SECTION EXL
EXTERIOR LIGHTING SYSTEM

CONTENTS

XENON TYPE

BASIC INSPECTION 7

DIAGNOSIS AND REPAIR WORKFLOW 7
Work Flow 7

INSPECTION AND ADJUSTMENT 9

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT 9
ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description 9
ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement 9

CONFIGURATION (HEADLAMP LEVELIZER) 9
CONFIGURATION (HEADLAMP LEVELIZER) : Description 9
CONFIGURATION (HEADLAMP LEVELIZER) : Special Repair Requirement 9

SENSOR INITIALIZE 9
SENSOR INITIALIZE : Description 10
SENSOR INITIALIZE : Special Repair Requirement (HEADLAMP AIMING CONTROL SYSTEM) 10

FUNCTION DIAGNOSIS 11

HEADLAMP SYSTEM 11
System Diagram 11
System Description 11
Component Parts Location 12
Component Description 12

AUTO LIGHT SYSTEM 13
System Diagram 13
System Description 13
Component Parts Location 14
Component Description 14

HEADLAMP AIMING CONTROL SYSTEM (AUTO) 15
System Diagram 15
System Description 15
Component Parts Location 16
Component Description 16

FRONT FOG LAMP SYSTEM 17
System Diagram 17
System Description 17
Component Parts Location 18
Component Description 18

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM 19
System Diagram 19
System Description 19
Component Parts Location 20
Component Description 20

PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM 21
System Diagram 21
System Description 21
Component Parts Location 22
Component Description 22

REAR FOG LAMP SYSTEM 23
System Diagram 23
System Description 23
Component Parts Location 24
Component Description 24

EXTERIOR LAMP BATTERY SAVER SYSTEM 25
System Diagram 25
System Description 25
Component Parts Location 26
Component Description 26

DIAGNOSIS SYSTEM (BCM) 27

COMMON ITEM **27**
COMMON ITEM : CONSULT-III Function (BCM - COMMON ITEM) 27

HEADLAMP **28**
HEADLAMP : CONSULT-III Function (BCM - HEAD LAMP) 28

FLASHER **30**
FLASHER : CONSULT-III Function (BCM - FLASHER) 30

DIAGNOSIS SYSTEM (IPDM E/R) **32**
Diagnosis Description 32
CONSULT-III Function (IPDM E/R) 34

DIAGNOSIS SYSTEM (HEADLAMP LEVELIZER) **37**
CONSULT-III Functions (HEADLAMP LEVELIZER) 37

COMPONENT DIAGNOSIS **38**

B2080 ECU TROUBLE **38**
Description 38
DTC Logic 38
Diagnosis Procedure 38

B2081 INITIAL NOT DONE **39**
DTC Logic 39
Diagnosis Procedure 39

B2082 SENSOR OUT OF RANGE **40**
DTC Logic 40
Diagnosis Procedure 40

B2083 SEN SIG NOT PLAUSIBLE **41**
DTC Logic 41
Diagnosis Procedure 41

B2084 VOLTAGE UNDER LIMIT **42**
DTC Logic 42
Diagnosis Procedure 42

B2085 LOWBEAM SIG OPEN LINE **43**
Description 43
DTC Logic 43
Diagnosis Procedure 43

B2086 FRQ. OVER LIMIT **45**
Description 45
DTC Logic 45
Diagnosis Procedure 45

B2087 SHORT TO GROUND **47**
DTC Logic 47
Diagnosis Procedure 47

B2088 SHORT TO BATTERY **48**
DTC Logic 48
Diagnosis Procedure 48

B208A PARA NOT PROG **49**
DTC Logic 49
Diagnosis Procedure 49

POWER SUPPLY AND GROUND CIRCUIT **50**

BCM (BODY CONTROL MODULE) **50**
BCM (BODY CONTROL MODULE) : Diagnosis Procedure 50

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) **50**
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) : Diagnosis Procedure 50

AUTO LEVELIZER CONTROL UNIT **51**
AUTO LEVELIZER CONTROL UNIT : Diagnosis Procedure 51

EXTERIOR LAMP FUSE **53**
Description 53
Diagnosis Procedure 53

HEADLAMP (HI) CIRCUIT **54**
Component Function Check 54
Diagnosis Procedure 54

HEADLAMP (LO) CIRCUIT **56**
Component Function Check 56
Diagnosis Procedure 56

XENON HEADLAMP **58**
Description 58
Diagnosis Procedure 58

HEADLAMP LEVELIZER CIRCUIT **60**
Description 60
Component Function Check 60
Diagnosis Procedure 60

FRONT FOG LAMP CIRCUIT **62**
Component Function Check 62
Diagnosis Procedure 62

PARKING LAMP CIRCUIT **64**
Component Function Check 64
Diagnosis Procedure 64

TURN SIGNAL LAMP CIRCUIT **66**
Description 66
Component Function Check 66
Diagnosis Procedure 66

OPTICAL SENSOR **69**
Description 69
Component Function Check 69
Diagnosis Procedure 69

HAZARD SWITCH **72**
Component Function Check 72
Diagnosis Procedure 72

TAIL LAMP CIRCUIT 74
Component Function Check 74
Diagnosis Procedure 74

LICENSE PLATE LAMP CIRCUIT 76
Component Function Check 76
Diagnosis Procedure 76

REAR FOG LAMP CIRCUIT 77
Component Function Check 77
Diagnosis Procedure 77

HEADLAMP SYSTEM 79
Wiring Diagram - HEADLAMP - 79

AUTO LIGHT SYSTEM 83
Wiring Diagram - AUTO LIGHT SYSTEM - 83

FRONT FOG LAMP SYSTEM 87
Wiring Diagram - FRONT FOG LAMP - 87

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM 90
Wiring Diagram - TURN AND HAZARD WARNING LAMPS - 90

PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM 95
Wiring Diagram - PARKING, LICENSE PLATE AND TAIL LAMPS - 95

STOP LAMP 99
Wiring Diagram - STOP LAMP - 99

BACK-UP LAMP 102
Wiring Diagram - BACK-UP LAMP - 102

REAR FOG LAMP SYSTEM 105
Wiring Diagram - REAR FOG LAMP - 105

ECU DIAGNOSIS 108

BCM (BODY CONTROL MODULE) 108
Reference Value 108
Wiring Diagram - BCM - 131
Fail-safe 137
DTC Inspection Priority Chart 139
DTC Index 140

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) 142
Reference Value 142
Wiring Diagram - IPDM E/R - 150
Fail-safe 153
DTC Index 155

AUTO LEVELIZER CONTROL UNIT 156
Reference Value 156
Wiring Diagram — HEADLAMP AIMING CONTROL SYSTEM — 158
Fail-safe 161
DTC Inspection Priority Chart 162
DTC Index 163

SYMPTOM DIAGNOSIS 164

EXTERIOR LIGHTING SYSTEM SYMPTOMS. 164
Symptom Table 164

NORMAL OPERATING CONDITION 167
Description 167

BOTH SIDE HEADLAMPS (HI) ARE NOT TURNED ON 168
Description 168
Diagnosis Procedure 168

BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON 169
Description 169
Diagnosis Procedure 169

PARKING, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON 170
Description 170
Diagnosis Procedure 170

BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON 171
Description 171
Diagnosis Procedure 171

PRECAUTION 172

PRECAUTIONS 172
Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" 172
Precautions For Xenon Headlamp Service 172

ON-VEHICLE MAINTENANCE 173

HEADLAMP AIMING ADJUSTMENT 173
Description 173
Aiming Adjustment Procedure (Low Beam) 174
Aiming Adjustment Procedure (High Beam) 175

FRONT FOG LAMP AIMING ADJUSTMENT . 178
Description 178
Aiming Adjustment Procedure 178

ON-VEHICLE REPAIR 180

FRONT COMBINATION LAMP 180
Exploded View 180
Removal and Installation 181
Replacement 181
Disassembly and Assembly 182

FRONT FOG LAMP 183
Exploded View 183
Removal and Installation 183
Replacement 183

OPTICAL SENSOR 185
Exploded View 185
Removal and Installation 185

LIGHTING & TURN SIGNAL SWITCH 186
Exploded View 186
Removal and Installation 186

HAZARD SWITCH 187
Exploded View 187
Removal and Installation 187

SIDE TURN SIGNAL LAMP 188
Exploded View 188
Removal and Installation 188

AUTO LEVELIZER CONTROL UNIT 190
Exploded View 190
Removal and Installation 190

REAR COMBINATION LAMP 191
Exploded View 191
Removal and Installation 191
Replacement 192

