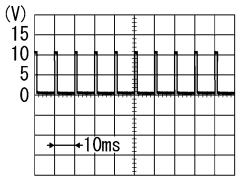
TKWT4048E

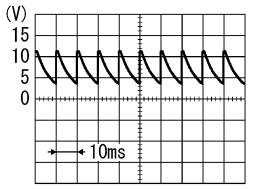
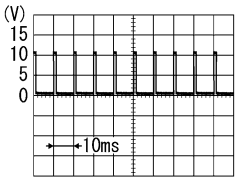
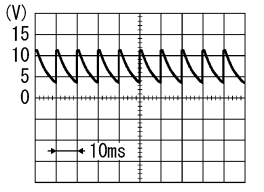
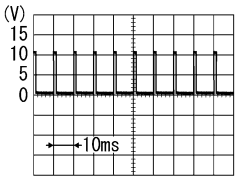
Terminal and Reference Value for BCM

INFOID:0000000001647376

CAUTION:

- **Check combination switch system terminal waveform under the loaded condition with lighting switch, turn signal switch and wiper switch OFF not to be fluctuated by overloaded.**
- **Turn wiper dial position to 4 except when checking waveform or voltage of wiper dial position. Wiper dial position can be confirmed on CONSULT-III. Refer to LT-85, "CONSULT-III Function (BCM)".**

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
2	GY	Combination switch input 5	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	Approx. 0 V
					Any of the conditions below • Lighting switch 1ST • Lighting switch HIGH beam (Operates only HIGH beam switch)	 PKIB4959J Approx. 1.0 V
					Lighting switch 2ND	 PKIB4953J Approx. 2.0 V
3	L/W	Combination switch input 4	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	Approx. 0 V
					Any of the conditions below • Lighting switch 2ND • Lighting switch PASSING (Operates only PASSING switch)	 PKIB4959J Approx. 1.0 V
11	LG	Ignition switch (ACC)	ACC	—		Battery voltage
33	G	Combination switch output 4	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	 PKIB4960J Approx. 7.2 V
					Lighting switch 1ST (The same result with lighting switch 2ND)	 PKIB4958J Approx. 1.2 V

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
34	W/L	Combination switch output 3	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	 PKIB4960J Approx. 7.2 V
					Any of the conditions below • Lighting switch 2ND • Lighting switch HI beam (Operates only HI beam switch)	 PKIB4958J Approx. 1.2 V
35	W/G	Combination switch output 2	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	 PKIB4960J Approx. 7.2 V
					Any of the conditions below • Lighting switch 2ND • Lighting switch PASSING (Operates only PASSING switch)	 PKIB4958J Approx. 1.2 V
38	W/L	Ignition switch (ON)	ON	—		Battery voltage
39	L	CAN – H	—	—		—
40	P	CAN – L	—	—		—
42	GY	Battery power supply	OFF	—		Battery voltage
52	B	Ground	ON	—		Approx. 0 V
55	R	Battery power supply	OFF	—		Battery voltage

Terminal and Reference Value for IPDM E/R

INFOID:0000000001647377

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
22	R	Parking, license plate, side marker and tail lamp	ON	Lighting switch 1ST position	OFF	Approx. 0 V
					ON	Battery voltage
38	B	Ground	ON	—		Approx. 0 V

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
48	L	CAN – H	—	—	—
49	P	CAN – L	—	—	—
60	B	Ground	ON	—	Approx. 0 V

How to Proceed with Trouble Diagnosis

INFOID:0000000001647378

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-96, "System Description".
3. Carry out preliminary check. Refer to LT-106, "Preliminary Check".
4. Check symptom and repair or replace the cause of malfunction.
5. Do parking, license plate, side marker and tail lamps operate normally? If YES, GO TO 6. If NO, GO TO 4.
6. INSPECTION END

Preliminary Check

INFOID:0000000001647379

CHECK POWER SUPPLY AND GROUND CIRCUIT

1.CHECK FUSES AND FUSIBLE LINK

Check for blown fuses and fusible link.

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

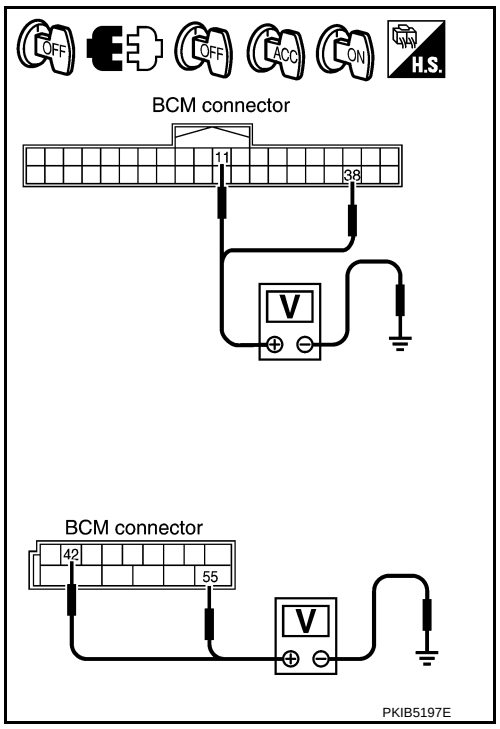
Refer to LT-99, "Wiring Diagram - TAIL/L -".

OK or NG

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

2.CHECK POWER SUPPLY CIRCUIT

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



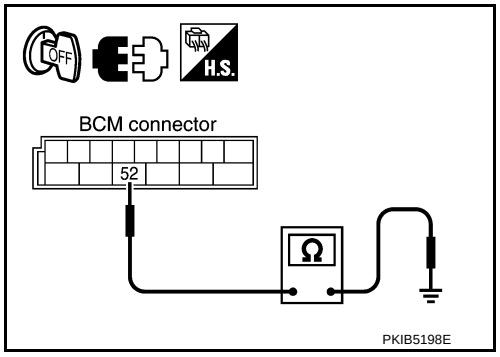
Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
BCM connector	Terminal				
M90	11	Ground	Approx. 0 V	Battery voltage	Battery voltage
	38		Approx. 0 V	Approx. 0 V	Battery voltage
M91	42		Battery voltage	Battery voltage	Battery voltage
	55		Battery voltage	Battery voltage	Battery voltage

OK or NG

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

3.CHECK GROUND CIRCUIT

Check continuity between BCM harness connector terminal and ground.



BCM connector	Terminal	Ground	Continuity
M91	52		Yes

OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

CONSULT-III Function (BCM)

INFOID:0000000001647380

Refer to LT-16, "CONSULT-III Function (BCM)" in HEADLAMP (FOR USA).
Refer to LT-46, "CONSULT-III Function (BCM)" in HEADLAMP (FOR CANADA).

CONSULT-III Function (IPDM E/R)

INFOID:0000000001647381

Refer to LT-17, "CONSULT-III Function (IPDM E/R)" in HEADLAMP (FOR USA).
Refer to LT-47, "CONSULT-III Function (IPDM E/R)" in HEADLAMP (FOR CANADA).

Parking, License Plate, Side Marker and Tail Lamps Do Not Illuminate (for USA)

INFOID:0000000001647382

1.CHECK COMBINATION SWITCH INPUT SIGNAL

CONSULT-III DATA MONITOR
1. Select "LIGHT SW 1ST" of BCM data monitor item.
2. With operating the lighting switch, check the monitor status.

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

CHECK COMBINATION SWITCH
Refer to LT-86, "Combination Switch Inspection".

OK or NG

OK >> GO TO 2.
NG >> Check combination switch (lighting switch). Refer to LT-86, "Combination Switch Inspection".

2.ACTIVE TEST

CONSULT-III ACTIVE TEST
1. Select "TAIL LAMP" of IPDM E/R active test item.
2. With operating the test item, check the parking, license plate, side marker and tail lamps operation.

Parking, license plate, side marker and tail lamps should operate.

IPDM E/R AUTO ACTIVE TEST
1. Start auto active test. Refer to PG-19, "Auto Active Test".
2. Check that the parking, license plate, side marker and tail lamps operation.

Parking, license plate, side marker and tail lamps should operate.

OK or NG

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

3.CHECK IPDM E/R

1. Select "TAIL&CLR REQ" of IPDM E/R data monitor item.
2. With operating the lighting switch, check the monitor status.

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

OK or NG

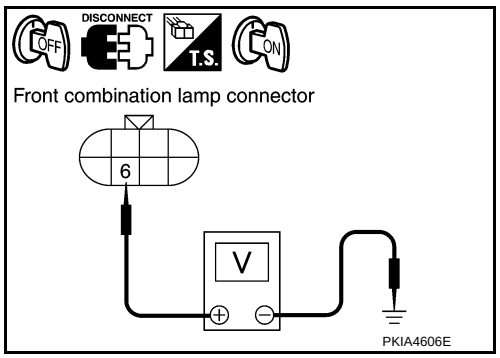
OK >> Replace IPDM E/R. Refer to PG-23, "Removal and Installation of IPDM E/R".
NG >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM".

4.CHECK IPDM E/R

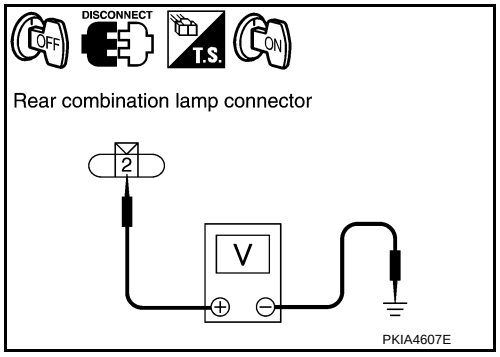
CONSULT-III ACTIVE TEST
1. Turn ignition switch OFF.
2. Disconnect front combination lamp, rear combination lamp and license plate lamp connectors.
3. Select "TAIL LAMP" of IPDM E/R active test item.
4. With operating the test item, check voltage between front combination lamp, rear combination lamp and license plate lamp harness connector and ground.

IPDM E/R AUTO ACTIVE TEST
1. Turn ignition switch OFF.
2. Disconnect front combination lamp, rear combination lamp and license plate lamp connector.
3. Start auto active test. Refer to PG-19, "Auto Active Test".
4. With operating the test item, check voltage between front combination lamp, rear combination lamp and license plate lamp harness connector and ground.

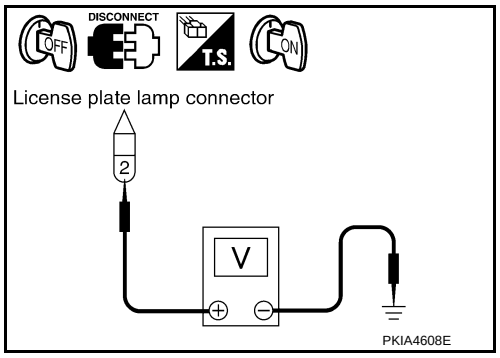
Terminals				Voltage (Approx.)
(+)			(-)	
Front combination lamp connector		Terminal		
RH	E24	6	Ground	Battery voltage
LH	E40			



Terminals				Voltage (Approx.)
(+)			(-)	
Rear combination lamp connector		Terminal		
RH	T17	2	Ground	Battery voltage
LH	T9			



Terminals				Voltage (Approx.)
(+)			(-)	
License plate lamp connector		Terminal		
RH	T104	2	Ground	Battery voltage
LH	T102			



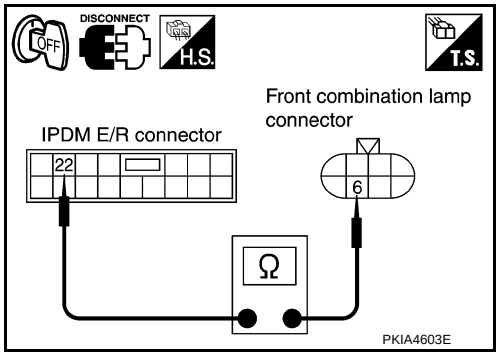
OK or NG

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

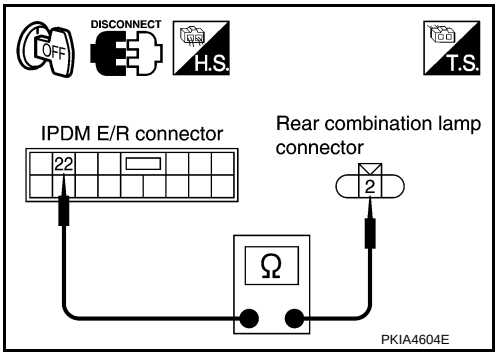
5. CHECK CIRCUIT BETWEEN IPDM E/R AND PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMPS

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

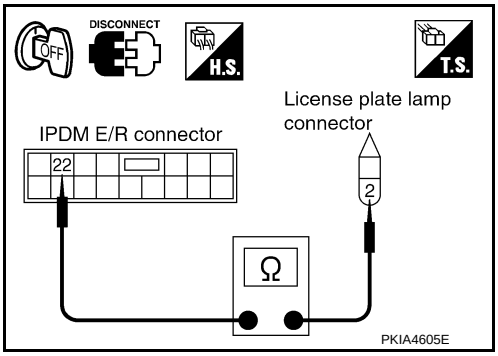
Terminals					Continuity
IPDM E/R		Front combination lamp			
Connector	Terminal	Connector		Terminal	
E7	22	RH	E24	6	Yes
		LH	E40	6	



Terminals					Continuity
IPDM E/R		Rear combination lamp			
Connector	Terminal	Connector		Terminal	
E7	22	RH	T17	2	Yes
		LH	T9	2	



Terminals					Continuity
IPDM E/R		Licence plat lamp			
Connector	Terminal	Connector		Terminal	
E7	22	RH	T104	2	Yes
		LH	T102	2	



OK or NG

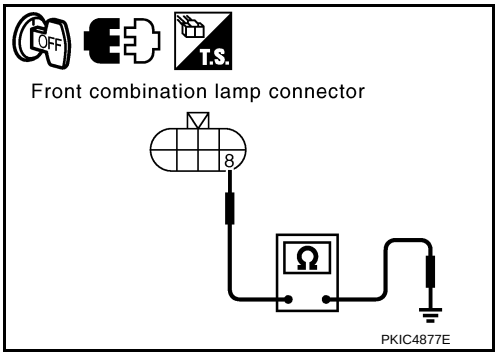
OK >> Replace IPDM E/R. Refer to PG-23, "Removal and Installation of IPDM E/R".

NG >> Repair harness or connector.

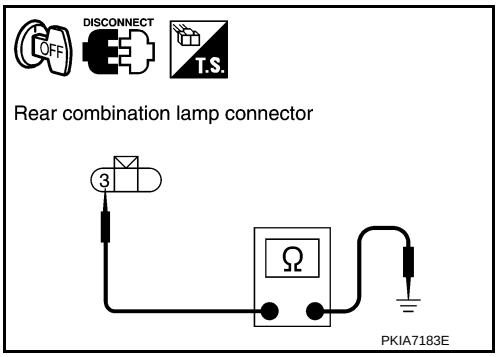
6. CHECK GROUND

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

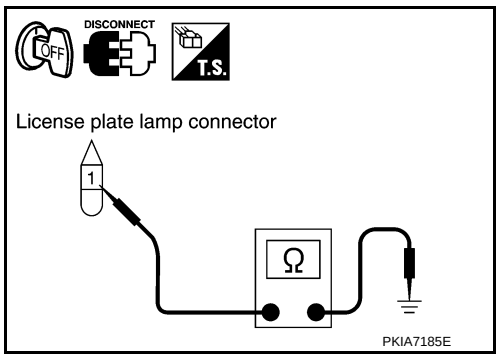
Front combination lamp connector		Terminal	Ground	Continuity
RH	E24	8		Yes
LH	E40			



Rear combination lamp connector		Terminal	Ground	Continuity
RH	T17	3		Yes
LH	T9			



License plate lamp connector		Terminal	Ground	Continuity
RH	T104	1		Yes
LH	T102			



OK or NG

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

Parking, License Plate, Side Marker, and Tail Lamps Do Not Illuminate (for Canada)

INFOID:0000000001647383

1. CHECK COMBINATION SWITCH INPUT SIGNAL

CONSULT-III DATA MONITOR
1. Select "LIGHT SW 1ST" of BCM data monitor item.
2. With operating the lighting switch, check the monitor status.

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

CHECK COMBINATION SWITCH
Refer to LT-86, "Combination Switch Inspection".

OK or NG

OK >> GO TO 2.
NG >> Check combination switch (lighting switch). Refer to LT-86, "Combination Switch Inspection".

2. ACTIVE TEST

CONSULT-III ACTIVE TEST
1. Select "TAIL LAMP" of IPDM E/R active test item.
2. With operating the test item, check the parking, license plate, side marker and tail lamps operation.

Parking, license plate, side marker and tail lamps should operate.

IPDM E/R AUTO ACTIVE TEST
1. Start auto active test. Refer to PG-19, "Auto Active Test".
2. With operating the test item, check the parking, license plate, side marker and tail lamps operation.

Parking, license plate, side marker and tail lamps should operate.

OK or NG

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

3. CHECK IPDM E/R

1. Select "TAIL&CLR REQ" of IPDM E/R data monitor item.
2. With operating the lighting switch, check the monitor status.

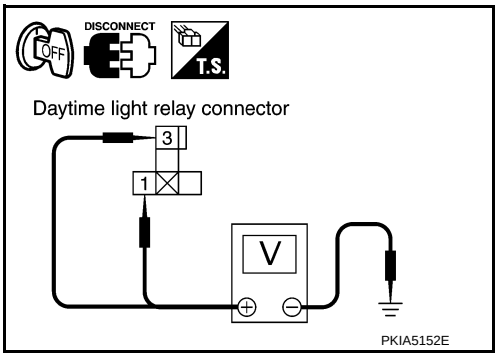
When lighting switch is 1ST position : TAIL&CLR REQ ON

OK or NG

OK >> Replace IPDM E/R. Refer to PG-23, "Removal and Installation of IPDM E/R".
NG >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM".

4. CHECK POWER SUPPLY CIRCUIT TO DAYTIME LIGHT RELAY

1. Turn ignition OFF.
2. Disconnect daytime light relay.
3. Check voltage between daytime light relay harness connector and ground.



Terminal			voltage (Approx.)
(+)		(–)	
Daytime light relay connector	Terminal		
E20	1	Ground	Battery voltage
	3		

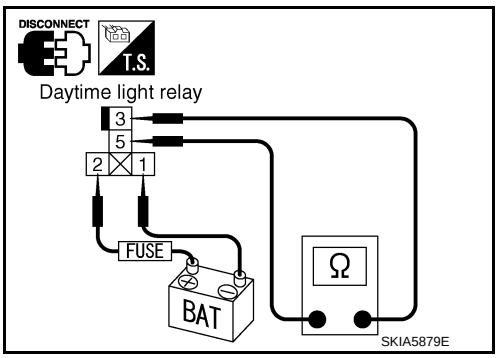
OK or NG

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

5. CHECK DAYTIME LIGHT RELAY

Apply battery voltage to between daytime light relay E20 terminal 1, 2 and check continuity between terminal 3 and 5.

3 – 5 : Continuity should exist.

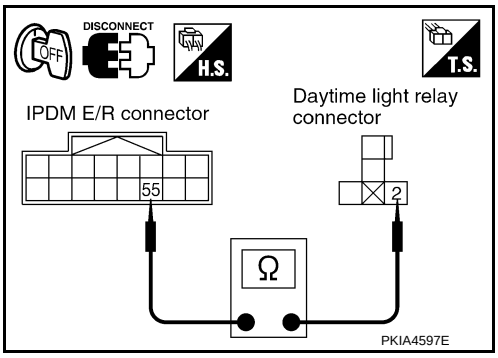


OK or NG

OK >> GO TO 6.
NG >> Replace daytime light relay.

6. CHECK DAYTIME LIGHT RELAY CIRCUIT

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



Terminals				Continuity
IPDM E/R		Daytime light relay		
Connector	Terminal	Connector	Terminal	
E9	55	E20	2	Yes

OK or NG

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

7. CHECK IPDM E/R

CONSULT-III ACTIVE TEST

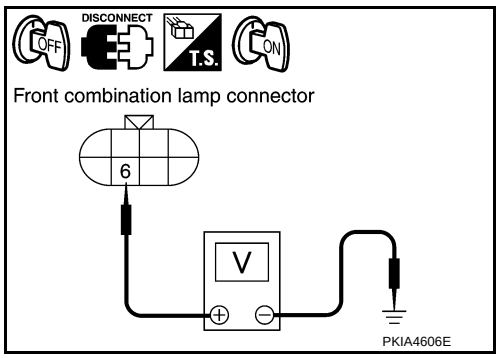
1. Connect daytime light relay and IPDM E/R connector.
2. Disconnect front combination lamp, rear combination lamp and license plate lamp connectors.
3. Select "TAIL LAMP" of IPDM E/R active test item.
4. With operating the test item, check voltage between front combination lamp, rear combination lamp and license plate lamp harness connector and ground.

IPDM E/R AUTO ACTIVE TEST

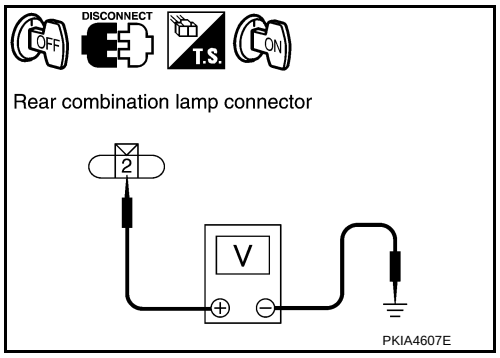
1. Connect daytime light relay and IPDM E/R connector.
2. Disconnect front combination lamp, rear combination lamp and license plate lamp connector.
3. Start auto active test. Refer to PG-19, "Auto Active Test".