HIGH-MOUNTED STOP LAMP 193
Exploded View 193
Removal and Installation 193

REAR FOG LAMP 194
Exploded View 194
Removal and Installation 194
Replacement 194

LICENSE PLATE LAMP 195
Exploded View 195
Removal and Installation 195
Replacement 195

SERVICE DATA AND SPECIFICATIONS (SDS) 197

SERVICE DATA AND SPECIFICATIONS (SDS) 197
Bulb Specifications 197

HALOGEN TYPE

BASIC INSPECTION 198

DIAGNOSIS AND REPAIR WORKFLOW 198
Work Flow 198

FUNCTION DIAGNOSIS 200

HEADLAMP SYSTEM 200
System Diagram 200
System Description 200
Component Parts Location 201
Component Description 201

AUTO LIGHT SYSTEM 202
System Diagram 202
System Description 202
Component Parts Location 203
Component Description 203

FRONT FOG LAMP SYSTEM 204
System Diagram 204
System Description 204
Component Parts Location 205
Component Description 205

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM 206
System Diagram 206
System Description 206
Component Parts Location 207
Component Description 207

PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM 208
System Diagram 208
System Description 208
Component Parts Location 209
Component Description 209

REAR FOG LAMP SYSTEM 210
System Diagram 210
System Description 210
Component Parts Location 211
Component Description 211

EXTERIOR LAMP BATTERY SAVER SYSTEM 212
System Diagram 212
System Description 212
Component Parts Location 213
Component Description 213

DIAGNOSIS SYSTEM (BCM) 214

COMMON ITEM 214
COMMON ITEM : CONSULT-III Function (BCM - COMMON ITEM) 214

HEADLAMP 215
HEADLAMP : CONSULT-III Function (BCM - HEAD LAMP) 215

FLASHER 217
FLASHER : CONSULT-III Function (BCM - FLASHER) 217

DIAGNOSIS SYSTEM (IPDM E/R) 219
Diagnosis Description 219
CONSULT-III Function (IPDM E/R) 221

COMPONENT DIAGNOSIS 224

POWER SUPPLY AND GROUND CIRCUIT ...224

BCM (BODY CONTROL MODULE) 224
BCM (BODY CONTROL MODULE) : Diagnosis Procedure 224

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) 224
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) : Diagnosis Procedure 224

EXTERIOR LAMP FUSE 226
Description 226
Diagnosis Procedure 226

HEADLAMP (HI) CIRCUIT 227
Component Function Check 227
Diagnosis Procedure 227

HEADLAMP (LO) CIRCUIT 229
Component Function Check 229
Diagnosis Procedure 229

FRONT FOG LAMP CIRCUIT 231
Component Function Check 231
Diagnosis Procedure 231

PARKING LAMP CIRCUIT 233
Component Function Check 233
Diagnosis Procedure 233

TURN SIGNAL LAMP CIRCUIT 235
Description 235
Component Function Check 235
Diagnosis Procedure 235

OPTICAL SENSOR 238
Description 238
Component Function Check 238
Diagnosis Procedure 238

HAZARD SWITCH 241
Component Function Check 241
Diagnosis Procedure 241

TAIL LAMP CIRCUIT 243
Component Function Check 243
Diagnosis Procedure 243

LICENSE PLATE LAMP CIRCUIT 245
Component Function Check 245
Diagnosis Procedure 245

REAR FOG LAMP CIRCUIT 246
Component Function Check 246
Diagnosis Procedure 246

HEADLAMP SYSTEM 248
Wiring Diagram - HEADLAMP - 248

AUTO LIGHT SYSTEM 252
Wiring Diagram - AUTO LIGHT SYSTEM - 252

HEADLAMP AIMING CONTROL SYSTEM (MANUAL) 256
Description 256
Wiring Diagram - HEADLAMP AIMING CONTROL SYSTEM (MANUAL) - 256
Component Inspection 257

FRONT FOG LAMP SYSTEM 259
Wiring Diagram - FRONT FOG LAMP - 259

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM 262
Wiring Diagram - TURN AND HAZARD WARNING LAMPS - 262

PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM 267
Wiring Diagram - PARKING, LICENSE PLATE AND TAIL LAMPS - 267

STOP LAMP 271
Wiring Diagram - STOP LAMP - 271

BACK-UP LAMP 274
Wiring Diagram - BACK-UP LAMP - 274

REAR FOG LAMP SYSTEM 277
Wiring Diagram - REAR FOG LAMP - 277

ECU DIAGNOSIS 280

BCM (BODY CONTROL MODULE) 280
Reference Value 280
Wiring Diagram - BCM - 303
Fail-safe 309
DTC Inspection Priority Chart 311
DTC Index 312

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) 314
Reference Value 314
Wiring Diagram - IPDM E/R - 322
Fail-safe 325
DTC Index 327

SYMPTOM DIAGNOSIS 328

EXTERIOR LIGHTING SYSTEM SYMPTOMS. 328
Symptom Table 328

BOTH SIDE HEADLAMPS (HI) ARE NOT TURNED ON 331
Description 331
Diagnosis Procedure 331

BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON 332
Description 332
Diagnosis Procedure 332

PARKING, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON 333
Description 333
Diagnosis Procedure 333

BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON 334
Description 334
Diagnosis Procedure 334

PRECAUTION 335

PRECAUTIONS 335
Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" 335

ON-VEHICLE MAINTENANCE 336

HEADLAMP AIMING ADJUSTMENT 336
Description 336
Aiming Adjustment Procedure (Low Beam) 337
Aiming Adjustment Procedure (High Beam) 338

FRONT FOG LAMP AIMING ADJUSTMENT . 341
Description 341
Aiming Adjustment Procedure 341

ON-VEHICLE REPAIR 343

FRONT COMBINATION LAMP 343
Exploded View 343
Removal and Installation 343
Replacement 344
Disassembly and Assembly 344

FRONT FOG LAMP 346
Exploded View 346
Removal and Installation 346
Replacement 346

OPTICAL SENSOR 348
Exploded View 348
Removal and Installation 348

LIGHTING & TURN SIGNAL SWITCH 349
Exploded View 349
Removal and Installation 349

HEADLAMP AIMING SWITCH 350
Exploded View 350
Removal and Installation 350

HAZARD SWITCH 351
Exploded View 351
Removal and Installation 351

SIDE TURN SIGNAL LAMP 352
Exploded View 352
Removal and Installation 352

REAR COMBINATION LAMP 354
Exploded View 354
Removal and Installation 354
Replacement 355

HIGH-MOUNTED STOP LAMP 356
Exploded View 356
Removal and Installation 356

REAR FOG LAMP 357
Exploded View 357
Removal and Installation 357
Replacement 357

LICENSE PLATE LAMP 358
Exploded View 358
Removal and Installation 358
Replacement 358