4. With operating the test item, check voltage between front combination lamp, rear combination lamp and license plate lamp harness connector and ground.

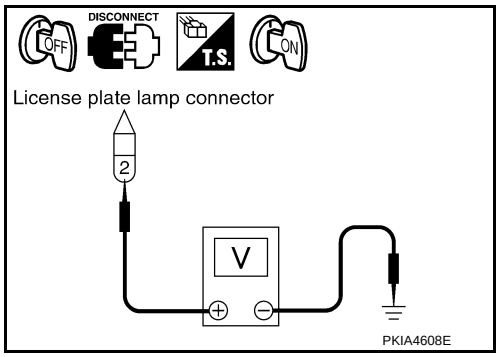
Terminals				Voltage (Approx.)
(+)			(-)	
Front combination lamp connector		Terminal		
RH	E24	6	Ground	Battery voltage
LH	E40			



Terminals				Voltage (Approx.)
(+)			(-)	
Rear combination lamp connector		Terminal		
RH	T17	2	Ground	Battery voltage
LH	T9			



Terminals				Voltage (Approx.)
(+)			(-)	
License plate lamp connector		Terminal		
RH	T104	2	Ground	Battery voltage
LH	T102			



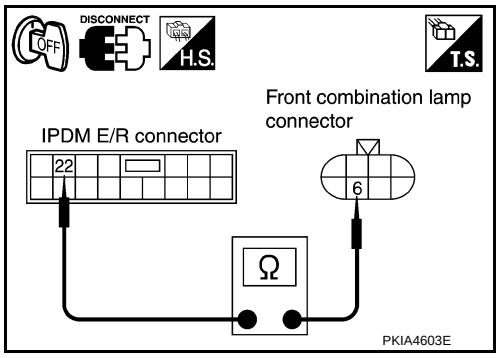
OK or NG

OK >> GO TO 9.
NG >> GO TO 8.

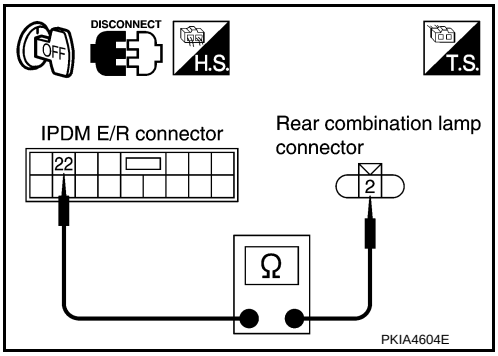
8. CHECK CIRCUIT BETWEEN IPDM E/R AND PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMPS

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

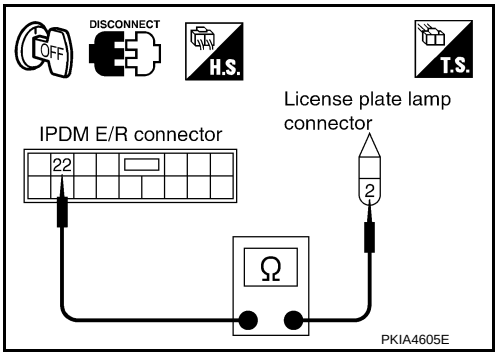
Terminals					Continuity
IPDM E/R		Front combination lamp			
Connector	Terminal	Connector		Terminal	
E7	22	RH	E24	6	Yes
		LH	E40	6	



Terminals					Continuity
IPDM E/R		Rear combination lamp			
Connector	Terminal	Connector		Terminal	
E7	22	RH	T17	2	Yes
		LH	T9	2	



Terminals					Continuity
IPDM E/R		Licence plat lamp			
Connector	Terminal	Connector		Terminal	
E7	22	RH	T104	2	Yes
		LH	T102	2	



OK or NG

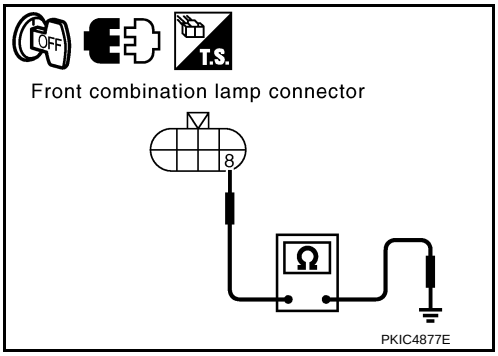
OK >> Replace IPDM E/R. Refer to PG-23, "Removal and Installation of IPDM E/R".

NG >> Repair harness or connector.

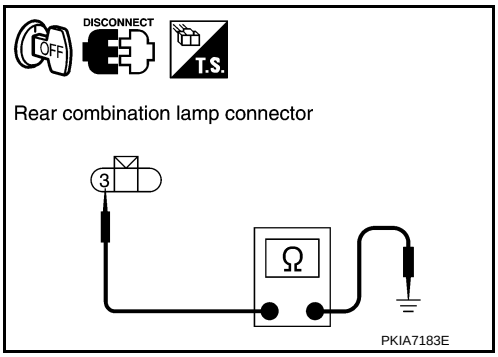
9. CHECK GROUND

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

Front combination lamp connector		Terminal	Ground	Continuity
RH	E24	8		Yes
LH	E40			



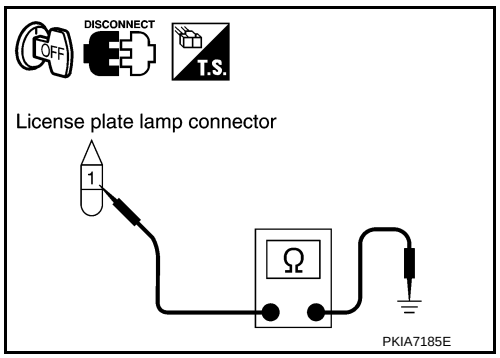
Rear combination lamp connector		Terminal	Ground	Continuity
RH	T17	3		Yes
LH	T9			



License plate lamp connector		Terminal	Ground	Continuity
RH	T104	1		Yes
LH	T102			

OK or NG

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



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

INFOID:0000000001647384

1.CHECK IPDM E/R

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

OK or NG

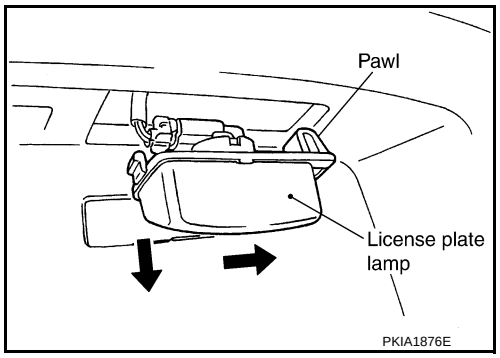
OK >> INSPECTION END.
NG >> Ignition relay malfunction. Refer to PG-17, "Function of Detecting Ignition Relay Malfunction".

License Plate Lamp

INFOID:0000000001647385

BULB REPLACEMENT, REMOVAL AND INSTALLATION

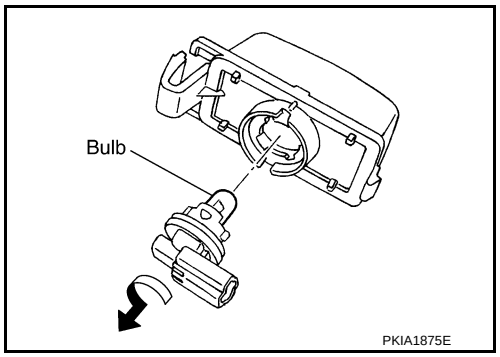
1. While pressing license plate lamp to rightward, pull left side of it and remove.
2. Disconnect license plate lamp connector.



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

License plate lamp : 12V - 5W

5. Installation is the reverse order of removal.



Front Parking Lamp

INFOID:0000000001647386

BULB REPLACEMENT

Refer to LT-27, "Bulb Replacement".

REMOVAL AND INSTALLATION

Refer to LT-28, "Removal and Installation".

Tail Lamp

INFOID:0000000001647387

BULB REPLACEMENT

Refer to LT-117, "Bulb Replacement".

REMOVAL AND INSTALLATION

Refer to LT-117, "Removal and Installation".

REAR COMBINATION LAMP

Bulb Replacement

INFOID:0000000001647388

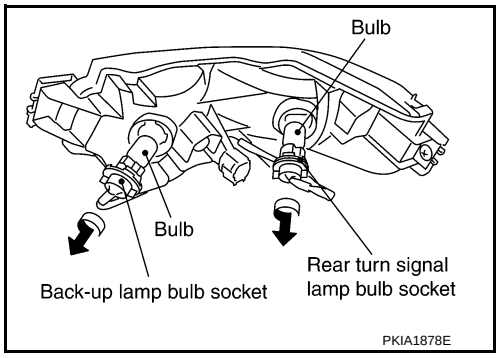
REAR FENDER SIDE (STOP & TAIL LAMP, REAR SIDE MARKER LAMP)

1. Remove rear combination lamp. Refer to LT-117, "Removal and Installation".
2. Replacement integral with rear combination lamp (rear fender side).

Stop/tail lamp	**: LED**
Rear side marker lamp	**: LED**

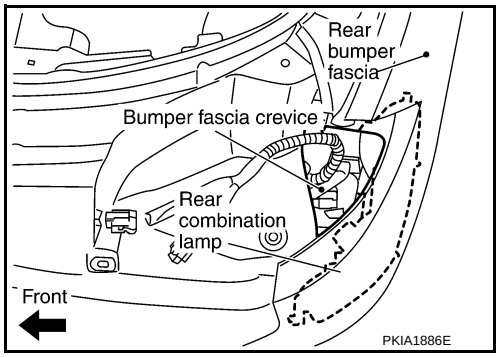
REAR BUMPER SIDE (BACK-UP LAMP BULB, REAR TURN SIGNAL LAMP BULB)

1. Remove rear combination lamp. Refer to LT-117, "Removal and Installation"
2. Turn bulb socket counterclockwise and unlock it through bumper fascia crevice.



3. Remove bulb.
4. Installation is the reverse order of removal.

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



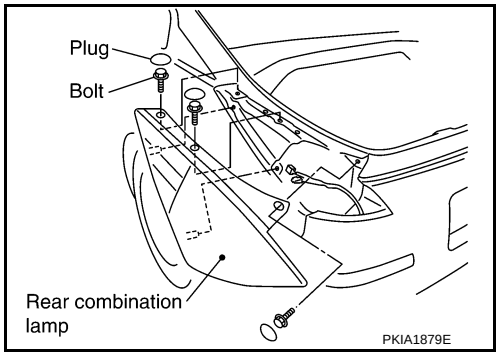
Removal and Installation

INFOID:0000000001647389

REMOVAL

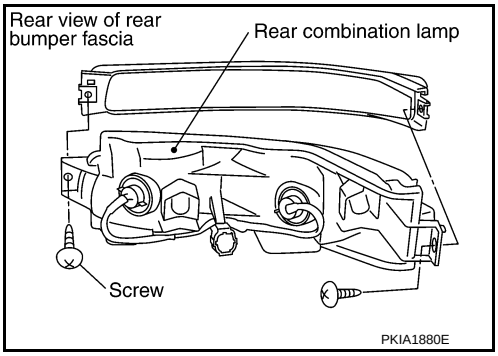
Rear Fender Side

1. Remove plugs and remove rear combination lamp mounting bolts.
2. Pull rear combination lamp toward side of the vehicle and remove from the vehicle.
3. Disconnect rear combination lamp connector.



Rear Bumper Side

1. Remove rear bumper fascia. Refer to EI-15.
2. Disconnect rear combination lamp connector.
3. Remove rear combination lamp mounting screws.
4. Remove rear combination lamp from rear bumper fascia.



INSTALLATION

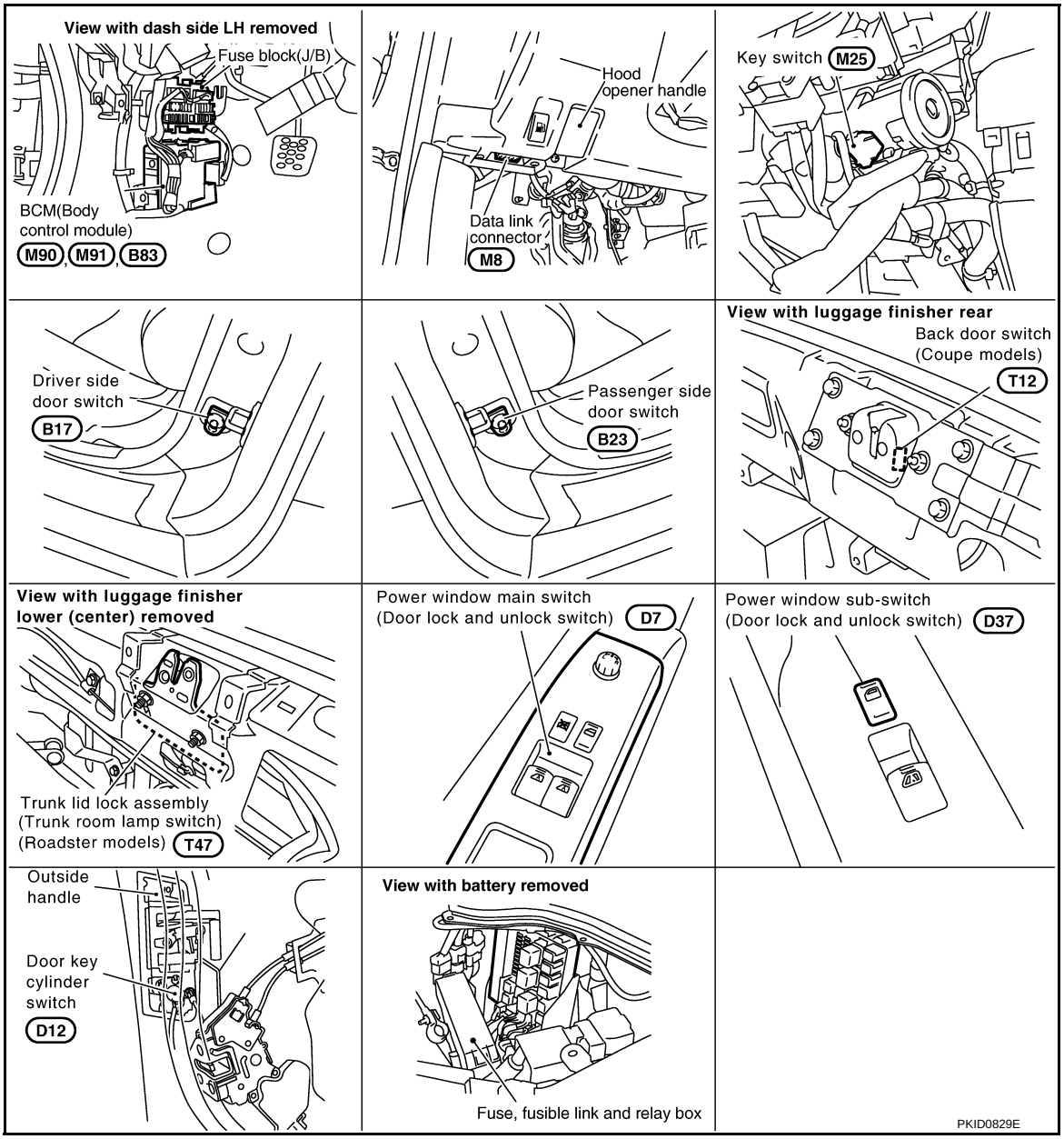
Installation is the reverse order of removal. Be careful of the following:

Rear combination lamp (Rear fender side) mounting bolt : 5.5 N·m (0.56 kg-m, 49 in-lb)

INTERIOR ROOM LAMP

Component Parts and Harness Connector Location

INFOID:0000000001647390



System Description

INFOID:0000000001647391

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

POWER SUPPLY AND GROUND

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

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

When key is removed from ignition key cylinder, power is interrupted
• through key switch terminal 1
• to BCM terminal 37.

With ignition switch in ON or START position, power is supplied
• through 10A fuse [No.1, located in fuse block (J/B)]
• to BCM terminal 38.

When map lamp and vanity mirror lamp power is supplied at times
• through BCM terminal 41
• to ignition key hole illumination terminal1
• to map lamp terminal 3 (Coupe models)
• to map lamp terminal 2 (Roadster models)
• to luggage room lamp terminal 1 (Coupe models)
• to trunk room lamp terminal 1 (Roadster models) and
• to vanity mirror lamp LH and RH terminals 1.

Ground is supplied
• to BCM terminal 52
• through grounds M30 and M66.

When driver side door is opened, ground is supplied
• through case ground of driver side door switch
• to BCM terminal 62.

When passenger side door is opened, ground is supplied
• through case ground of passenger side door switch
• to BCM terminal 12.

When back door is opened, ground is supplied (Coupe models)
• through grounds B5, B6, D105 and T14
• to back door switch terminal 3
• through back door switch terminal 1
• to BCM terminal 58.

When trunk lid is opened, ground is supplied (Roadster models)
• through grounds B5, B6 and T14
• to trunk lid lock assembly (trunk room lamp switch) terminal 1
• through trunk lid lock assembly (trunk room lamp switch) terminal 3
• to BCM terminal 57.

When the driver side door or passenger side door is unlocked by door lock and unlock switch, The BCM receives unlock signal with power window serial link
• through grounds M30 and M66
• to power window main switch (door lock and unlock switch) terminal 15 or power window sub switch (door lock and unlock switch) terminal 11
• through power window main switch (door lock and unlock switch) terminal 12 and power window sub switch (door lock and unlock switch) terminal 16
• to BCM terminal 22.

When the driver side door is unlocked by door key cylinder switch, The BCM receives information by communicating with power window main switch
• through grounds M30 and M66
• to door key cylinder switch terminal 2
• through door key cylinder switch terminal 1
• to power window main (door lock and unlock switch) switch terminal 7
• through power window main switch (door lock and unlock switch) terminal 12
• to BCM terminal 22.

When a signal, or combination of signals is received by BCM, ground is supplied
• through BCM terminal 48
• to map lamp terminal 2 (Coupe models)
• to map lamp terminal 3 (Roadster models).

With power and ground are supplied, map lamp illuminates.

SWITCH OPERATION

When map lamp switch is ON, ground is supplied
• to map lamp terminal 1 (Coupe models)

- to map lamp terminal 1 (Roadster models)
- through grounds M30 and M66.

And power is supplied

- through BCM terminal 41
- to ignition key hole illumination terminal 1
- to map lamp terminal 3 (Coupe models)
- to map lamp terminal 2 (Roadster models).

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

- to vanity mirror lamp LH and RH terminals 2
- through grounds M30 and M66.