SERVICE DATA AND SPECIFICATIONS (SDS) 360

SERVICE DATA AND SPECIFICATIONS (SDS) 360
Bulb Specifications 360

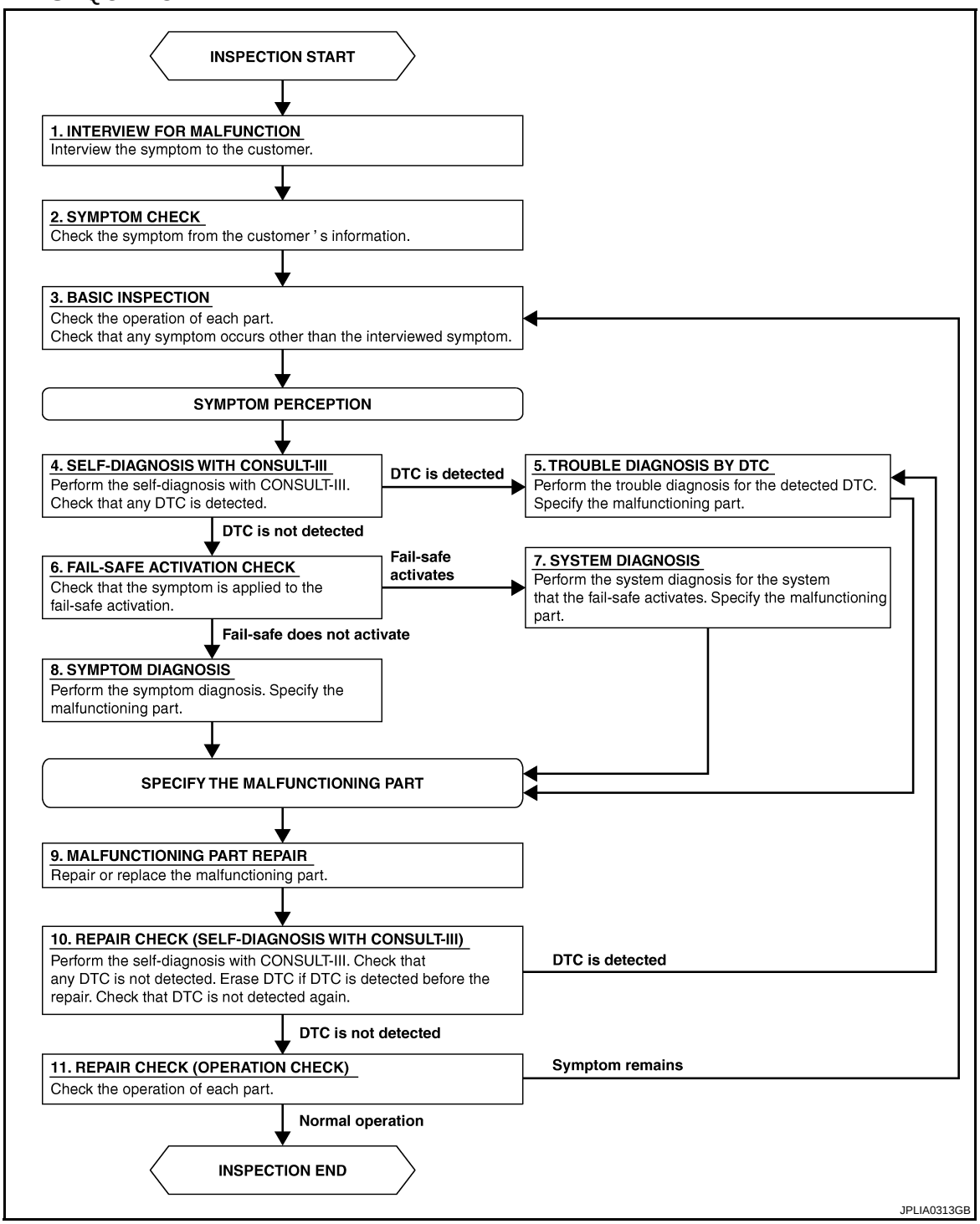
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000003773518

OVERALL SEQUENCE



DETAILED FLOW

1. INTERVIEW FOR MALFUNCTION

Interview the symptom to the customer.

>> GO TO 2.

2.SYMPTOM CHECK

Check the symptom from the customer's information.

>> GO TO 3.

3.BASIC INSPECTION

Check the operation of each part. Check that any symptom occurs other than the interviewed symptom.

>> GO TO 4.

4.SELF-DIAGNOSIS WITH CONSULT-III

Perform the self-diagnosis with CONSULT-III. Check that any DTC is detected.

Is any DTC detected?

YES >> GO TO 5.
NO >> GO TO 6.

5.TROUBLE DIAGNOSIS BY DTC

Perform the trouble diagnosis for the detected DTC. Specify the malfunctioning part.

>> GO TO 9.

6.FAIL-SAFE ACTIVATION CHECK

Check that the symptom is applied to the fail-safe activation.

Does the fail-safe activate?

YES >> GO TO 7.
NO >> GO TO 8.

7.SYSTEM DIAGNOSIS

Perform the system diagnosis for the system that the fail-safe activates. Specify the malfunctioning part.

>> GO TO 9.

8.SYMPTOM DIAGNOSIS

Perform the symptom diagnosis. Specify the malfunctioning part.

>> GO TO 9.

9.MALFUNCTION PART REPAIR

Repair or replace the malfunctioning part.

>> GO TO 10.

10.REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT-III)

Perform the self-diagnosis with CONSULT-III. Check that any DTC is not detected. Erase DTC if DTC is detected before the repair. Check that DTC is not detected again.

Is any DTC detected?

YES >> GO TO 5.
NO >> GO TO 11.

11.REPAIR CHECK (OPERATION CHECK)

Check the operation of each part.

Does it operate normally?

YES >> INSPECTION END
NO >> GO TO 3.

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description

INFOID:0000000003894984

CAUTION:
- **When replacing the auto levelizer control unit, you must perform “WRITE CONFIGURATION” with CONSULT-III.**
- **Complete the procedure of “WRITE CONFIGURATION” in order.**
- **When replacing the auto levelizer control unit, perform “SENSOR INITIALIZE” with CONSULT-III.**

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement

INFOID:0000000003894985

1.WRITING VEHICLE SPECIFICATION

CONSULT-III Configuration
Perform “WRITE CONFIGURATION” to write vehicle specification. Refer to EXL-9, "CONFIGURATION (HEADLAMP LEVELIZER) : Special Repair Requirement".

>> GO TO 2.

2.SENSOR INITIALIZE

CONSULT-III Work support
Perform “SENSOR INITIALIZE”. Refer to EXL-10, "SENSOR INITIALIZE : Special Repair Requirement (HEADLAMP AIMING CONTROL SYSTEM)".

>> WORK END

CONFIGURATION (HEADLAMP LEVELIZER)

CONFIGURATION (HEADLAMP LEVELIZER) : Description

INFOID:0000000003894986

Vehicle specification needs to be written with CONSULT-III because it is not written after replacing the auto levelizer control unit.

Function	Description
WRITE CONFIGURATION	Writes the vehicle configuration automatically.

CAUTION:
- **When replacing the auto levelizer control unit, you must perform “WRITE CONFIGURATION” with CONSULT-III.**
- **Complete the procedure of “WRITE CONFIGURATION” in order.**

CONFIGURATION (HEADLAMP LEVELIZER) : Special Repair Requirement

INFOID:0000000003894987

1.WRITE CONFIGURATION

CONSULT-III Configuration
1. Select “WRITE CONFIGURATION”.
2. Select “Setting change”.
3. When “COMMAND FINISHED”, select “END”.

>> WORK END

SENSOR INITIALIZE

SENSOR INITIALIZE : Description

INFOID:0000000003774311

HEADLAMP AIMING CONTROL SYSTEM

Perform the sensor initialize when installing, removing and replacing the auto levelizer control unit and suspension components.

SENSOR INITIALIZE : Special Repair Requirement (HEADLAMP AIMING CONTROL SYSTEM)

INFOID:0000000003774312

1.VEHICLE CONDITION CHECK

1. Park the vehicle in the straight-forward position.
2. Unload the vehicle (no passenger aboard).

>> GO TO 2.

2.SENSOR INITIALIZE

CONSULT-III WORK SUPPORT

1. Select "SENSOR INITIALIZE" of HEADLAMP LEVELIZER work support item.
2. Select "START".
3. When "INITIALIZE COMPLETE", select "END".

CAUTION:

If "INITIALIZE NOT DONE" is indicated, auto levelizer control unit detects that the sensor lever signal changes. The sensor initialize is cancelled. In this case, turn the ignition switch OFF to prevent the vehicle from the height change. Perform the sensor initialize again.

Is the sensor initialize completed?

YES >> GO TO 3.
NO >> Perform the sensor initialize again.

3.SELF-DIAGNOSIS RESULT CHECK

Perform the self-diagnosis with CONSULT-III. Check that any DTC is not detected.

Is any DTC detected?

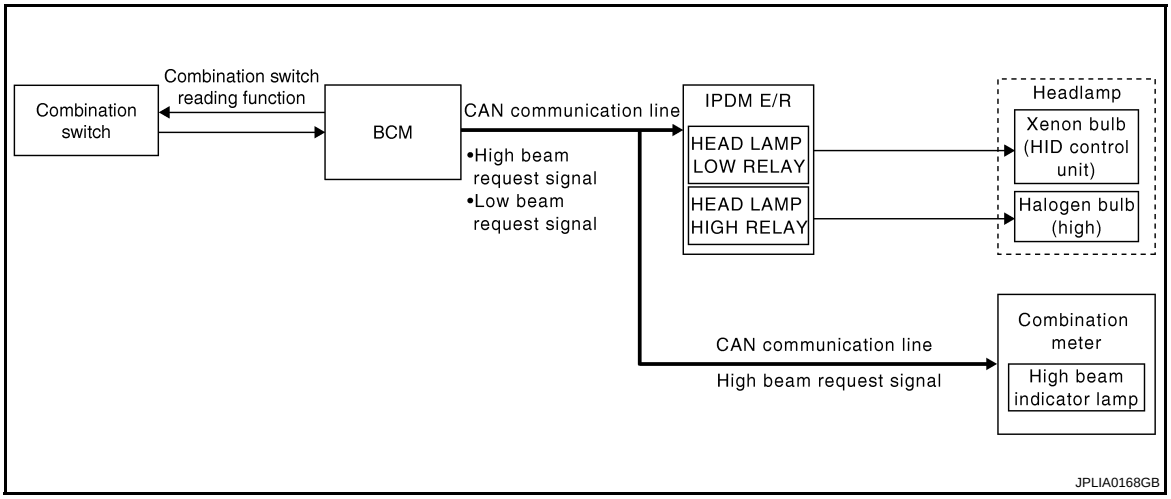
YES >> GO TO 2.
NO >> Sensor initialize completed

FUNCTION DIAGNOSIS

HEADLAMP SYSTEM

System Diagram

INFOID:0000000003774356



System Description

INFOID:0000000003774357

OUTLINE

Headlamp is controlled by combination switch reading function and headlamp control function of BCM, and relay control function of IPDM E/R.