And power is supplied

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

MAP LAMP TIMER OPERATION

When the map lamp switch is in the DOOR position, and when all conditions below are met, BCM performs timer control (maximum 30 seconds) for map lamp ON/OFF.
In addition, when map lamp turns ON or OFF there is gradual brightening or dimming over 1 second.
Power is supplied at all times

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

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

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

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

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

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

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

INTERIOR LAMP BATTERY SAVER CONTROL

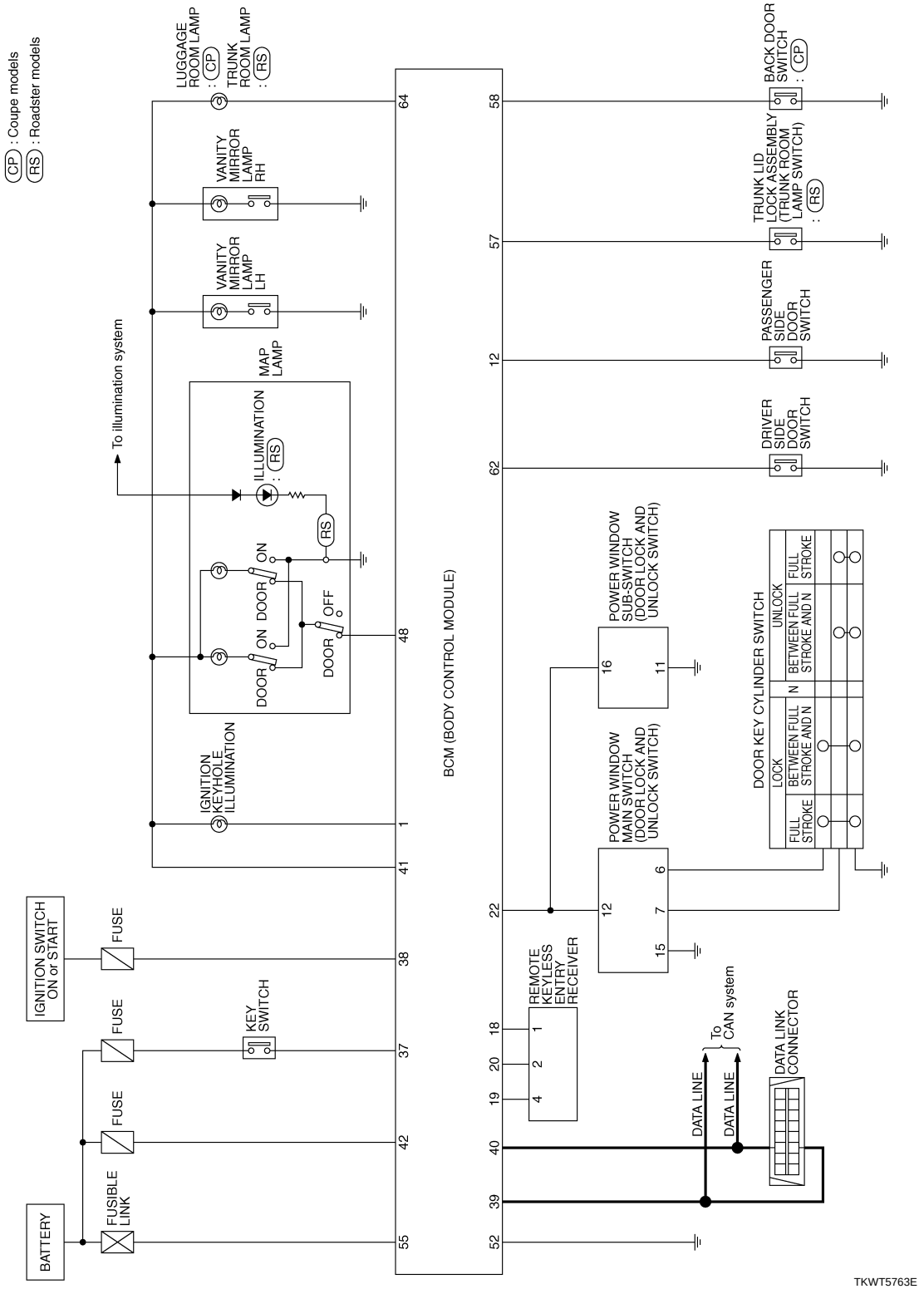
If the room lamp remains illuminated by door switch open signal, or if room lamp switch is in the ON position for more than 30 minutes after the ignition switch is turned to the OFF position, BCM will automatically turn off map lamp, luggage room lamp (Coupe models), trunk room lamp (Roadster models)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

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

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

Schematic

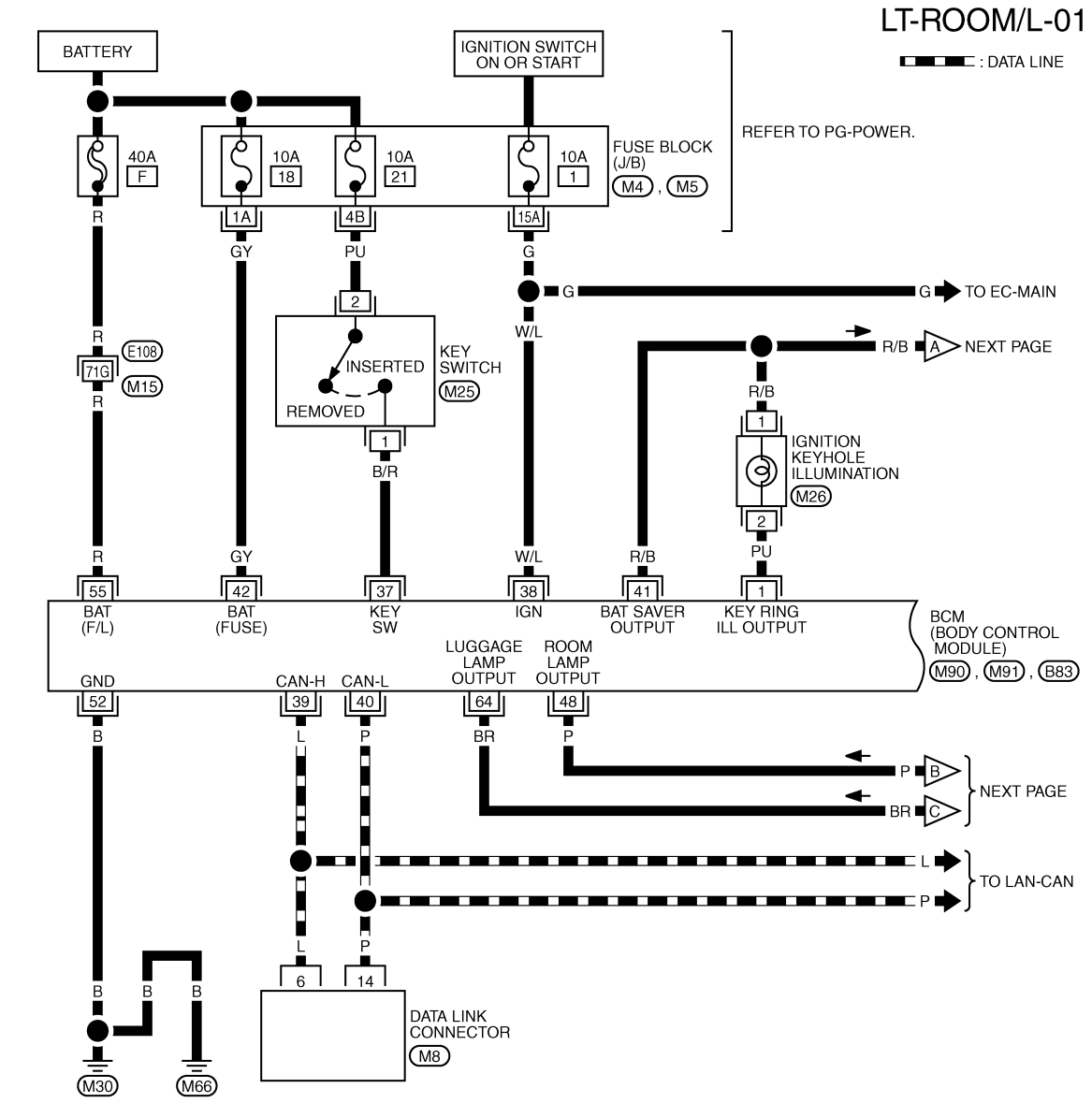
INFOID:0000000001647392



Wiring Diagram - ROOM/L -

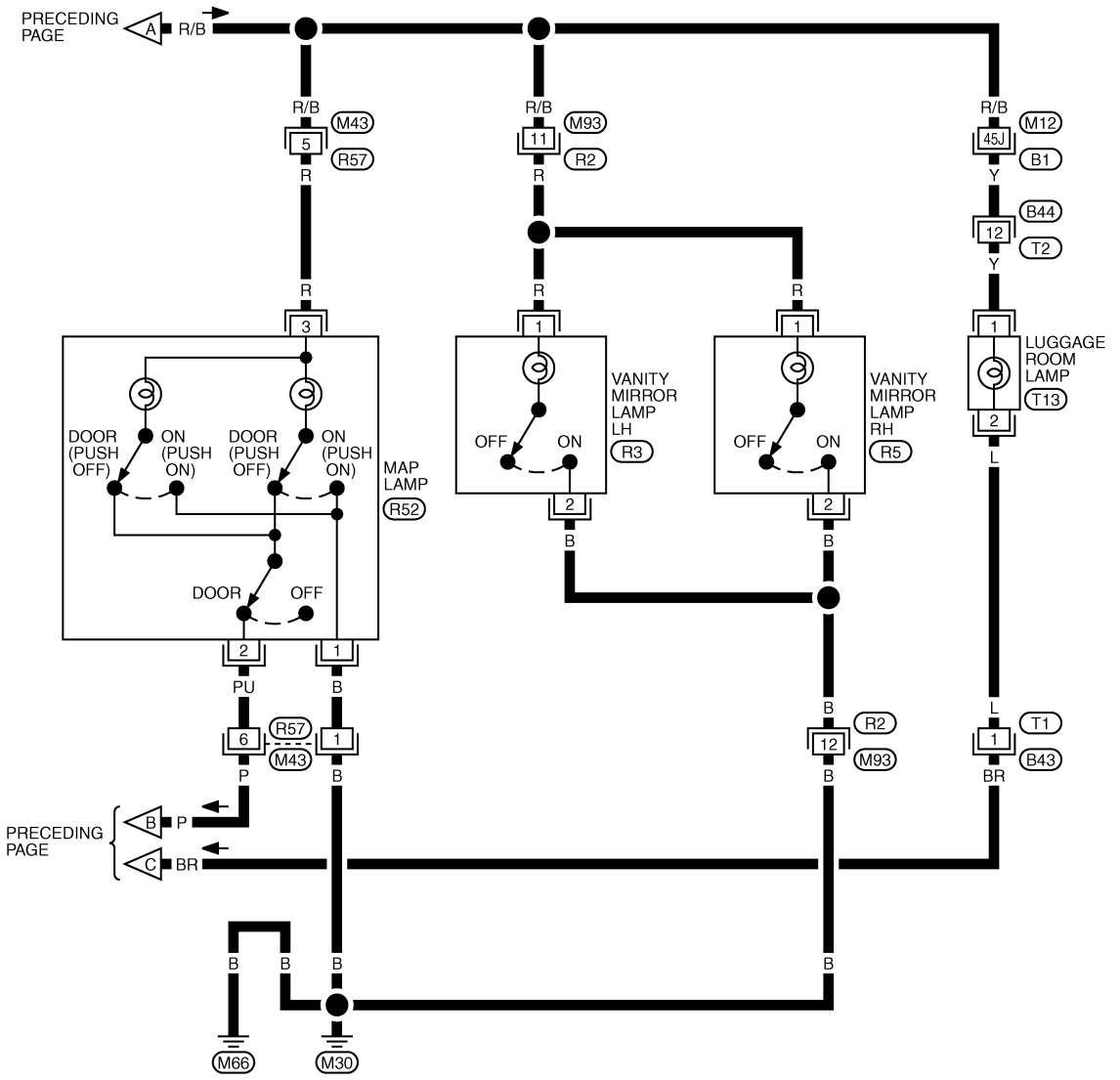
INFOID:0000000001647393

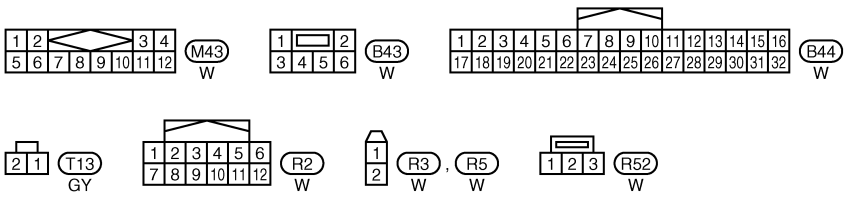
COUPE MODELS



TKWT5764E

LT-ROOM/L-02

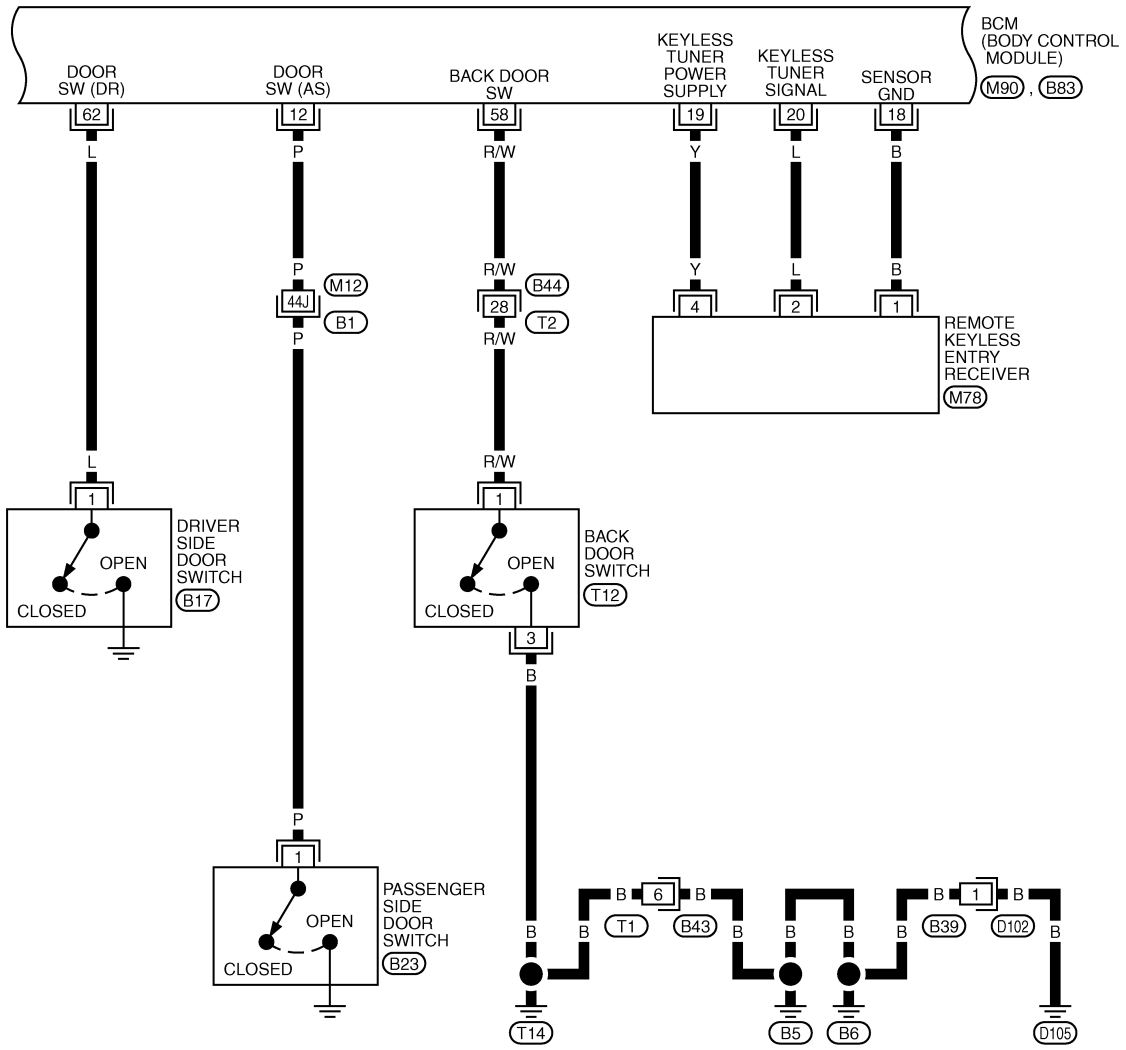




REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)