HEADLAMP (LO) OPERATION

- BCM detects the combination switch condition with the combination switch reading function.
- BCM transmits the low beam request signal to IPDM E/R with CAN communication according to the headlamp (LO) ON condition.

Headlamp (LO) ON condition

- Lighting switch 2ND
- Lighting switch AUTO (auto light function ON judgment)

- IPDM E/R turns the integrated headlamp low relay ON, and turns the headlamp ON according to the low beam request signal.

HEADLAMP (HI) OPERATION

- BCM transmits the high beam request signal to IPDM E/R and the combination meter with CAN communication according to the headlamp (HI) ON condition.

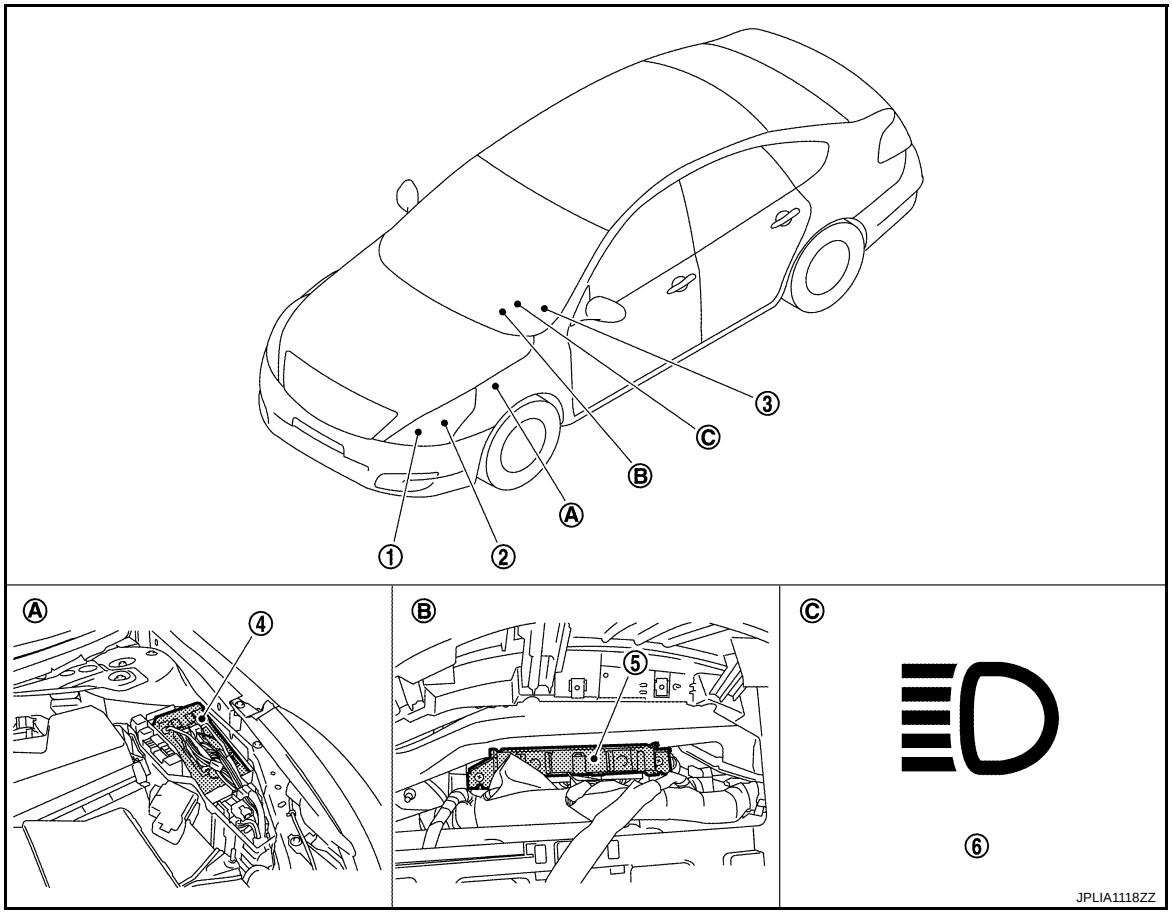
Headlamp (HI) ON condition

- Lighting switch HI with the lighting switch 2ND or AUTO (auto light function ON judgment)
- Lighting switch PASS

- Combination meter turns the high beam indicator lamp ON according to the high beam request signal.
- IPDM E/R turns the integrated headlamp high relay ON, and turns the headlamp ON according to the high beam request signal.

Component Parts Location

INFOID:0000000003774358



1. Headlamp (HI)
2. Headlamp (LO)
3. Combination switch
4. IPDM E/R
5. BCM
6. High beam indicator lamp
A. Engine room (LH)
B. Behind the combination meter
C. On the combination meter

Component Description

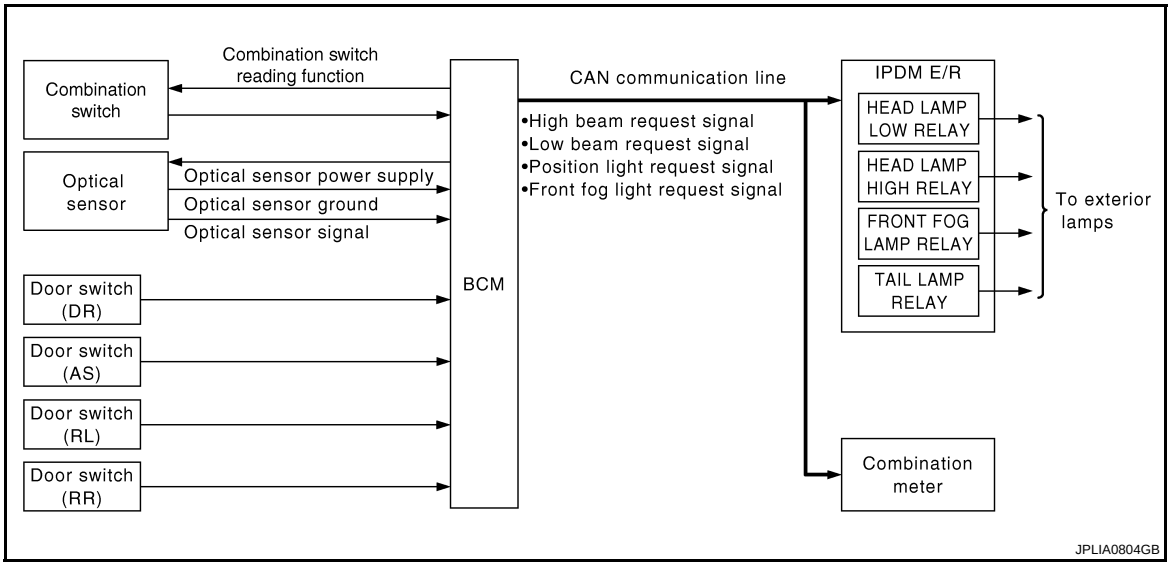
INFOID:0000000003774359

Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Judges that the headlamp is turned ON according to the vehicle condition. - Requests the headlamp relay (HI/LO) ON to IPDM E/R (with CAN communication). - Requests the high beam indicator lamp ON to the combination meter (with CAN communication).
IPDM E/R	Controls the integrated relay, and supplies voltage to the load according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-8, "System Diagram".
Combination meter (High beam indicator lamp)	Turns the high beam indicator lamp ON according to the request from BCM (with CAN communication).

AUTO LIGHT SYSTEM

System Diagram

INFOID:0000000003773527



System Description

INFOID:0000000003773528

OUTLINE

- Auto light system is controlled by each function of BCM and IPDM E/R.