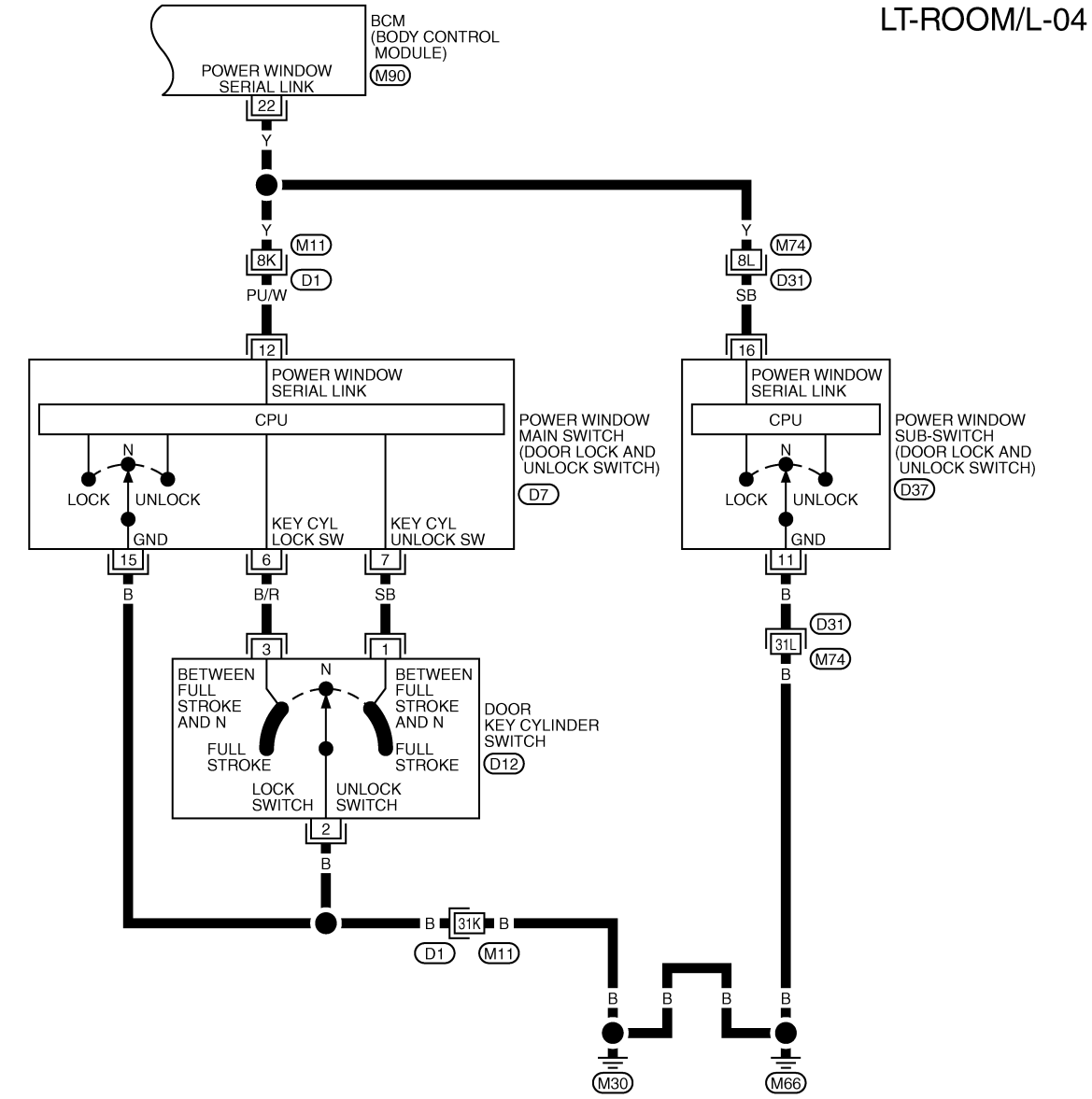
TKWT5589E

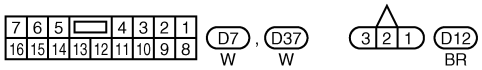
LT-ROOM/L-03



TKWT4052E

LT-ROOM/L-04

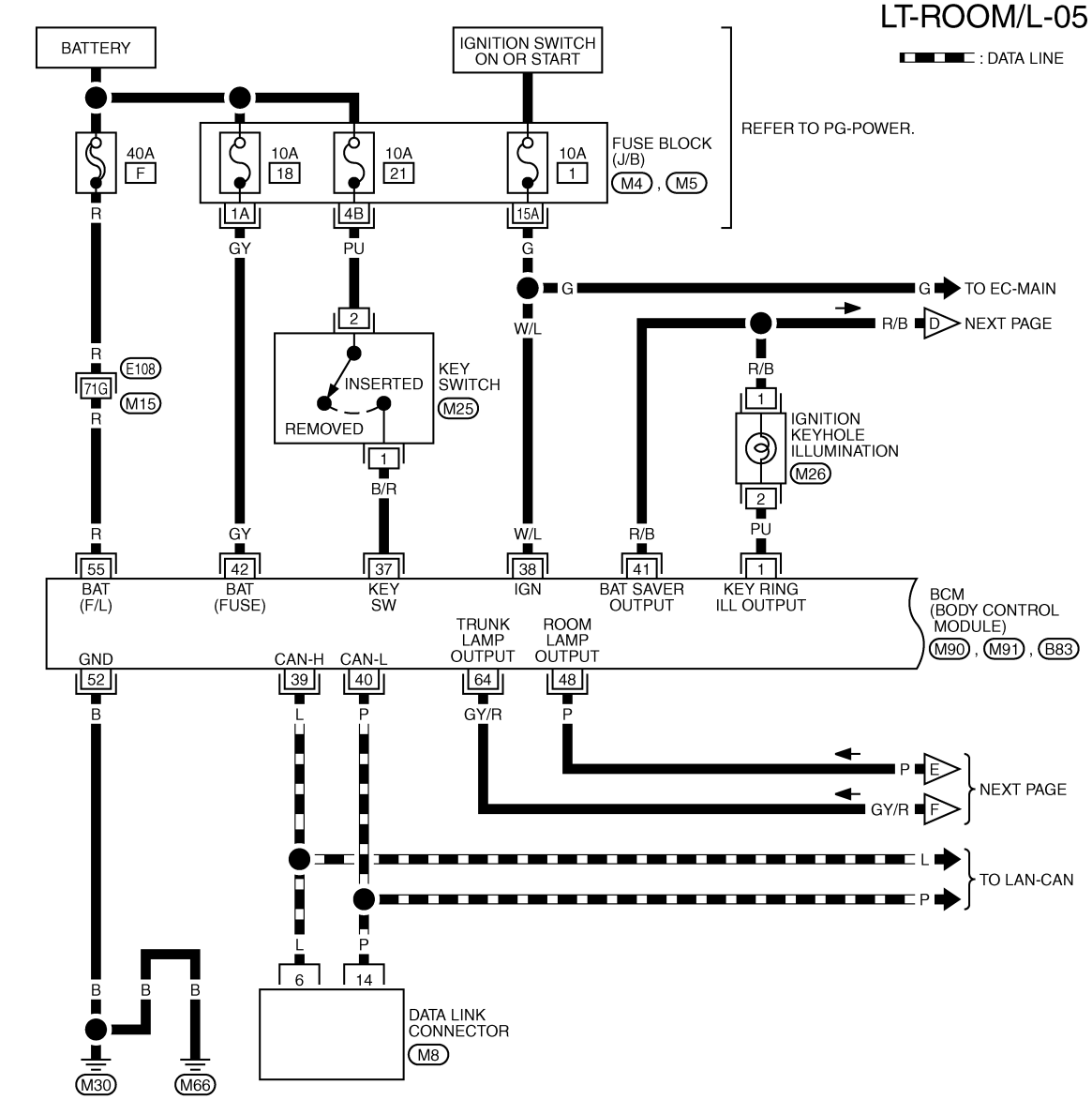


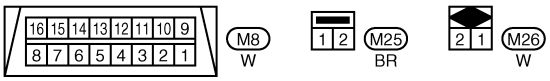


REFER TO THE FOLLOWING.
D1 , D31 -SUPER MULTIPLE JUNCTION (SMJ)
M90 -ELECTRICAL UNITS

TKWT4053E

LT-ROOM/L-05

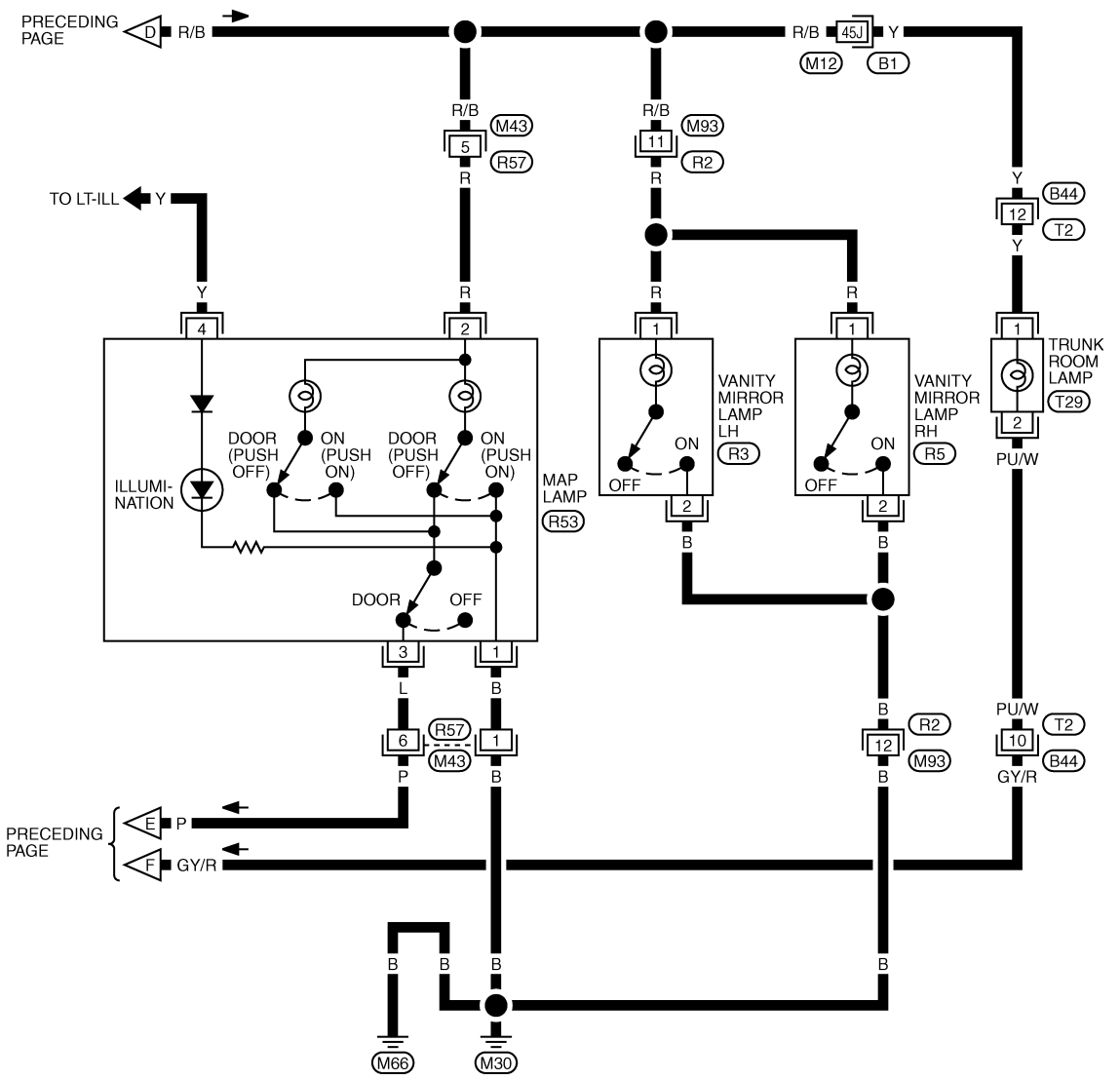


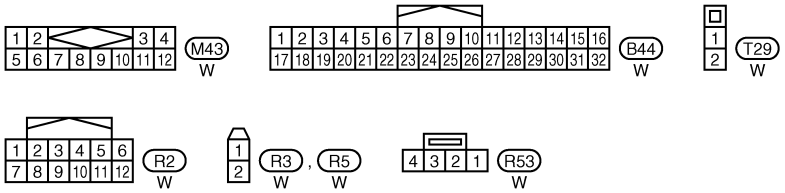


REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)
M4 , M5 -FUSE BLOCK-JUNCTION BOX (J/B)
M90 , M91 , B83 -ELECTRICAL UNITS

TKWT5765E

LT-ROOM/L-06

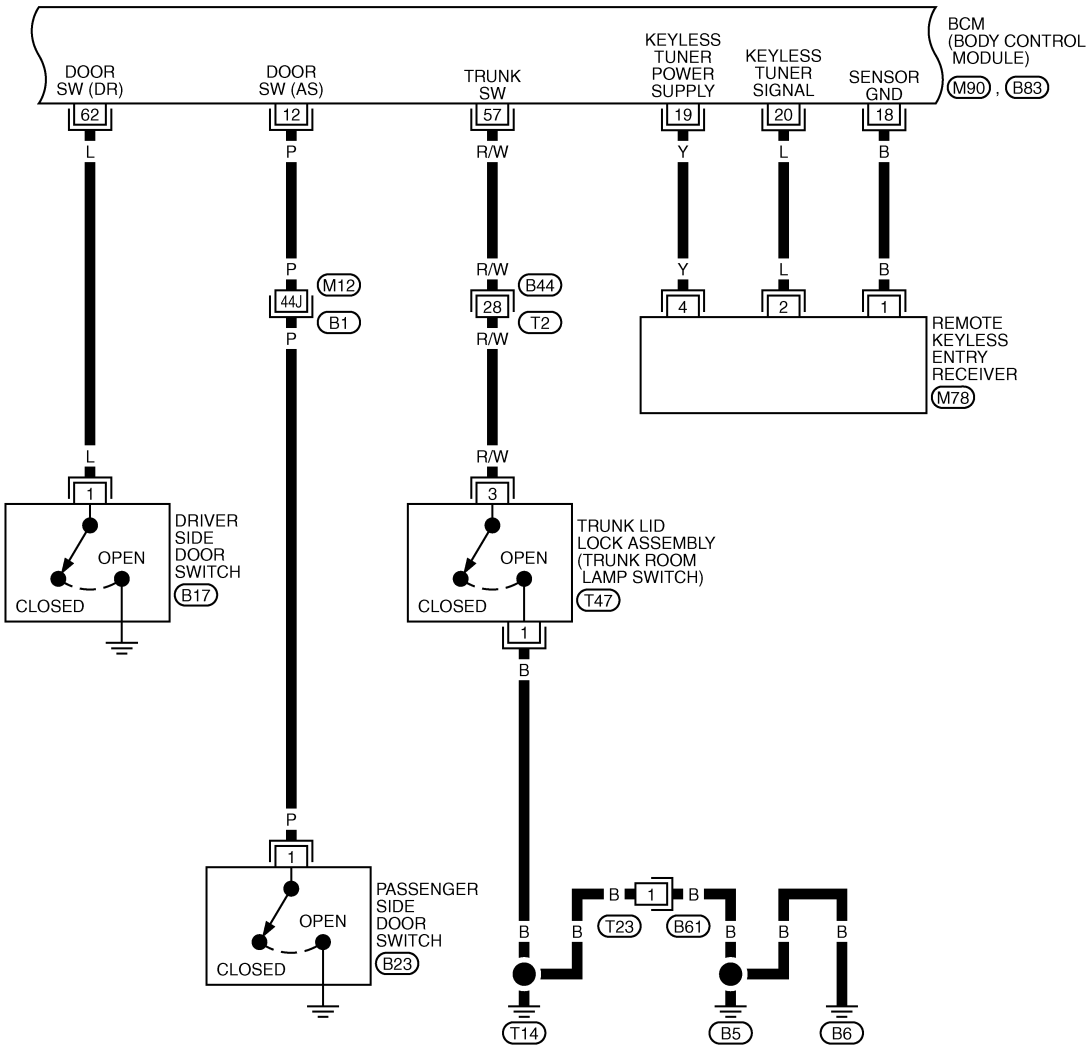


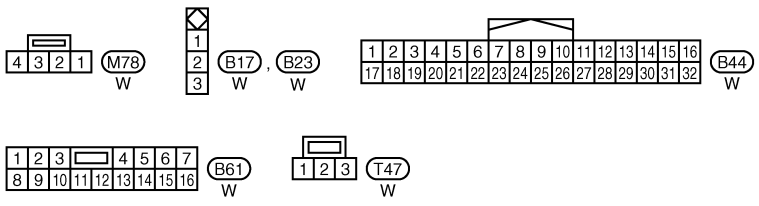


REFER TO THE FOLLOWING.
B1 -SUPER MULTIPLE JUNCTION (SMJ)

TKWT5766E

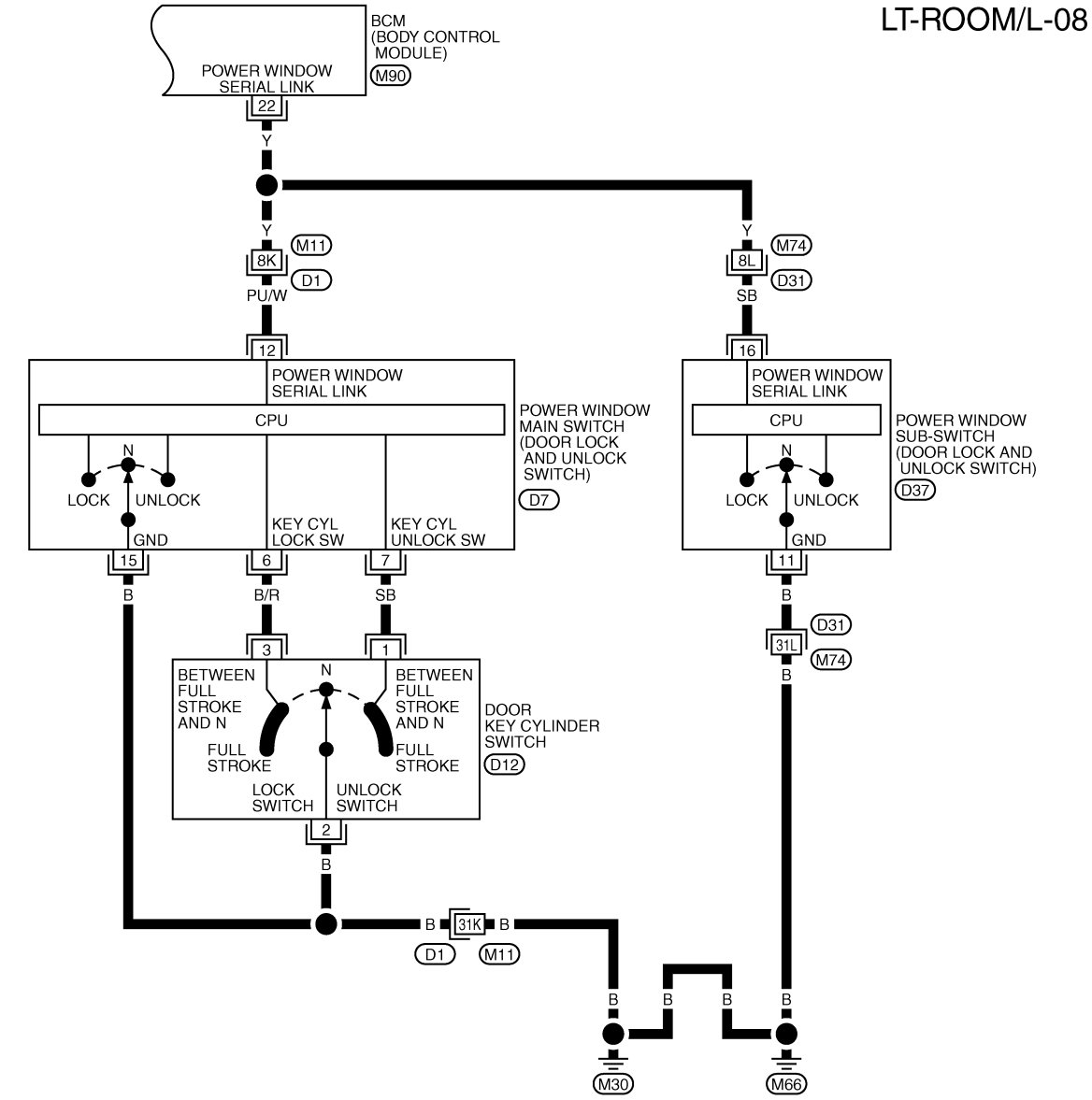
LT-ROOM/L-07





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

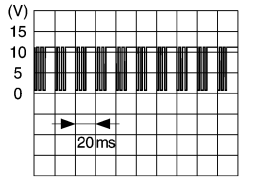
TKWT5592E


LT-ROOM/L-08
BCM
(BODY CONTROL
MODULE)
M90
POWER WINDOW
SERIAL LINK
22
Y
Y
8K
M11
D1
PU/W
12
Y
8L
M74
D31
SB
16
POWER WINDOW
SERIAL LINK
CPU
N
LOCK
UNLOCK
GND
KEY CYL
LOCK SW
KEY CYL
UNLOCK SW
POWER WINDOW
MAIN SWITCH
(DOOR LOCK
AND UNLOCK
SWITCH)
D7
15
6
7
B
B/R
SB
POWER WINDOW
SERIAL LINK
CPU
N
LOCK
UNLOCK
GND
POWER WINDOW
SUB-SWITCH
(DOOR LOCK AND
UNLOCK SWITCH)
D37
11
B
D31
31L
M74
B
3
1
BETWEEN
FULL
STROKE
AND N
FULL
STROKE
N
BETWEEN
FULL
STROKE
AND N
FULL
STROKE
LOCK
SWITCH
UNLOCK
SWITCH
DOOR
KEY CYLINDER
SWITCH
D12
2
B
B
31K
B
D1
M11
B
B
B
B
M30
M66
7 6 5 4 3 2 1
16 15 14 13 12 11 10 9 8
D7
W
D37
W
3 2 1
D12
BR
REFER TO THE FOLLOWING.
D1 , D31 -SUPER MULTIPLE
JUNCTION (SMJ)
M90 -ELECTRICAL UNITS

TKWT4057E

Terminal and Reference Value for BCM

INFOID:0000000001647394

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

*1: Roadster models, *2: Coupe models

How to Proceed with Trouble Diagnosis

INFOID:0000000001647395

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-119, "System Description".
3. Perform preliminary check. Refer to LT-132, "Preliminary Check".
4. Check symptom and repair or replace the cause of malfunction.
5. Does interior room lamp operate normally? If YES, GO TO 6. If NO, GO TO 4.
6. INSPECTION END

Preliminary Check

INFOID:0000000001647396

CHECK POWER SUPPLY AND GROUND CIRCUIT

1.CHECK FUSES AND FUSIBLE LINK

Check for blown fuses and fusible link.

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

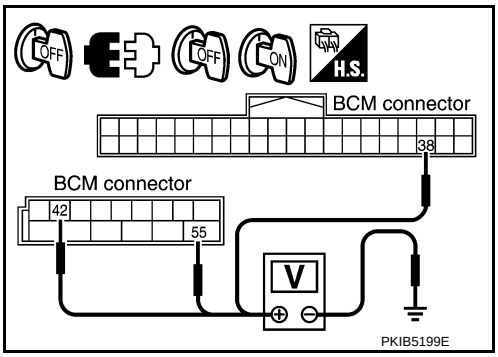
Refer to LT-123, "Wiring Diagram - ROOM/L -".

OK or NG

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

2.CHECK POWER SUPPLY CIRCUIT

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



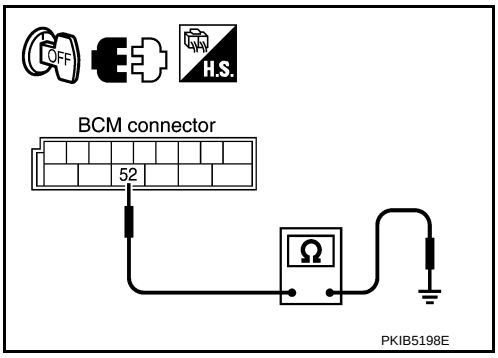
Terminals			Ignition switch position	
(+)		(-)	OFF	ON
BCM connector	Terminal			
M90	38	Ground	Approx. 0 V	Battery voltage
M91	42		Battery voltage	Battery voltage
	55		Battery voltage	Battery voltage

OK or NG

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

3.CHECK GROUND CIRCUIT

Check continuity between BCM and ground.



BCM connector	Terminal	Ground	Continuity
M91	52		Yes

OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

CONSULT-III Function (BCM)

INFOID:0000000001647397

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

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

WORK SUPPORT

Display Item List

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

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

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

DATA MONITOR

Display Item List

Monitor item		Contents
IGN ON SW	“ON/OFF”	Displays “IGN position (ON)/OFF, ACC position (OFF)” judged from ignition switch signal.
KEY ON SW	“ON/OFF”	Displays “Key inserted (ON)/key removed (OFF)” status judged from key switch signal.
DOOR SW - DR	“ON/OFF”	Displays status of driver door as judged from driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - AS	“ON/OFF”	Displays “Door open (ON)/Door closed (OFF)” status, determined from passenger door switch signal.
DOOR SW - RR NOTE	“OFF”	—
DOOR SW - RL NOTE	“OFF”	—
BACK DOOR SW	“ON/OFF”	• Displays status of back door as judged from back door switch signal. (Coupe models) • Displays status of rear trunk hood as judged from trunk lamp switch signal. (Roadster models)
KEY CYL LK - SW	“ON/OFF”	Displays “Door locked (ON) status, determined from key cylinder lock switch in driver door.
KEY CYL UN - SW	“ON/OFF”	Displays “Door unlocked (OFF) status, determined from key cylinder lock switch in driver door.
CDL LOCK SW	“ON/OFF”	Displays “Door locked (ON)/Door unlocked (OFF) status, determined from locking detection switch in driver door.
CDL UNLOCK SW	“ON/OFF”	Displays “Door unlocked (OFF)” status, determined from locking detection switch in passenger door.
KEYLESS LOCK	“ON/OFF”	Displays “Locked (ON)/Other (OFF)” status, determined from lock signal.
KEYLESS UNLOCK	“ON/OFF”	Displays “Unlocked (ON)/Other (OFF)” status, determined from unlock signal.

NOTE:
This item is displayed, but cannot be monitored.

ACTIVE TEST

Display Item List

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

NOTE:

This item is displayed, but cannot be tested.

Map Lamp Control Does Not Operate (Coupe models)

INFOID:0000000001647398

1.CHECK BETWEEN EACH SWITCH AND BCM

1. Select "INT LAMP" of BCM data monitor item.
2. Make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-132, "CONSULT-III Function (BCM)" for switches and their functions.

OK or NG

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

2.CHECK BETWEEN BCM AND MAP LAMP

1. Select "INT LAMP" of BCM active test item.
2. With operating the test item, check the map lamp operation (When map lamp switch is in DOOR position).

Map lamp should operate.

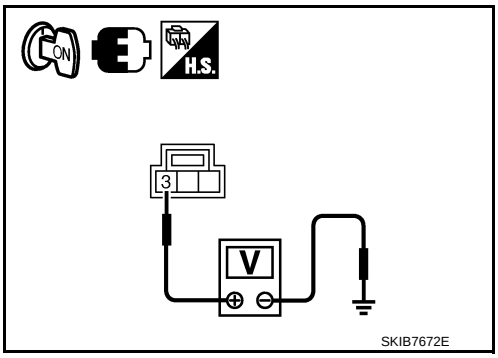
OK or NG

OK >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM".
NG >> GO TO 3.

3.CHECK POWER SUPPLY CIRCUIT

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

Terminal			Voltage (Approx.)
(+)		(-)	
Map lamp connector	Terminal		
R52	3	Ground	Battery voltage



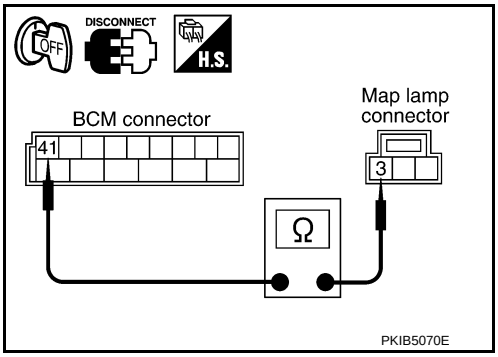
OK or NG

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

4.CHECK MAP LAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and map lamp connector.
3. Check continuity between BCM harness connector and map lamp harness connector.