Control by BCM
- Combination switch reading function
- Headlamp control function
- Auto light function
- Delay timer function

Control by IPDM E/R
- Relay control function

- Auto light system has the auto light function and the delay timer function.
- Auto light function turns the exterior lamps* and each illumination ON/OFF automatically according to the outside brightness.
- When auto light system turns the exterior lamps ON with the ignition switch OFF, delay timer function turns the exterior lamps OFF depending on the vehicle condition with the auto light function after a certain period of time.

*: Headlamp (LO/HI), parking lamp, tail lamp and front fog lamp (Headlamp HI and front fog lamp depend on the combination switch condition.)

AUTO LIGHT FUNCTION

- BCM detects the combination switch condition with the combination switch reading function.
- BCM supplies voltage to optical sensor when the ignition switch is turned ON or ACC.
- Optical sensor converts outside brightness (lux) to voltage and transmits the optical sensor signal to BCM.
- BCM judges outside brightness from the optical sensor signal and judges ON/OFF condition of the exterior lamp and each illumination according to the outside brightness.
- BCM transmits each request signal to IPDM E/R with CAN communication according to ON/OFF condition by the auto light function.

NOTE:
ON/OFF timing differs based on the sensitivity from the setting. The setting can be set by CONSULT-III. Refer to EXL-28, "HEADLAMP : CONSULT-III Function (BCM - HEAD LAMP)".

DELAY TIMER FUNCTION

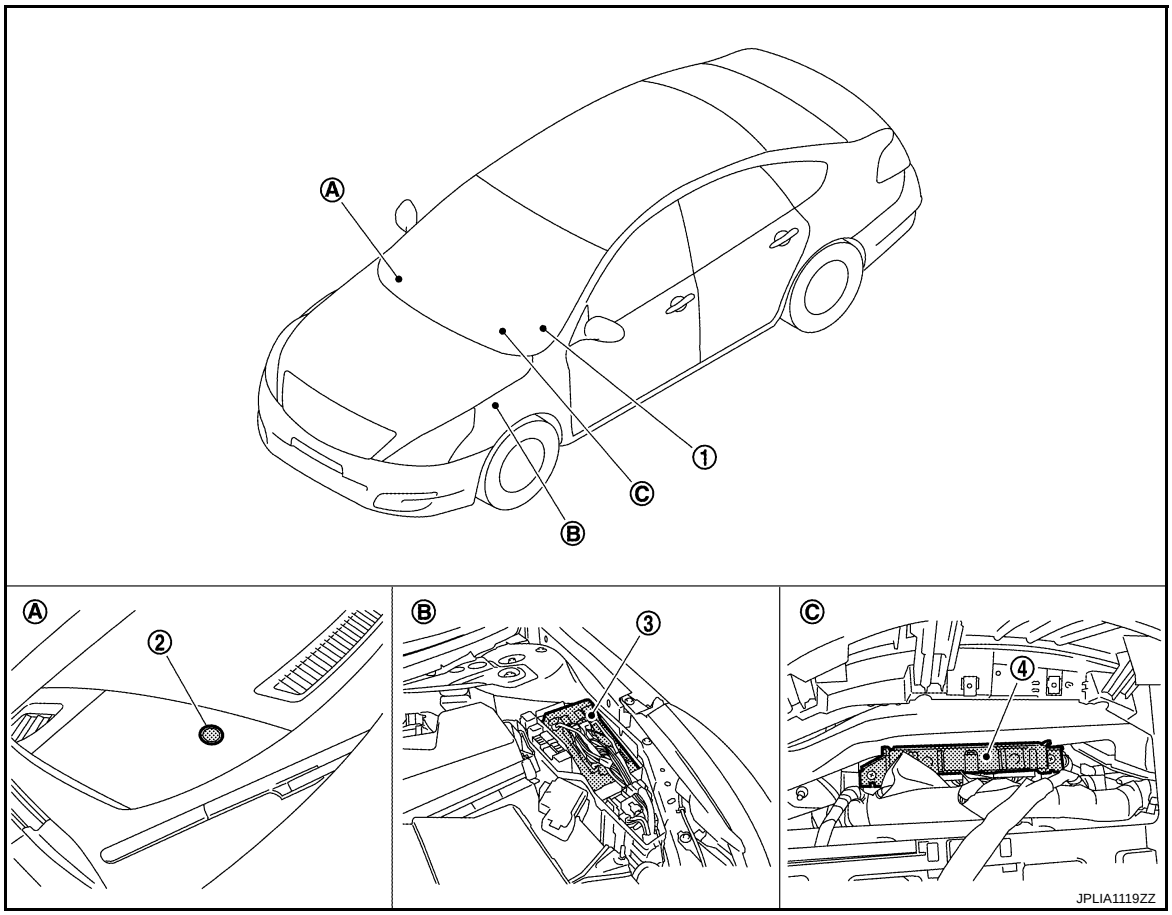
BCM turns the exterior lamp OFF depending on the vehicle condition with the auto light function when the ignition switch is turned OFF.
- Turns the exterior lamp OFF 5 minutes after detecting that any door opens (Door switch ON).
- Turns the exterior lamp OFF a certain period of time* after closing all doors (Door switch ON→OFF).

• Turns the exterior lamp OFF with the ignition switch ACC or the light switch OFF.
*: The preset time is 45 seconds. The timer operating time can be set by CONSULT-III. Refer to EXL-28, "HEADLAMP : CONSULT-III Function (BCM - HEAD LAMP)".

NOTE:
When any position other than the light switch AUTO is set, the auto light system function switches to the exterior lamp battery saver function.

Component Parts Location

INFOID:0000000003773529



1. Combination switch
2. Optical sensor
3. IPDM E/R
4. BCM
A. Instrument upper panel (RH)
B. Engine room (LH)
C. Behind the combination meter

Component Description

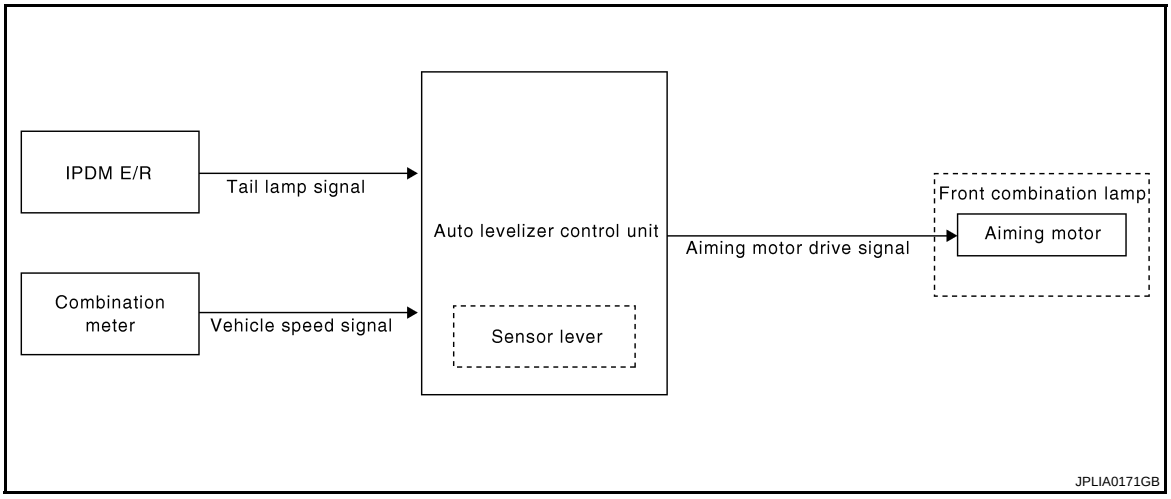
INFOID:0000000003773530

Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Judges the outside brightness from the optical sensor signal. • Judges the OFF timing according to the vehicle condition. • Judges the ON/OFF status of the exterior lamp and each illumination according to the outside brightness and the vehicle condition. Requests ON/OFF of each relay to IPDM E/R (with CAN communication).
IPDM E/R	Controls the integrated relay, and supplies voltage to the load according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-8, "System Diagram".
Optical sensor	Refer to EXL-69, "Description".

HEADLAMP AIMING CONTROL SYSTEM (AUTO)

System Diagram

INFOID:0000000003774320



System Description

INFOID:0000000003774321

OUTLINE

- Headlamp aiming control system is controlled by auto levelizer control unit.
- Auto levelizer control unit controls the headlamp light axis height appropriately depending on the vehicle rear height.
- Auto levelizer control unit detects the vehicle condition necessary for the aiming motor control with the following signals.

- Sensor lever signal (detected by the sensor lever)
- Tail lamp signal (inputted from IPDM E/R)
- Vehicle speed signal (8-pulse) (inputted from combination meter)

HEADLAMP AUTO AIMING OPERATION

- Auto levelizer control unit calculates vehicle pitch angle from sensor lever signal and determines the necessary correction to compensate the deviation from standard light axis position.
- Auto levelizer control unit outputs aiming motor drive signal when operating conditions are satisfied.

Operating condition

- Ignition switch ON
- Tail lamp ON
- Auto levelizer control unit changes the aiming motor drive signal when any of the correcting condition is detected. Output is maintained if other condition is detected.

Correcting condition

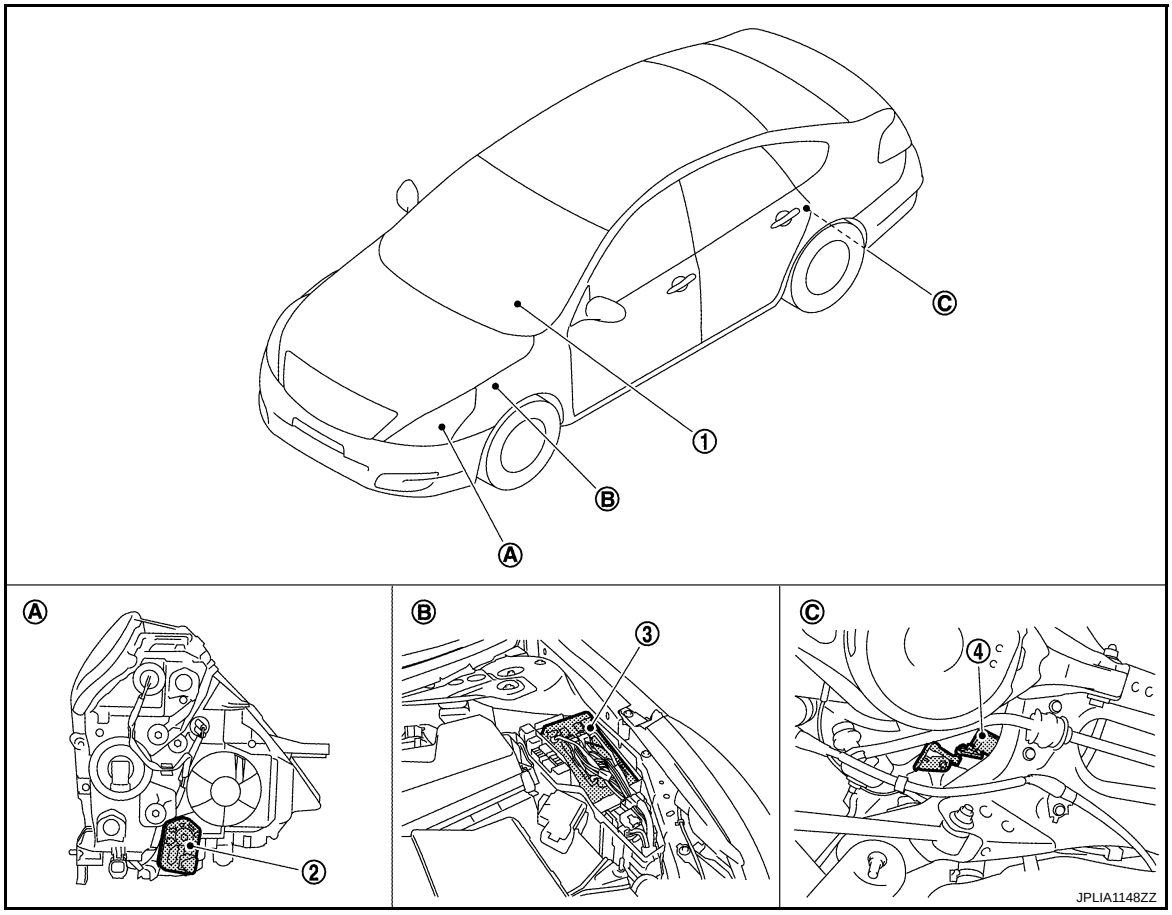
- Tail lamp is turned ON.
- Vehicle posture becomes stable after the vehicle posture change is detected with the tail lamp ON and the vehicle stopped.
- Vehicle speed is maintained with the tail lamp ON and the vehicle driven.

CAUTION:

Adjusted axis position may differ from the preset position although the headlamp auto aiming activates properly when the suspension is replaced or worn.

Component Parts Location

INFOID:0000000003774322



1. Combination meter
2. Aiming motor
3. IPDM E/R
4. Auto levelizer control unit
A. Front combination lamp (back)
B. Engine room (LH)
C. Left rear suspension member

Component Description

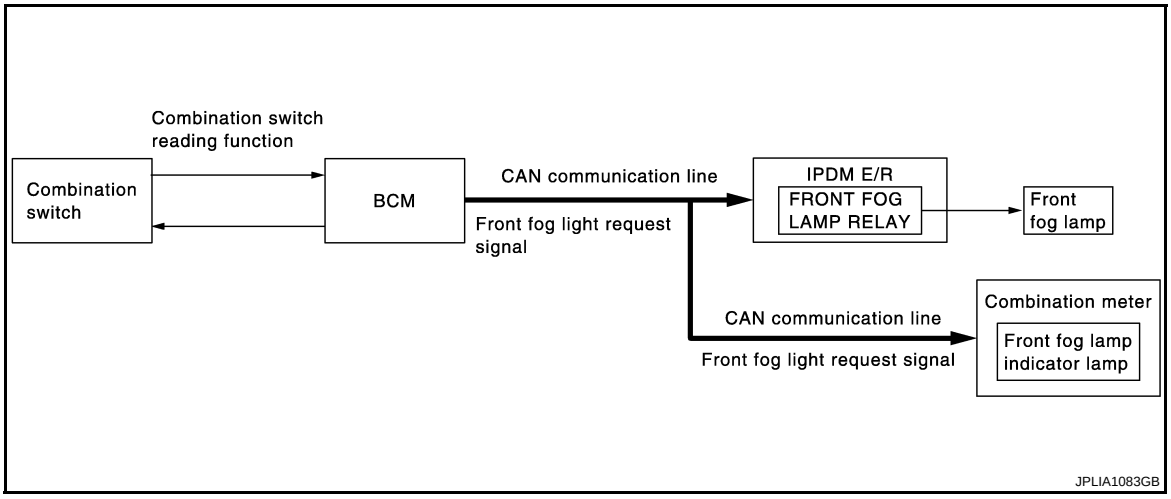
INFOID:0000000003774323

Part	Description
Auto levelizer control unit	Refer to EXL-60, "Description".
Headlamp aiming motor	Refer to EXL-60, "Description".
IPDM E/R	Outputs the tail lamp signal to auto levelizer control unit.
Combination meter	Outputs the vehicle speed signal (8-pulse) to auto levelizer control unit.

FRONT FOG LAMP SYSTEM

System Diagram

INFOID:0000000003773531



System Description

INFOID:0000000003773532

OUTLINE

Front fog lamp is controlled by combination switch reading function and front fog lamp control function of BCM, and relay control function of IPDM E/R.

FRONT FOG LAMP OPERATION

- BCM detects the combination switch condition by the combination switch reading function.
- BCM transmits the front fog light request signal to IPDM E/R with CAN communication according to the front fog lamp ON condition.