Terminals				Continuity
BCM		Map lamp		
Connector	Terminal	Connector	Terminal	
M91	41	R52	3	Yes



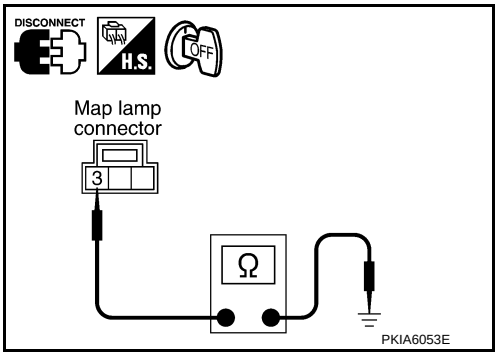
OK or NO

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

5.CHECK SHORT CIRCUIT

Check continuity between map lamp harness connector and ground.

Map lamp connector	Terminal	Ground	Continuity
R52	3		No



OK or NG

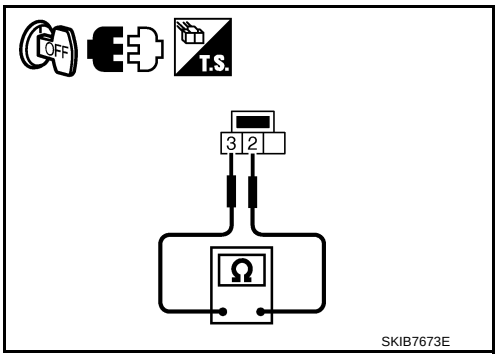
OK >> Replace BCM if map lamp does not work after setting the connector again. Refer to BCS-15, "Removal and Installation of BCM".

NG >> Repair harness or connector.

6. CHECK MAP LAMP

1. Turn ignition switch OFF.
2. Disconnect map lamp connector.
3. Check continuity between map lamp.

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



OK or NG

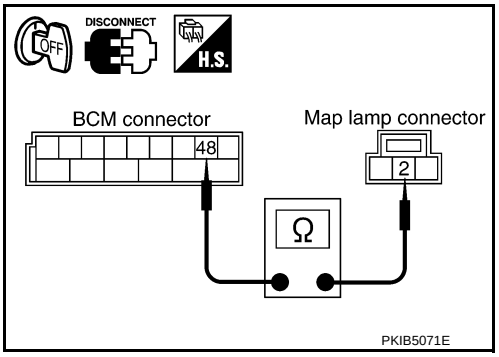
OK >> GO TO 7.

NG >> Replace map lamp.

7. CHECK MAP LAMP CIRCUIT

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

Terminals				Continuity
BCM		Map lamp		
Connector	Terminal	Connector	Terminal	
M91	48	R52	2	Yes



OK or NO

OK >> Replace BCM if map lamp does not work after setting the connector again. Refer to BCS-15, "Removal and Installation of BCM".

NG >> Repair harness or connector.

Map Lamp Control Does Not Operate (Roadster models)

INFOID:0000000001647399

1. CHECK BETWEEN EACH SWITCH AND BCM

1. Select "INT LAMP" of BCM data monitor item.
2. Make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-132, "CONSULT-III Function (BCM)" for switches and their functions.

OK or NG

OK >> GO TO 2.

NG >> Inspect malfunctioning switch system.

2. CHECK BETWEEN BCM AND MAP LAMP

1. Select "INT LAMP" of BCM active test item.
2. With operating the test item, check the map lamp operation (When map lamp switch is in DOOR position).

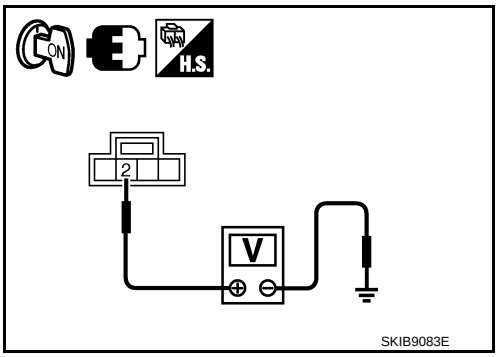
Map lamp should operate.

OK or NG

OK >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM".
NG >> GO TO 3.

3. CHECK BETWEEN BCM AND MAP LAMP

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



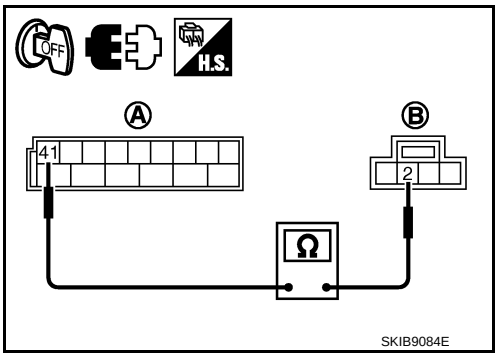
Terminal			Voltage (Approx.)
(+)		(-)	
Map lamp connector	Terminal		
R53	2	Ground	Battery voltage

OK or NG

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

4. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and map lamp connector.
3. Check continuity between BCM harness connector (A) and map lamp harness connector (B).



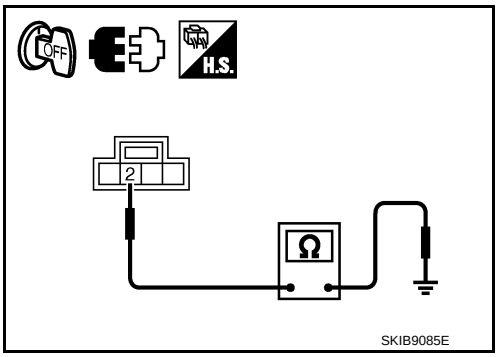
Terminals				Continuity
A		B		
Connector	Terminal	Connector	Terminal	
M91	41	R53	2	Yes

OK or NO

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

5. CHECK SHORT CIRCUIT

Check continuity between map lamp harness connector and ground.



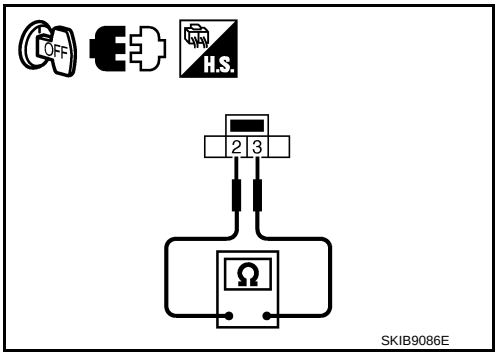
Map lamp connector	Terminal	Ground	Continuity
R53	2		No

OK or NG

OK >> Replace BCM if map lamp does not work after setting the connector again. Refer to BCS-15, "Removal and Installation of BCM".
NG >> Repair harness or connector.

6. CHECK MAP LAMP

1. Turn ignition switch OFF.
2. Disconnect map lamp connector.
3. Check continuity between map lamp.



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

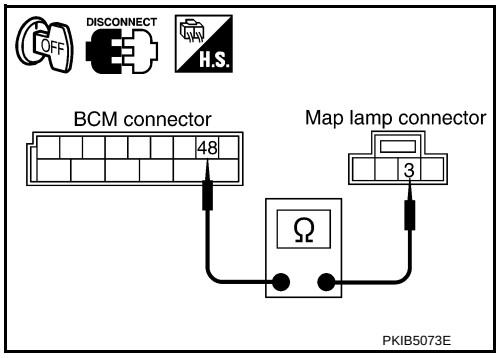
OK or NG

OK >> GO TO 7.

NG >> Replace map lamp.

7. CHECK MAP LAMP CIRCUIT

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



Terminals				Continuity
BCM		Map lamp		
Connector	Terminal	Connector	Terminal	
M91	48	R53	3	Yes

OK or NO

OK >> Replace BCM if map lamp does not work after setting the connector again. Refer to BCS-15, "Removal and Installation of BCM".

NG >> Repair harness or connector.

Ignition Keyhole Illumination Does Not Illuminate

INFOID:0000000001647400

1. CHECK BULB

Check bulb of lamp which does not operate.

OK or NG

OK >> GO TO 2.

NG >> Replace bulb.

2. CHECK BETWEEN EACH SWITCH AND BCM

1. Select "INT LAMP" of BCM data monitor item.
2. Make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-132, "CONSULT-III Function (BCM)" for switches and their functions.

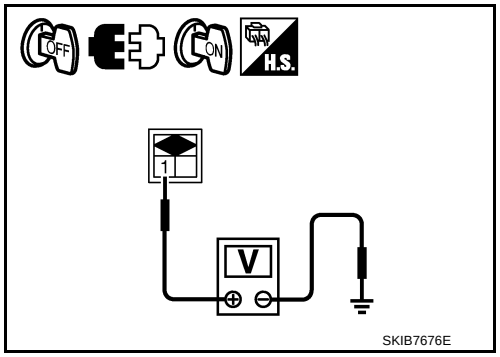
OK or NG

OK >> GO TO 3.

NG >> Inspect malfunctioning switch system.

3. CHECK POWER SUPPLY TO IGNITION KEY HOLE ILLUMINATION

1. Turn ignition switch OFF.
2. Disconnect ignition key hole illumination connector.
3. Turn ignition switch ON.
4. Check voltage between ignition key hole illumination harness connector and ground.



Terminal			Voltage (Approx.)
(+)		(-)	
Ignition key hole illumination connector	Terminal		
M26	1	Ground	Battery voltage

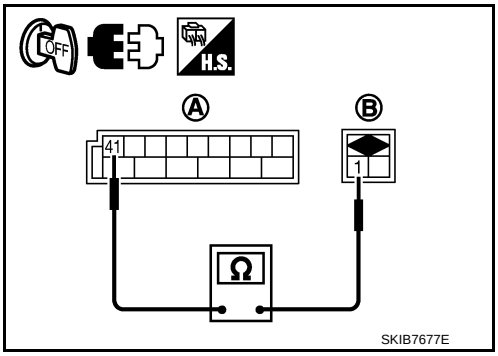
OK or NG

OK >> GO TO 5.

NG >> GO TO 4.

4. CHECK POWER SUPPLY CIRCUIT FOR IGNITION KEY HOLE ILLUMINATION

1. Turn ignition switch OFF.
2. Disconnect BCM connector and key hole illumination connector.
3. Check continuity between BCM harness connector (A) and ignition key hole illumination harness connector (B).



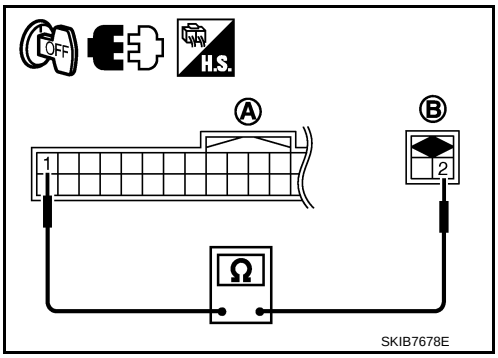
Terminals				Continuity
A		B		
Connector	Terminal	Connector	Terminal	
M91	41	M26	1	Yes

OK or NG

OK >> Replace BCM if ignition key hole illumination does not work after setting the connector again. Refer to BCS-15, "Removal and Installation of BCM".
NG >> Repair harness or connector.

5.CHECK GROUND CIRCUIT FOR IGNITION KEY HOLE ILLUMINATION

1. Turn ignition switch OFF.
2. Disconnect BCM connector and key hole illumination connector.
3. Check continuity between BCM harness connector (A) and ignition key hole illumination harness connector (B).



A		B		Continuity
Connector	Terminal	Connector	Terminal	
M90	1	M26	2	Yes

OK or NG

OK >> Replace BCM if ignition key hole illumination does not work after setting the connector again. Refer to BCS-15, "Removal and Installation of BCM".
NG >> Repair harness or connector.

Luggage Room Lamp Does Not Illuminate (Coupe Models)

INFOID:0000000001647401

1.CHECK BULB

Inspect bulb of luggage room lamp.

OK or NG

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

2.CHECK BETWEEN EACH SWITCH AND BCM

1. Select "LUGGAGE LAMP TEST" of BCM data monitor item.
2. Make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-132, "CONSULT-III Function (BCM)" for switches and their functions.

OK or NG

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

3.CHECK BETWEEN BCM AND LUGGAGE ROOM LAMP

1. Select "LUGGAGE LAMP TEST" of BCM active test item.
2. With operating the test item, check the luggage room lamp operation.

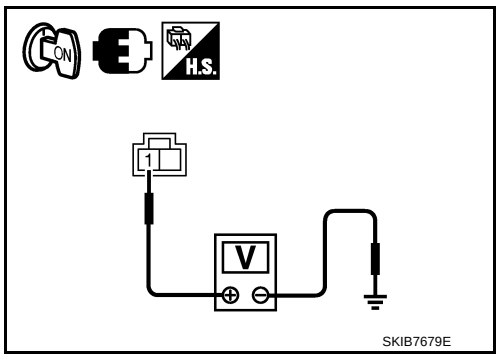
Luggage room lamp should operate.

OK or NG

OK >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM".
NG >> GO TO 4.

4.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between luggage room lamp harness connector and ground.



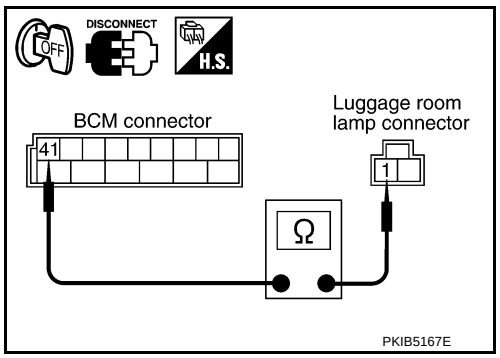
Terminal			Voltage (Approx.)
(+)		(-)	
Luggage room lamp connector	Terminal		
T13	1	Ground	Battery voltage

OK or NG

OK >> GO TO 7.
NG >> GO TO 5.

5. CHECK LUGGAGE ROOM LAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and luggage room lamp connector.
3. Check continuity between BCM harness connector and luggage room lamp harness connector.



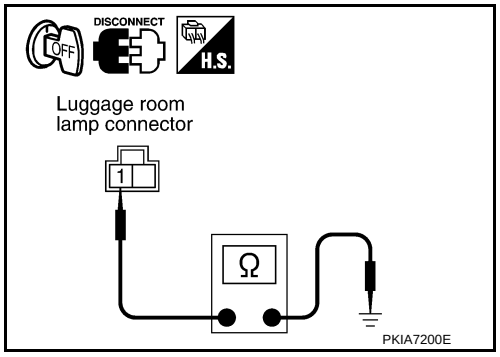
Terminals				Continuity
BCM		Luggage room lamp		
Connector	Terminal	Connector	Terminal	
M91	41	T13	1	Yes

OK or NO

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

6. CHECK SHORT CIRCUIT

Check continuity between luggage room lamp harness connector and ground.



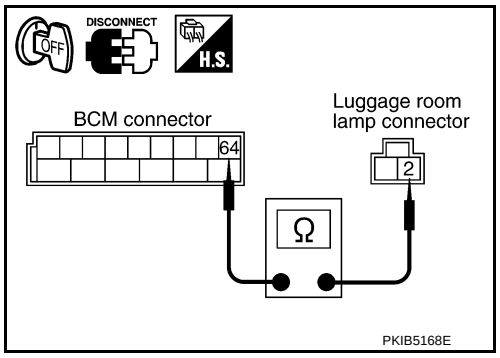
Luggage room lamp connector	Terminal	Ground	Continuity
T13	1		No

OK or NG

OK >> Replace BCM if luggage room lamp does not work after setting the connector again. Refer to BCS-15, "Removal and Installation of BCM".
NG >> Repair harness or connector.

7. CHECK LUGGAGE ROOM LAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check continuity between BCM harness connector and luggage room lamp harness connector.



Terminals				Continuity
BCM		Luggage room lamp		
Connector	Terminal	Connector	Terminal	
B83	64	T13	2	Yes

OK or NO

OK >> Replace BCM if luggage room lamp does not work after setting the connector again. Refer to BCS-15, "Removal and Installation of BCM".

NG >> Repair harness or connector.

Trunk Room Lamp Does Not Illuminate (Roadster Models)

INFOID:0000000001647402

1.CHECK BULB

Inspect bulb of trunk room lamp.

OK or NG

OK >> GO TO 2.
NG >> Replace map lamp.

2.CHECK BETWEEN EACH SWITCH AND BCM

1. Select "LUGGAGE LAMP TEST" of BCM data monitor item.
2. Make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-132, "CONSULT-III Function (BCM)" for switches and their functions.

OK or NG

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

3.CHECK BETWEEN BCM AND TRUNK ROOM LAMP

1. Select “BCM” on CONSULT-III. Select “LUGGAGE LAMP TEST” active test.
2. With operating the test item, check the trunk room lamp operation.

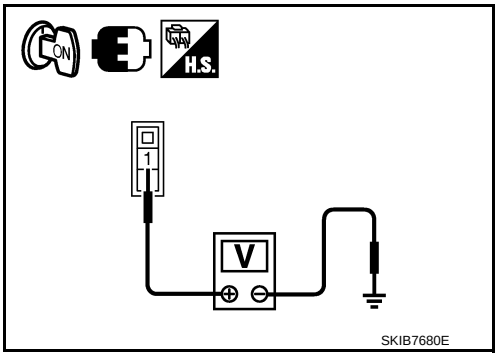
Trunk room lamp should operate.

OK or NG

OK >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM".
NG >> GO TO 4.

4.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between trunk room lamp harness connector and ground.



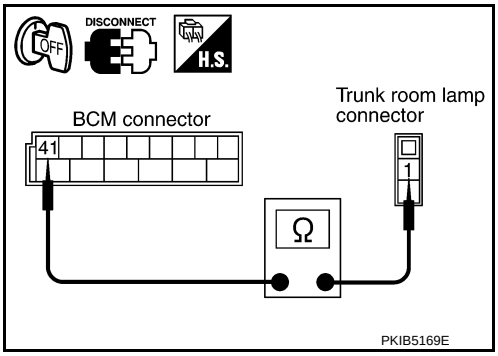
Terminal			Voltage (Approx.)
(+)		(-)	
Trunk room lamp connector	Terminal		
T29	1	Ground	Battery voltage

OK or NG

OK >> GO TO 7.
NG >> GO TO 5.

5.CHECK TRUNK ROOM LAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and trunk room lamp connector.
3. Check continuity between BCM harness connector and trunk room lamp harness connector.



Terminals				Continuity
BCM		Trunk room lamp		
Connector	Terminal	Connector	Terminal	
M91	41	T29	1	Yes

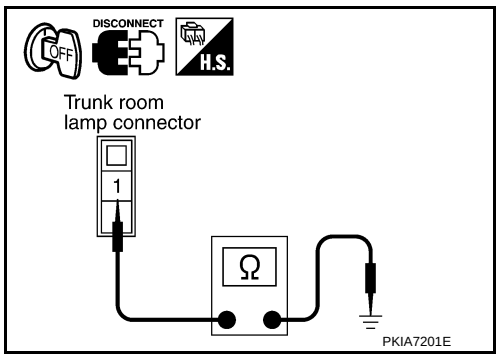
OK or NO

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

6. CHECK SHORT CIRCUIT

Check continuity between trunk room lamp harness connector and ground.

Trunk room lamp connector	Terminal	Ground	Continuity
T29	1		No



OK or NG

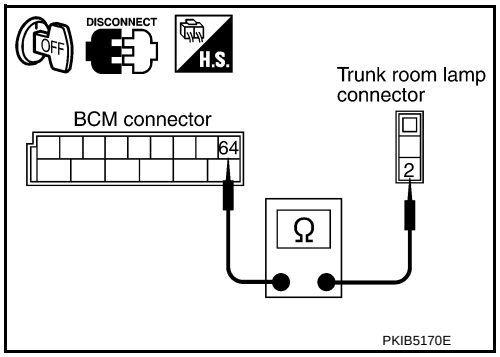
OK >> Replace BCM if trunk room lamp does not work after setting the connector again. Refer to BCS-15, "Removal and Installation of BCM".

NG >> Repair harness or connector.

7. CHECK TRUNK ROOM LAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check continuity between BCM harness connector and trunk room lamp harness connector.

Terminals				Continuity
BCM		Trunk room lamp		
Connector	Terminal	Connector	Terminal	
B83	64	T29	2	Yes



OK or NO

OK >> Replace BCM if trunk room lamp does not work after setting the connector again. Refer to BCS-15, "Removal and Installation of BCM".

NG >> Repair harness or connector.

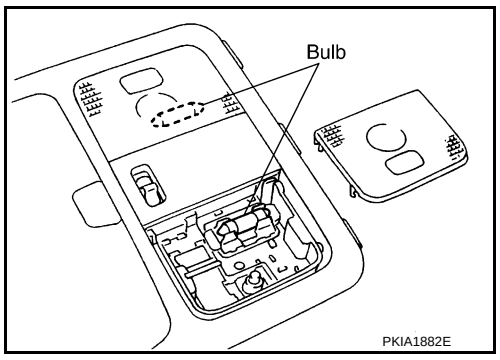
Bulb Replacement

INFOID:0000000001647403

MAP LAMP

Coupe Models

1. Open driver and passenger window, and then disconnect battery cable from the negative terminal.
   CAUTION:
   After battery cables are disconnected, never open/close driver and/or passenger door with the window in the full up position. Automatic window adjusting function will not work and side roof panel may be damaged.
2. Remove lens using clip driver or suitable tool.
3. Remove bulb.



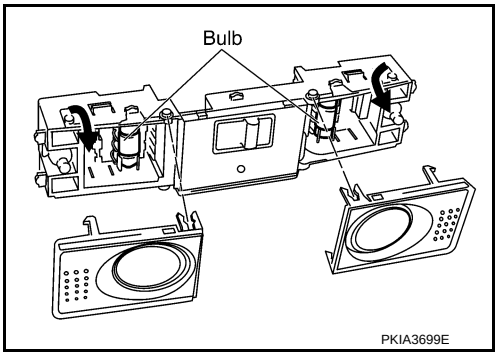
Map lamp : 12V - 8W

4. Installation is the reverse order of removal.

Roadster Models

1. Open driver and passenger window, and then disconnect battery cable from the negative terminal.
   CAUTION:
   After battery cables are disconnected, never open/close driver and/or passenger door with the window in the full up position. Automatic window adjusting function will not work and side roof panel may be damaged.
2. Remove lens using clip driver or suitable tool.
3. Remove bulb.

Map lamp : 12V - 8W



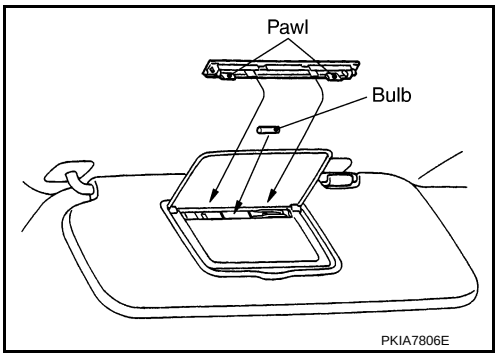
4. Installation is the reverse order of removal.

VANITY MIRROR LAMP

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

Vanity mirror lamp : 12V - 1.32W

3. Installation is the reverse order of removal.



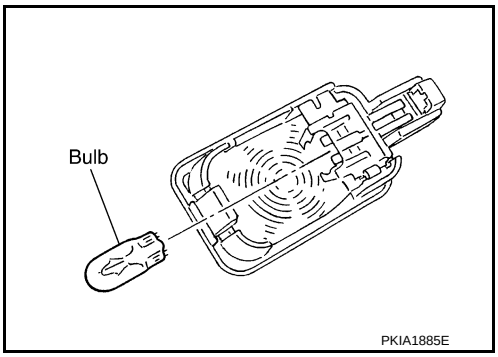
LUGGAGE ROOM LAMP & TRUNK ROOM LAMP

Luggage Room Lamp (Coupe Models)

1. Remove luggage room lamp. Refer to LT-143, "Removal and Installation".
2. Remove bulb.

Luggage room lamp : 12V - 5W

3. Installation is the reverse order of removal.

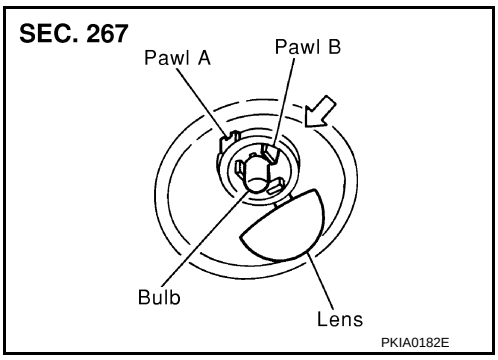


Trunk Room Lamp (Roadster Models)

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

Trunk room lamp : 12V - 3.4W

4. Installation is the reverse order of removal.

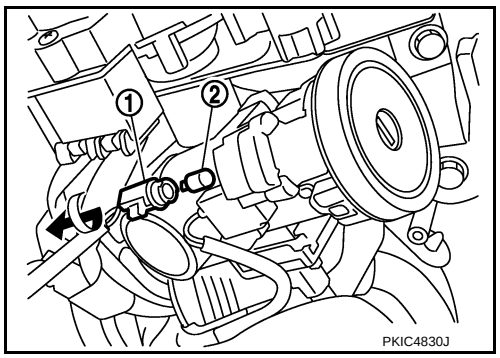


IGNITION KEY HOLE ILLUMINATION

1. Remove instrument lower driver panel. Refer to IP-11.
2. Turn bulb socket to left to release lock and remove bulb socket (1).
3. Remove ignition key illumination bulb (2) from its socket.

Ignition key hole illumination : 12V - 1.4W

4. Installation is the reverse order of removal.



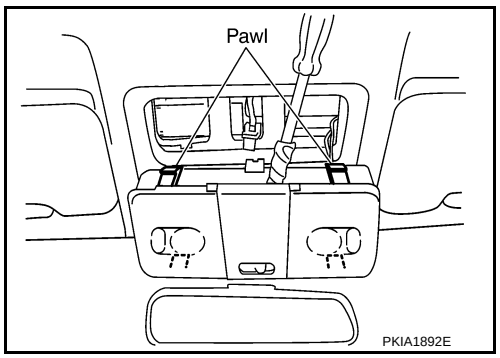
Removal and Installation

INFOID:0000000001647404

MAP LAMP

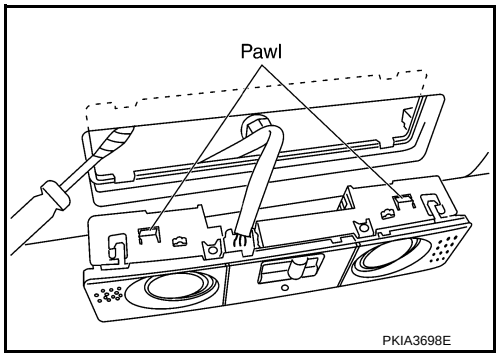
Coupe Models

1. Insert a clip driver or suitable tool and disengage pawl fittings of map lamp.
2. Disconnect map lamp connector and remove map lamp.
3. Installation is the reverse order of removal.



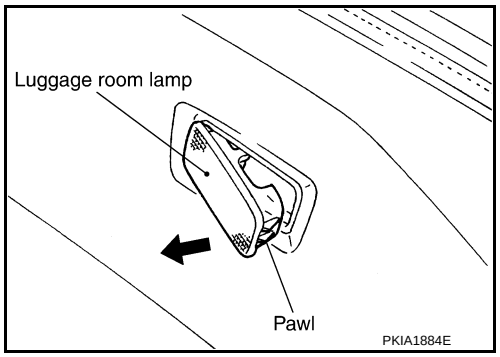
Roadster Models

1. Insert a clip driver or suitable tool and disengage pawl fittings of map lamp.
2. Disconnect map lamp connector and remove map lamp.
3. Installation is the reverse order of removal.



LUGGAGE ROOM LAMP

1. Pull out luggage room lamp in direction shown by the arrow in the figure.
2. Disconnect luggage room lamp connector.
3. Installation is the reverse order of removal.



ILLUMINATION

System Description

INFOID:0000000001647405

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

OUT LINE

Power is supplied at all times
- through 10A fuse (No.71, located in IPDM E/R)
- to tail lamp relay, located in IPDM E/R, and
- to CPU located in IPDM E/R,
- through 15A fuse (No.78, located in IPDM E/R)
- to CPU located in IPDM E/R.

Power is also supplied at all times
- through 40A fusible link (letter F, located in fuse, fusible link and relay box)
- to BCM terminal 55,
- through 10A fuse [No.18, located in fuse block (J/B)]
- to BCM terminal 42,
- through 10A fuse [No.19, located in fuse block (J/B)]
- to unified meter and A/C amp. terminal 21,
- through 10A fuse [No.19, located in fuse block (J/B)]
- to combination meter terminal 24.

With ignition switch in the ON or START position, power is supplied
- to CPU located in IPDM E/R,
- through 10A fuse [No.1, located in fuse block (J/B)]
- to BCM terminal 38,
- through 10A fuse [No.12, located in fuse block (J/B)]
- to unified meter and A/C amp. terminal 22, and
- to NAVI control unit terminal 63 (With navigation system),
- through 10A fuse [No.14, located in fuse block (J/B)]
- to combination meter terminal 23.

With ignition switch in the ACC or ON position, power is supplied
- through 10A fuse [No.6, located in fuse block (J/B)]
- to BCM terminal 11.

Ground is supplied
- to BCM terminal 52
- through grounds M30 and M66,
- to IPDM E/R terminals 38 and 60
- through grounds E17, E43 and B102 (with VDC system, navigation system or telephone)
- through grounds E17, E43 and F152 (without VDC system, navigation system and telephone),
- to unified meter and A/C amp. terminals 29 and 30
- through grounds M30 and M66,
- to combination meter terminals 10, 11 and 12
- through grounds M30 and M66,
- to NAVI control unit terminal 1 (With navigation system)
- through ground B115 (With navigation system).

ILLUMINATION OPERATION BY LIGHTING SWITCH

With the lighting switch in the 1ST or 2ND position, the BCM receives input signal requesting illumination lamps to illuminate. This input signal is communicated to the IPDM E/R through the CAN communication lines. CPU located in the IPDM E/R controls tail lamp relay coil, which, when energized, directs power
- through terminal 22 of IPDM E/R
- to NAVI control unit terminal 61 (With navigation system)
- to NAVI switch terminal 2 (With navigation system)
- to audio unit terminal 8.
- to combination switch (spiral cable) terminal 26 (with steering switch)
- to soft top switch (illumination) terminal 5 (Roadster model)

- to A/T device (A/T illumination) terminal 3 (With A/T)
- to VDC off switch (illumination) terminal 3 (With VDC)
- to TCS off switch (illumination) terminal 3 (With TCS)
- to map lamp (illumination) terminal 4 (Roadster models)
- to hazard switch (illumination) terminal 3
- to heated seat switch (driver side) (illumination) terminal 5 (With hated seat)
- to heated seat switch (passenger side) (illumination) terminal 5 (With heated seat)
- to bottle holder illumination (driver side) terminal 1
- to bottle holder illumination (passenger side) terminal 1
- to cup holder illumination terminal 1
- to luggage floor box lamp terminal 1.

Ground is supplied at all times

- to NAVI control unit terminal 1 (with navigation system)
- through ground B115,
- to NAVI switch terminal 3 (With navigation system)
- to audio unit terminal 7
- to combination switch (spiral cable) terminal 27 (with steering switch)
- to soft top switch (illumination) terminal 6 (Roadster models)
- to A/T device (A/T illumination) terminal 5 (With A/T)
- to VDC off switch (illumination) terminal 4 (With VDC)
- to TCS off switch (illumination) terminal 4 (With TCS)
- to hazard switch (illumination) terminal 4
- to heated seat switch (driver side) (illumination) terminal 6 (With heated seat)
- to heated seat switch (passenger side) (illumination) terminal 6 (With heated seat)
- to bottle holder illumination (driver side) terminal 2, and
- to bottle holder illumination (passenger side) terminal 2
- through combination meter terminal 18,
- to map lamp (illumination) terminal 1 (Roadster models)
- to cup holder illumination terminal 2
- through grounds M30 and M66,
- to luggage floor box lamp terminal 2
- through grounds B5, B6, D105 and T14 (Coupe model)
- through grounds B5, B6 and T14 (Roadster model).

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

CAN Communication System Description

INFOID:0000000001647406

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

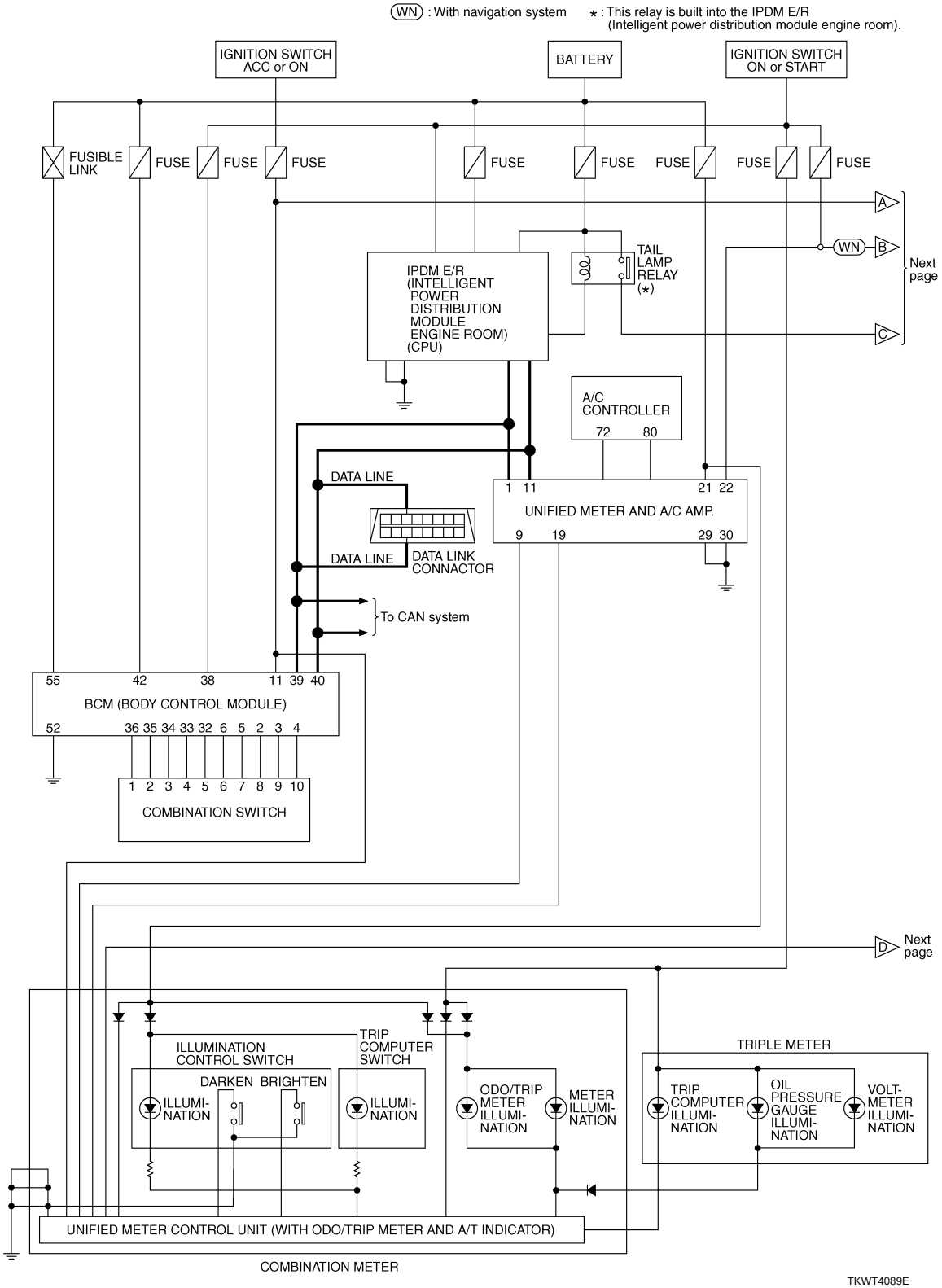
CAN Communication Unit

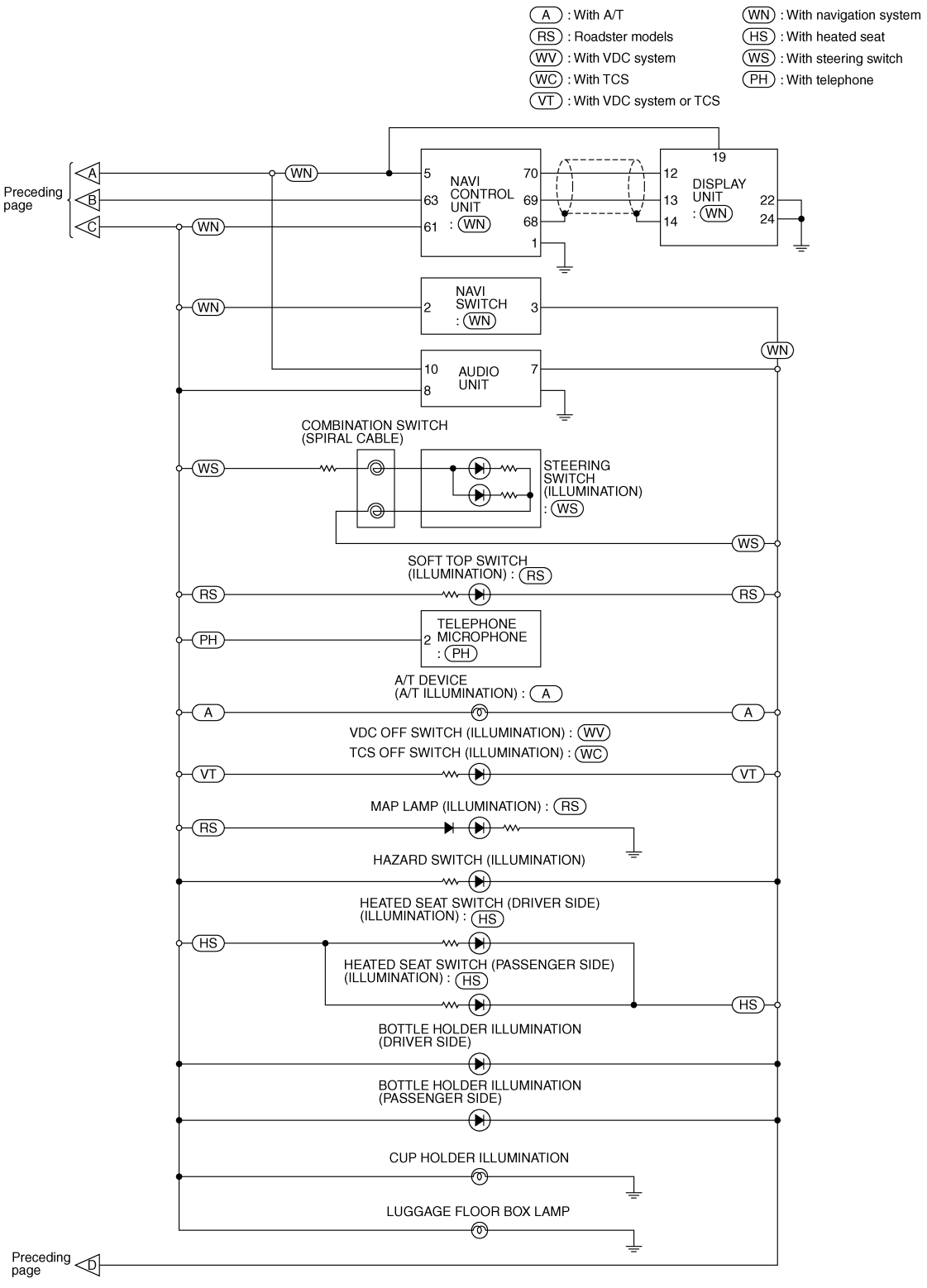
INFOID:0000000001647407

Refer to LAN-41, "CAN System Specification Chart".