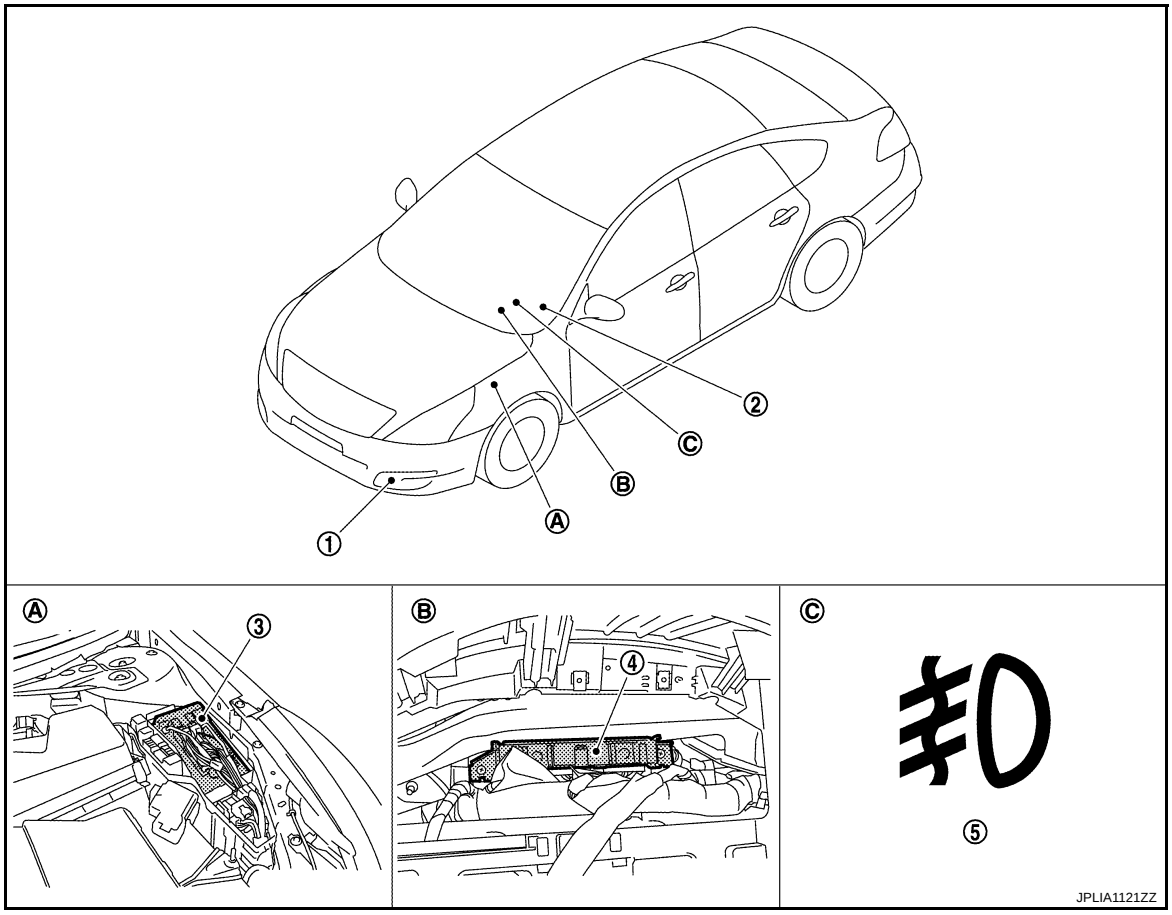
Front fog lamp ON condition

- Front fog lamp switch ON
- Lighting switch 1ST, 2ND or AUTO (auto light function ON judgment)

- IPDM E/R turns the integrated front fog lamp relay ON, and turns the front fog lamp ON according to the front fog light request signal.
- Combination meter turns the front fog lamp indicator lamp ON according to the front fog light request signal.

Component Parts Location

INFOID:0000000003773533



1. Front fog lamp
2. Combination switch
3. IPDM E/R
4. BCM
5. Front fog lamp indicator lamp
A. Engine room (LH)
B. Behind the combination meter
C. On the combination meter

Component Description

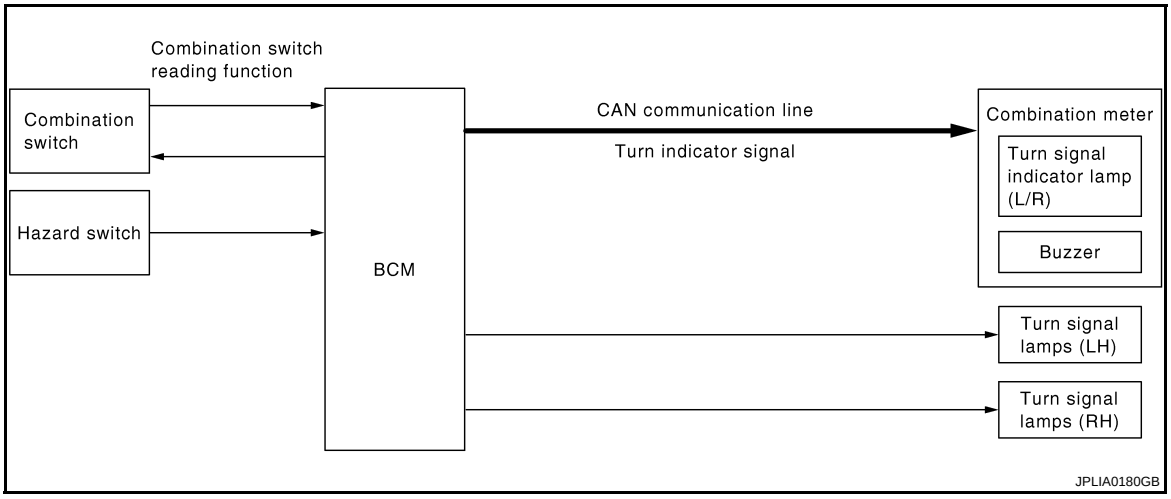
INFOID:0000000003773534

Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Judges the front fog lamp ON/OFF status according to the vehicle condition. - Requests the front fog lamp relay ON to IPDM E/R (with CAN communication).
IPDM E/R	Controls the integrated relay and supplies voltage to the load according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-8, "System Diagram".
Combination meter (Front fog lamp indicator lamp)	Turn the front fog lamp indicator lamp ON according to the request from BCM (with CAN communication).

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM

System Diagram

INFOID:0000000003773535



System Description

INFOID:0000000003773536

OUTLINE

Turn signal lamp and the hazard warning lamp is controlled by combination switch reading function and the flasher control function of BCM.

TURN SIGNAL LAMP OPERATION

- BCM detects the combination switch condition by the combination switch reading function.
- BCM supplies voltage to the right (left) turn signal lamp circuit when the ignition switch is turned ON and the turn signal switch is in the right (left) position. BCM blinks the turn signal lamp.

HAZARD WARNING LAMP OPERATION

BCM supplies voltage to both turn signal lamp circuit when the hazard switch is turned ON. BCM blinks the hazard warning lamp.

TURN SIGNAL INDICATOR LAMP AND TURN SIGNAL SOUND OPERATION

- BCM transmits the turn indicator signal to the combination meter with CAN communication while the turn signal lamp and the hazard warning lamp are operating.
- Combination meter outputs the turn signal sound with the integrated buzzer while blinking the turn signal indicator lamp according to the turn indicator signal.

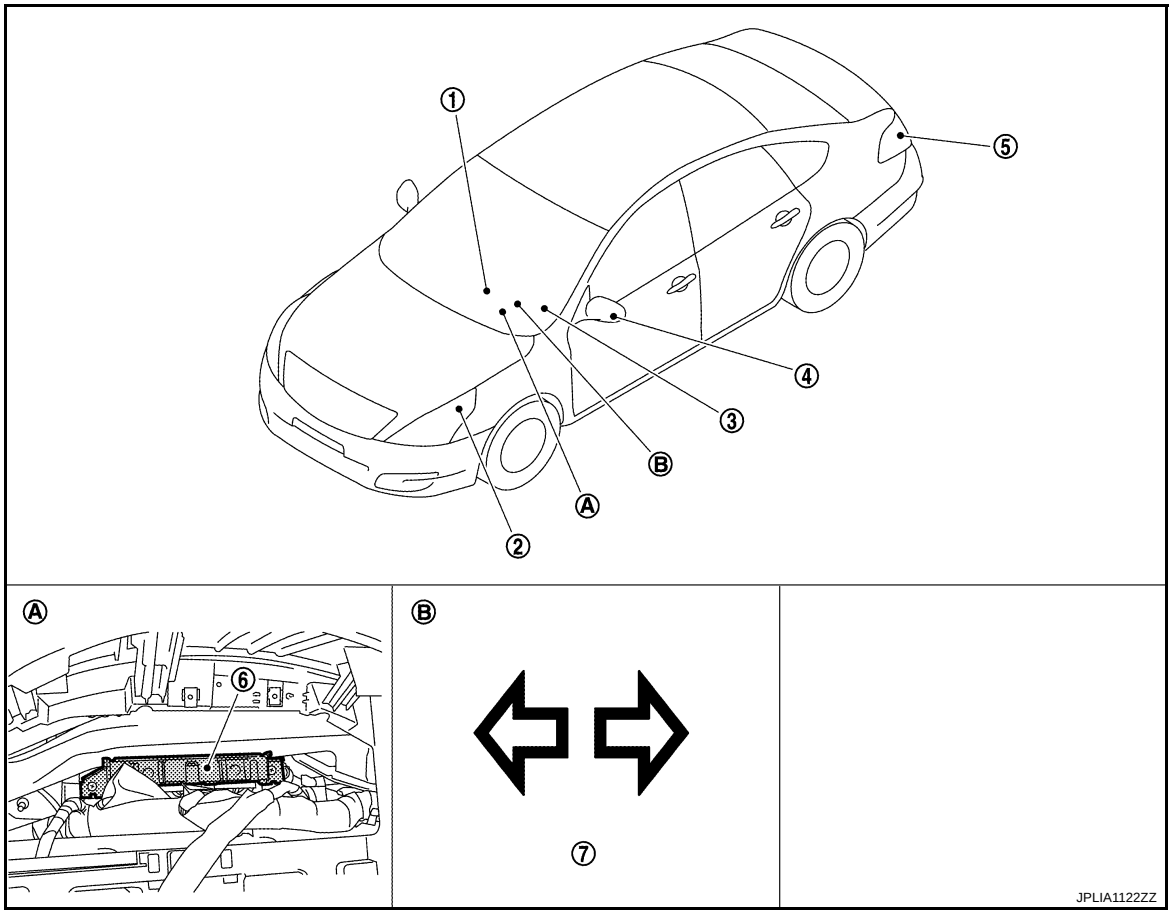
HIGH FLASHER OPERATION (FAIL-SAFE)

- BCM detects the turn signal lamp circuit status by the terminal current value.
- BCM increases the turn signal lamp blinking speed if the bulb or harness open is detected with the turn signal lamp operating.