Schematic

INFOID:0000000001647408



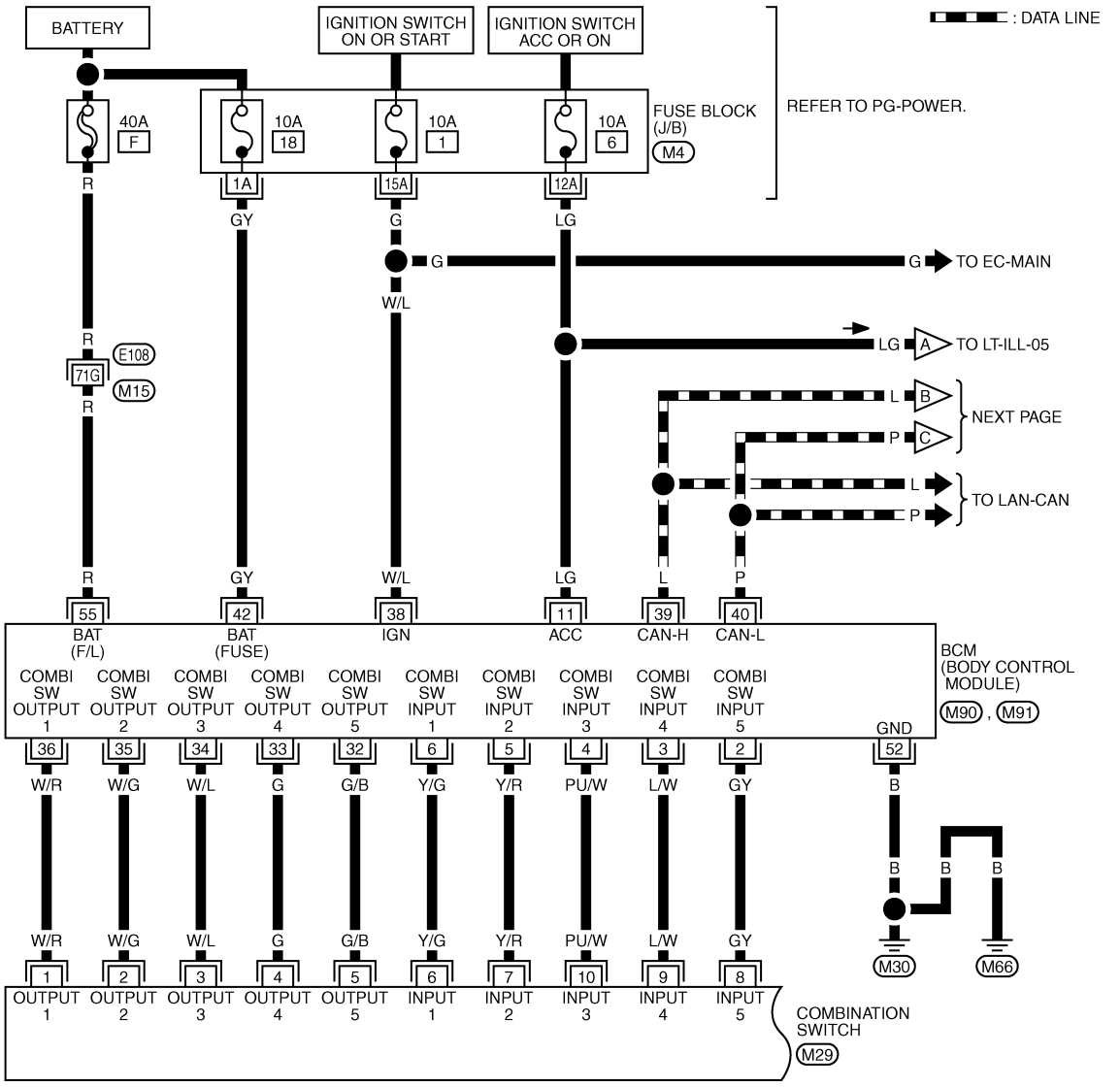

A : With A/T
RS : Roadster models
WV : With VDC system
WC : With TCS
VT : With VDC system or TCS
WN : With navigation system
HS : With heated seat
WS : With steering switch
PH : With telephone
Preceding page
NAVI CONTROL UNIT : WN
DISPLAY UNIT : WN
NAVI SWITCH : WN
AUDIO UNIT
COMBINATION SWITCH (SPIRAL CABLE)
STEERING SWITCH (ILLUMINATION) : WS
SOFT TOP SWITCH (ILLUMINATION) : RS
TELEPHONE MICROPHONE : PH
A/T DEVICE (A/T ILLUMINATION) : A
VDC OFF SWITCH (ILLUMINATION) : WV
TCS OFF SWITCH (ILLUMINATION) : WC
MAP LAMP (ILLUMINATION) : RS
HAZARD SWITCH (ILLUMINATION)
HEATED SEAT SWITCH (DRIVER SIDE) (ILLUMINATION) : HS
HEATED SEAT SWITCH (PASSENGER SIDE) (ILLUMINATION) : HS
BOTTLE HOLDER ILLUMINATION (DRIVER SIDE)
BOTTLE HOLDER ILLUMINATION (PASSENGER SIDE)
CUP HOLDER ILLUMINATION
LUGGAGE FLOOR BOX LAMP
Preceding page

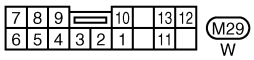
TKWT5767E

Wiring Diagram - ILL -

INFOID:0000000001647409

LT-ILL-01





REFER TO THE FOLLOWING.

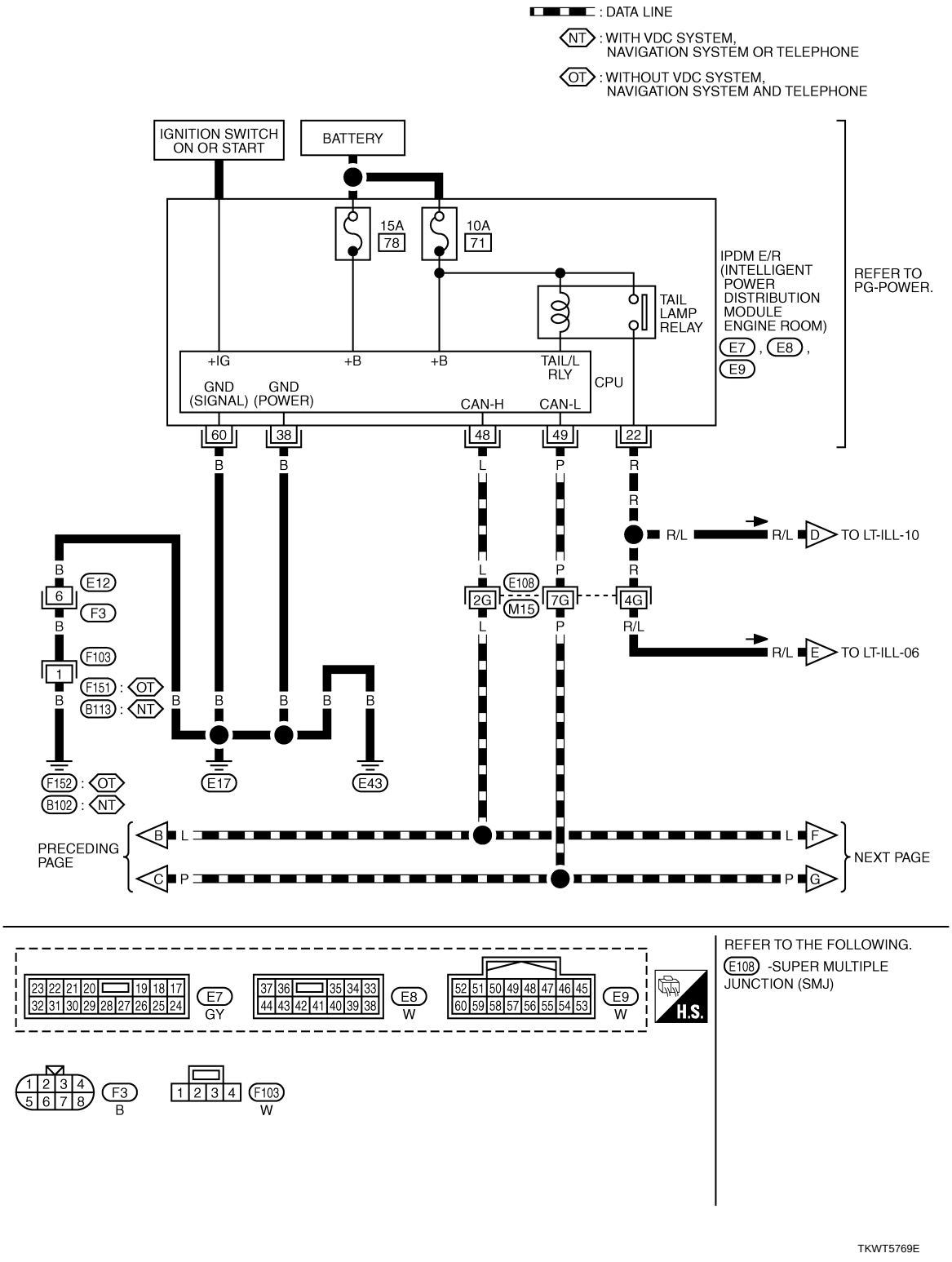
E108 -SUPER MULTIPLE JUNCTION (SMJ)

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

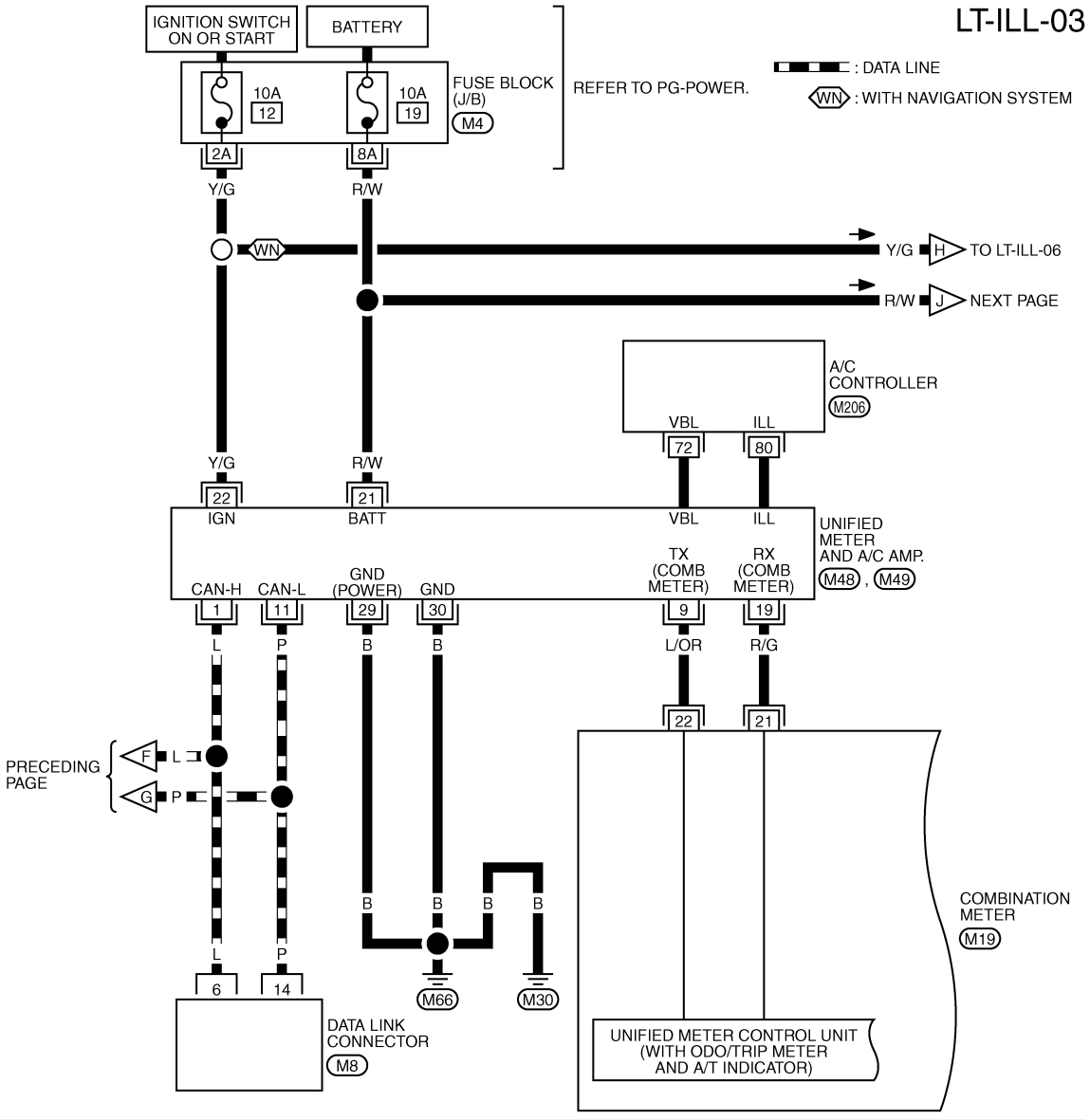
M90 , M91 -ELECTRICAL UNITS

TKWT5768E

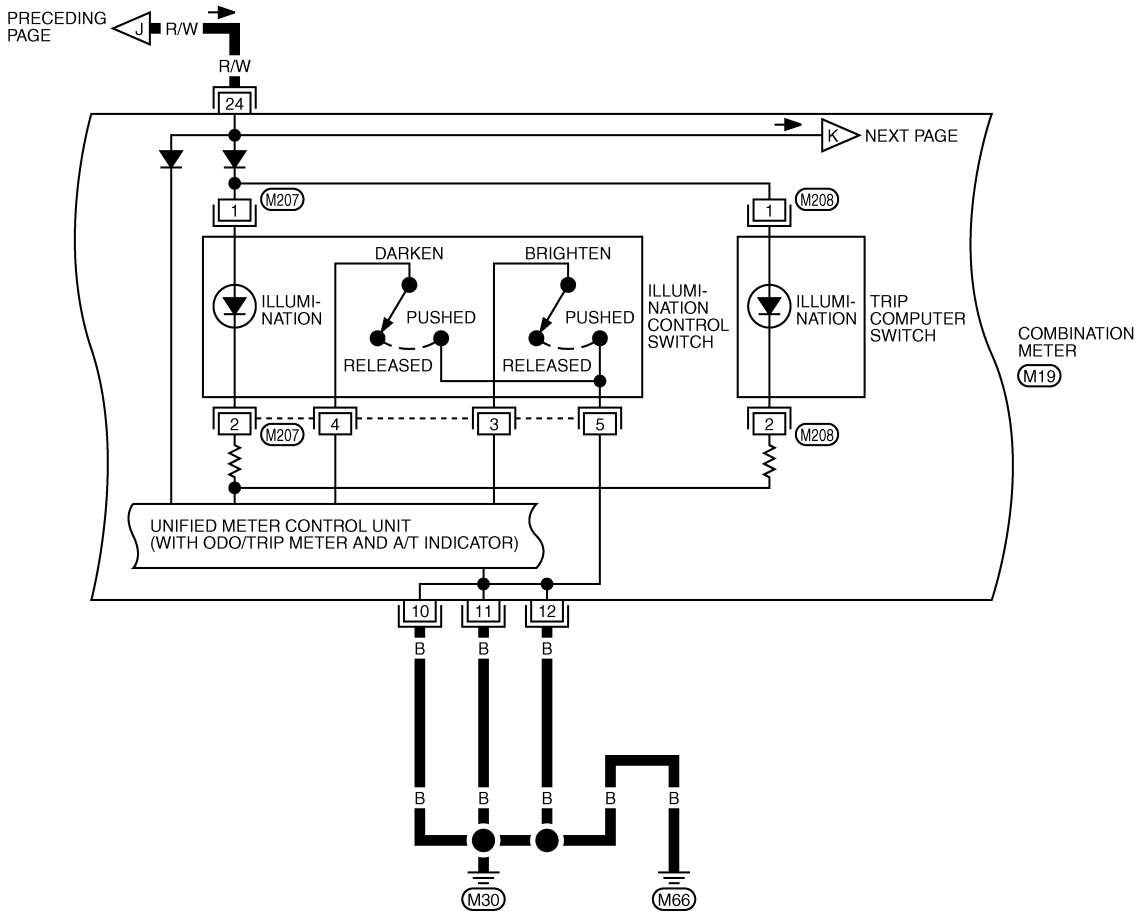
LT-ILL-02

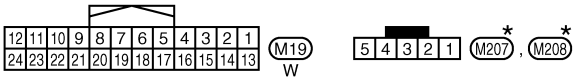


TKWT5769E


LT-ILL-03
IGNITION SWITCH ON OR START
BATTERY
10A 12
10A 19
FUSE BLOCK (J/B) M4
REFER TO PG-POWER.
: DATA LINE
WN : WITH NAVIGATION SYSTEM
2A
8A
Y/G
R/W
WN
Y/G H TO LT-ILL-06
R/W J NEXT PAGE
A/C CONTROLLER M206
VBL 72
ILL 80
Y/G 22
R/W 21
IGN
BATT
VBL
ILL
UNIFIED METER AND A/C AMP. M48, M49
CAN-H 1
CAN-L 11
GND (POWER) 29
GND 30
TX (COMB METER) 9
RX (COMB METER) 19
L
P
B
B
L/OR
R/G
22
21
PRECEDING PAGE
F L
G P
COMBINATION METER M19
L
P
6
14
M66
M30
DATA LINK CONNECTOR M8
UNIFIED METER CONTROL UNIT (WITH ODO/TRIP METER AND A/T INDICATOR)
M8 W
M19 W
M48 GY
M49 GY
H.S.
M206
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.
REFER TO THE FOLLOWING.
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT2296E

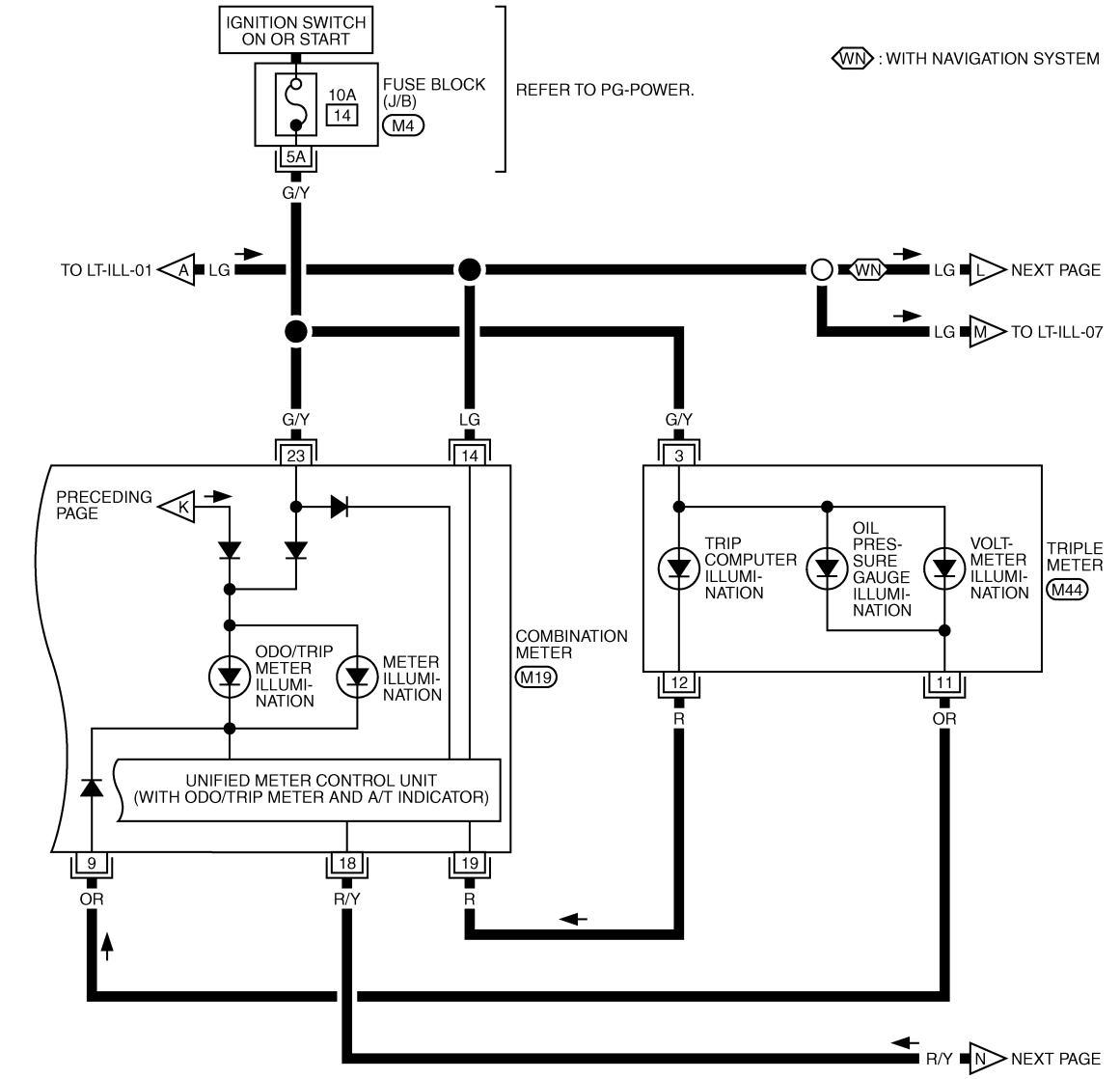


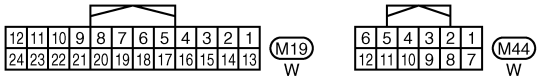


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT4093E

LT-ILL-05

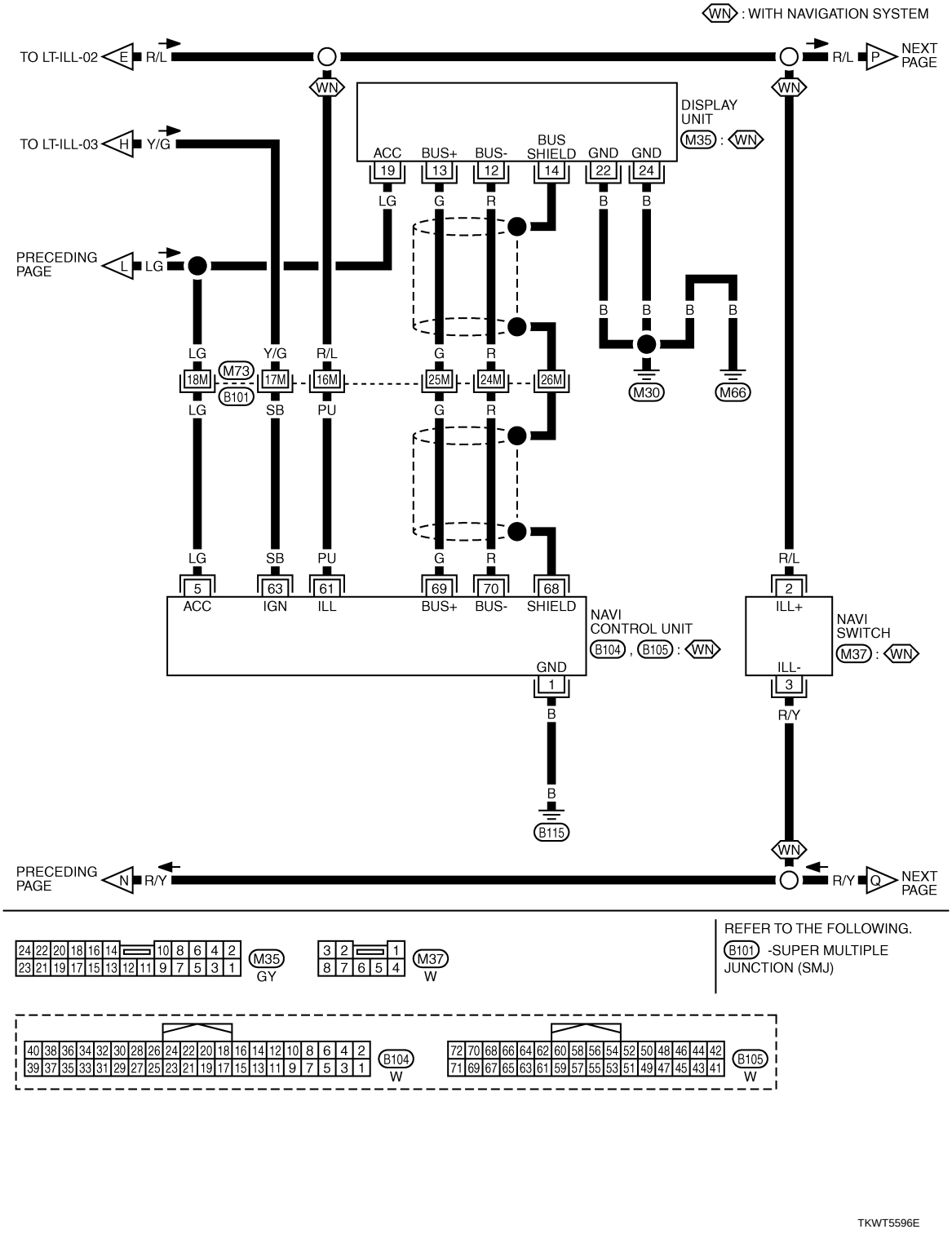




REFER TO THE FOLLOWING.
M4 -FUSE BLOCK-JUNCTION BOX (J/B)

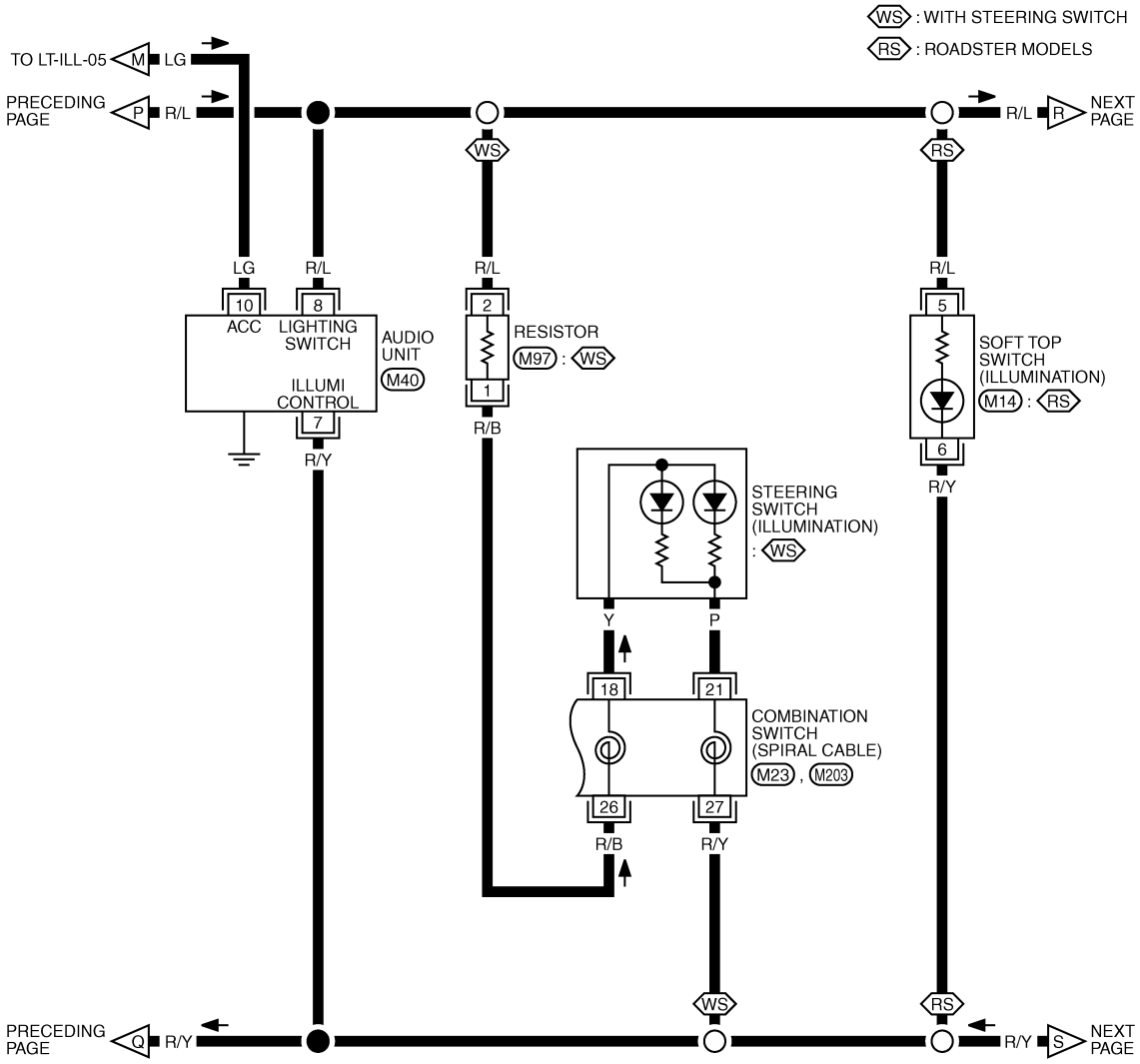
TKWT1830E

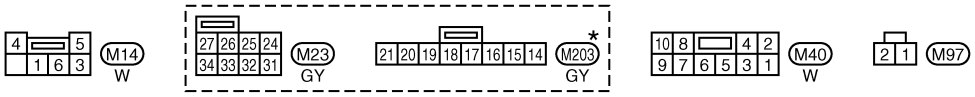
LT-ILL-06



TKWT5596E

LT-ILL-07

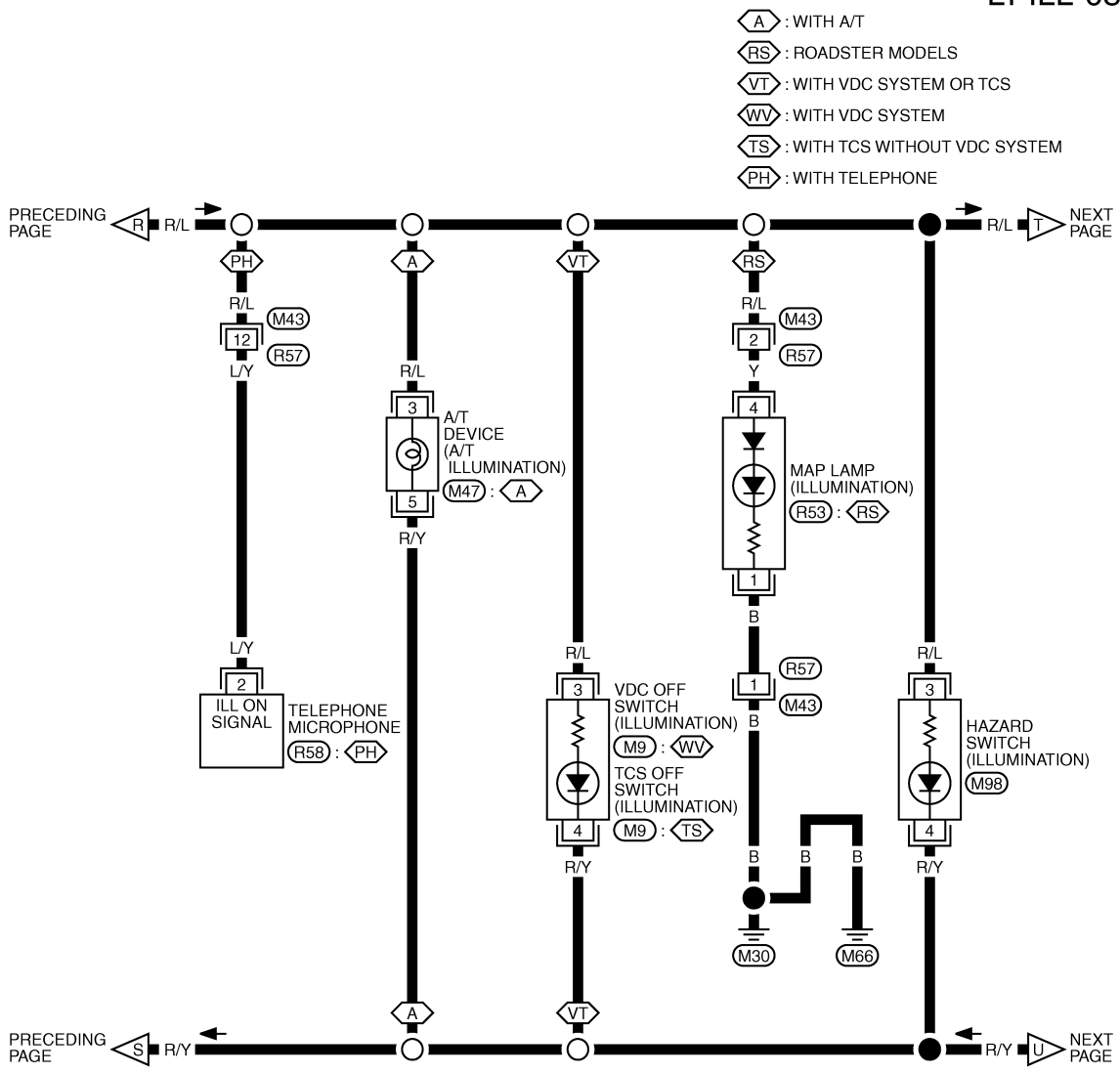




*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

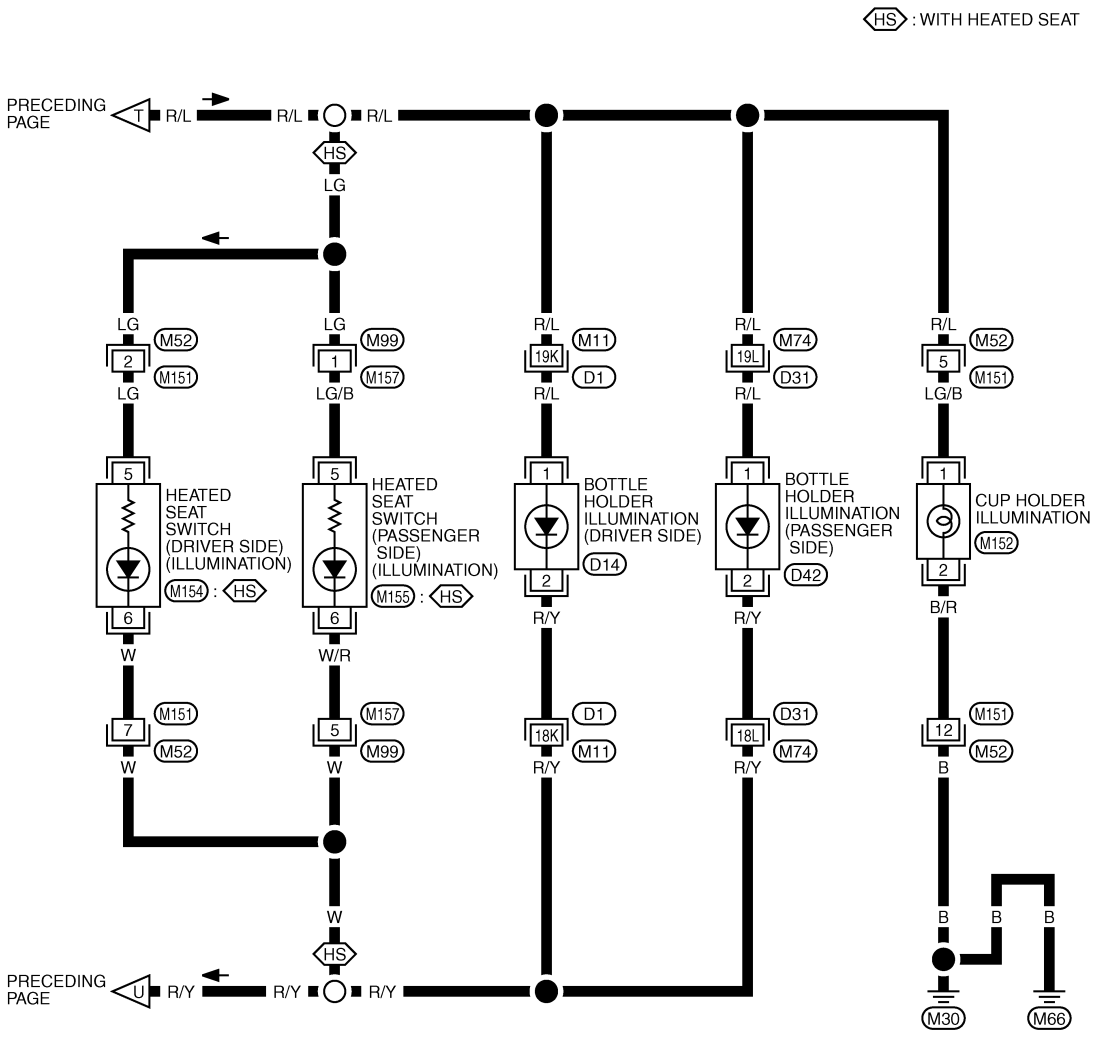
TKWT4095E

LT-ILL-08



TKWT5771E

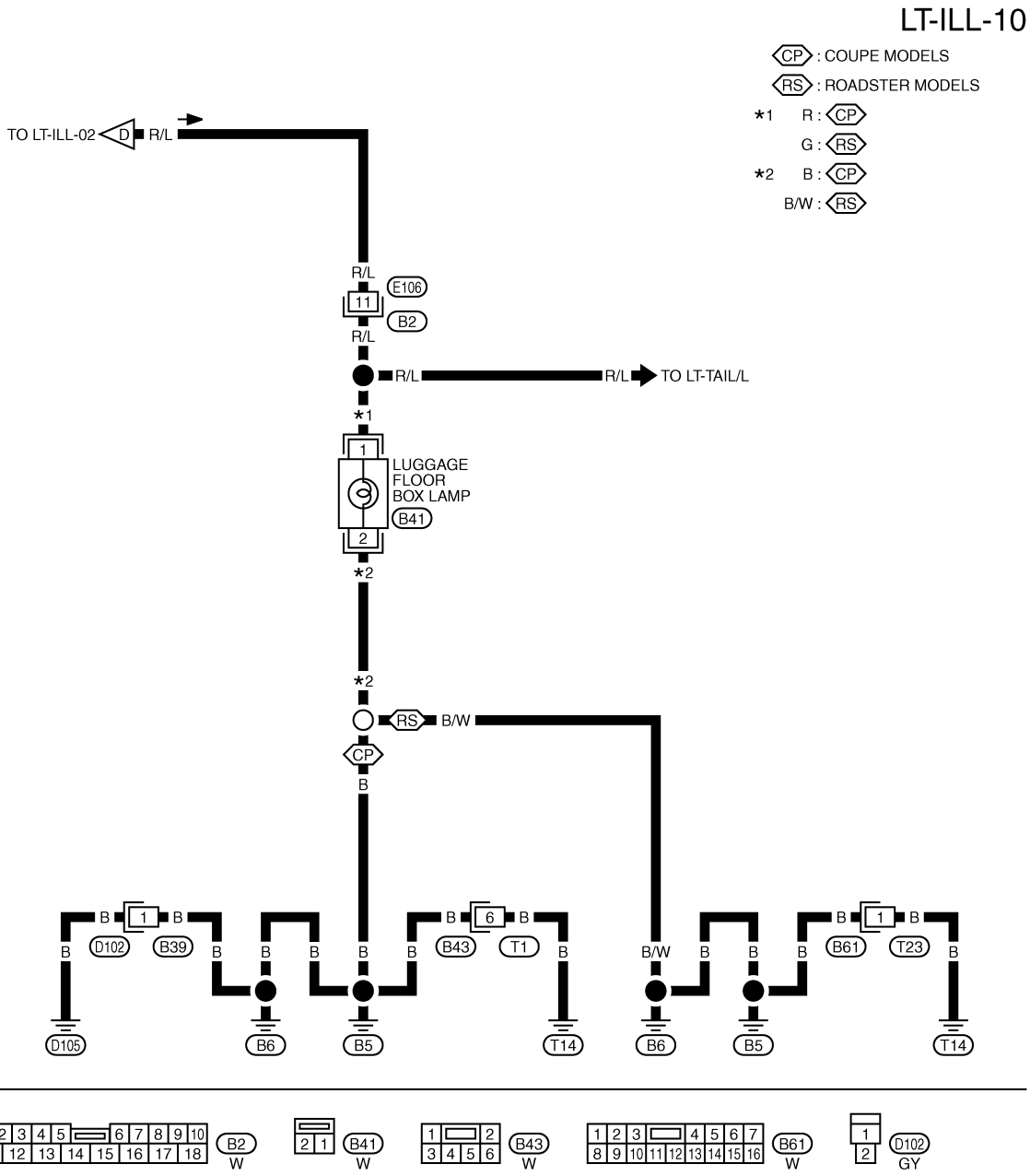
LT-ILL-09



M52 W
M99 W
M152 W
M154 , M155 W BR
D14 , D42 GY GY

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

TKWT4097E



TKWT5772E

Bulb Replacement

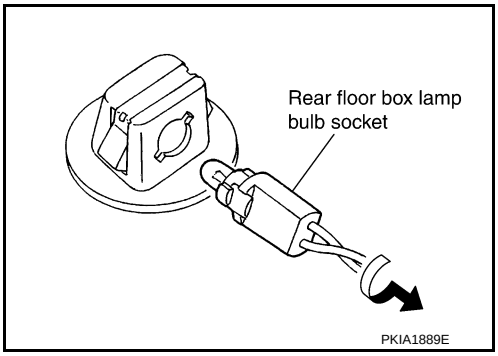
INFOID:0000000001647410

LUGGAGE FLOOR BOX LAMP

1. Remove luggage floor box lamp. Refer to
2. Turn bulb socket counterclockwise to release lock and remove it.

Luggage floor box lamp : 12 V - 1.4W

3. Installation is the reverse order of removal.

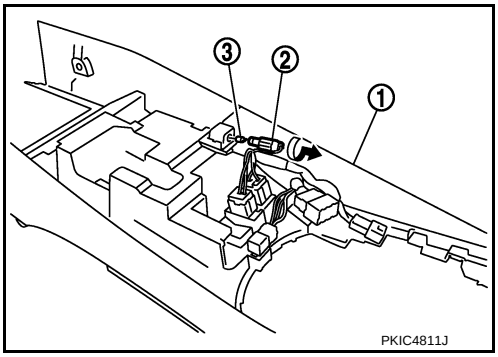


CUP HOLDER ILLUMINATION

1. Remove center console assembly (1). Refer to IP-11.
2. Turn bulb socket counterclockwise to release lock and remove bulb socket (2).
3. Remove cup holder illumination bulb (3) from its socket.

Cup holder illumination : 12V - 1.1W

4. Installation is the reverse order of removal.

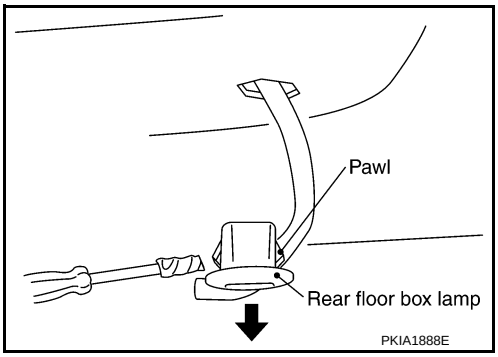


Removal and Installation

INFOID:0000000001647411

LUGGAGE FLOOR BOX LAMP

1. Pull out rear floor box lamp using screwdriver or similar tool.
2. Installation is the reverse order of removal.



BULB SPECIFICATIONS

Headlamp

INFOID:0000000001647412

Item	Wattage (W)
High / Low	35 (D2R)

Exterior Lamp

INFOID:0000000001647413

Item		Wattage (W)
Front combination lamp	Front turn signal lamp/—	28/8 (amber)
	Parking lamp	5
	Front side marker lamp	LED
Rear combination lamp	Stop/Tail lamp	LED
	Rear turn signal lamp	21 (amber)
	Back-up lamp	21
	Rear side marker lamp	LED
License plate lamp		5
High-mounted stop lamp		LED

Interior Lamp/Illumination

INFOID:0000000001647414

Item	Wattage (W)
Luggage floor box lamp	1.4
Cup holder illumination lamp	1.1
Bottle holder illumination lamp	LED
Map lamp	8
Luggage room lamp	5
Trunk room lamp	3.4
Vanity mirror lamp	1.32
Ignition key hole illumination lamp	1.4