NOTE:
The blinking speed is normal while operating the hazard warning lamp.

Component Parts Location

INFOID:0000000003773537



1. Hazard switch
2. Front turn signal lamp
3. Combination switch
4. Side turn signal lamp
5. Rear turn signal lamp
6. BCM
7. Turn signal indicator lamp

A. Behind the combination meter
B. On the combination meter

Component Description

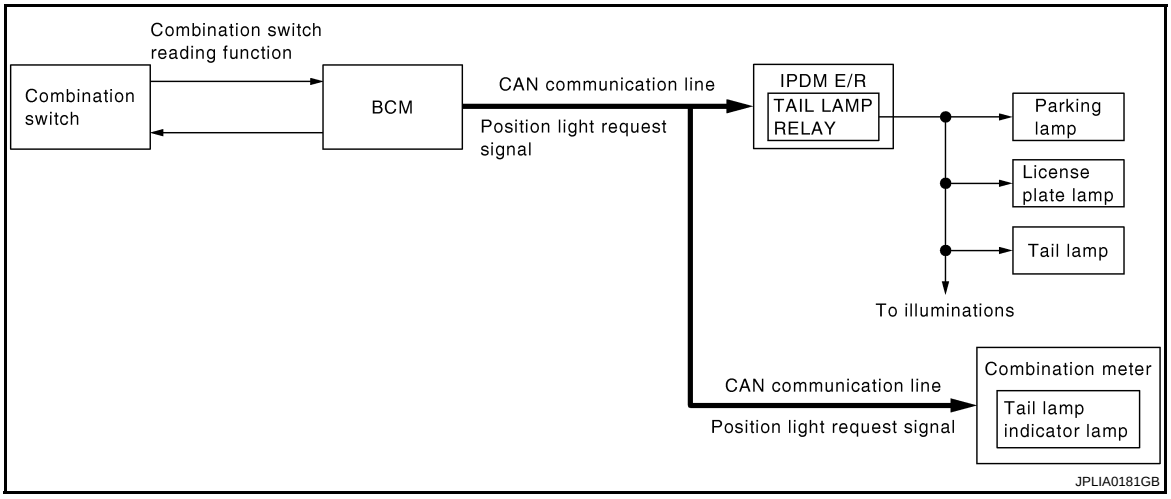
INFOID:0000000003773538

Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Judges the blinks of the turn signal lamp and the hazard warning lamp from each switch status. The applicable turn signal lamp blinks. • Requests the turn signal indicator lamp blink to the combination meter (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-8, "System Diagram".
Hazard switch	Inputs the hazard switch ON/OFF signal to BCM.
Combination meter (Turn signal indicator lamp & buzzer)	Blinks the turn signal indicator lamp and outputs the turn signal operating sound with integrated buzzer according to the request from BCM (with CAN communication).

PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM

System Diagram

INFOID:0000000003773539



System Description

INFOID:0000000003773540

OUTLINE

Parking, license plate and tail lamps are controlled by combination switch reading function and headlamp control function of BCM, and relay control function of IPDM E/R.

PARKING, LICENSE PLATE AND TAIL LAMPS OPERATION

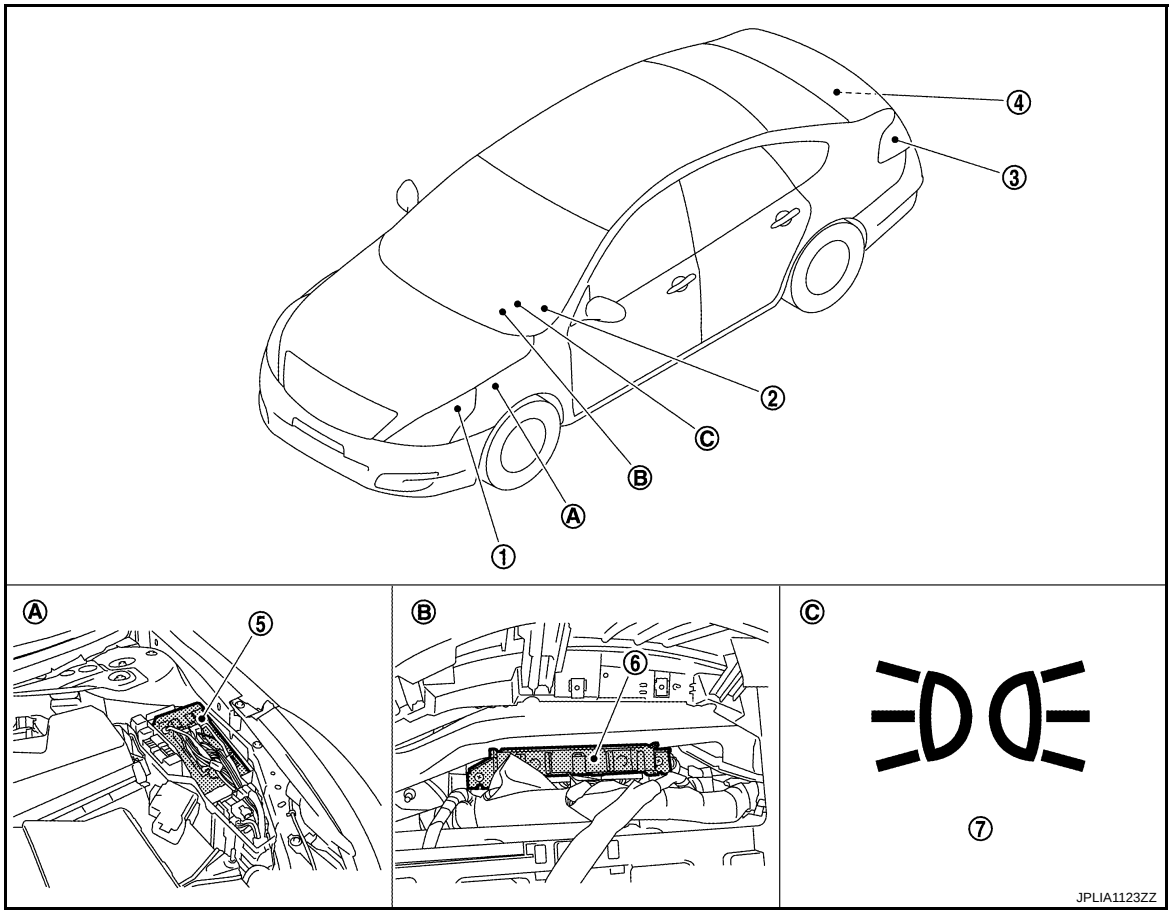
- BCM detects the combination switch condition by the combination switch reading function.
- BCM transmits the position light request signal to IPDM E/R and the combination meter with CAN communication according to the ON/OFF condition of the parking, license plate and tail lamps.

Parking, license plate and tail lamps ON condition
- Lighting switch 1ST
- Lighting switch 2ND
- Lighting switch AUTO (auto light function ON judgment)

- IPDM E/R turns the integrated tail lamp relay ON and turns the parking lamp, license plate and tail lamps ON according to the position light request signal.
- Combination meter turns the tail lamp indicator lamp ON according to the position light request signal.

Component Parts Location

INFOID:0000000003773541



1. Parking lamp
2. Combination switch
3. Tail lamp
4. License plate lamp
5. IPDM E/R
6. BCM
7. Tail lamp indicator lamp

A. Engine room (LH)
B. Behind the combination meter
C. On the combination meter

Component Description

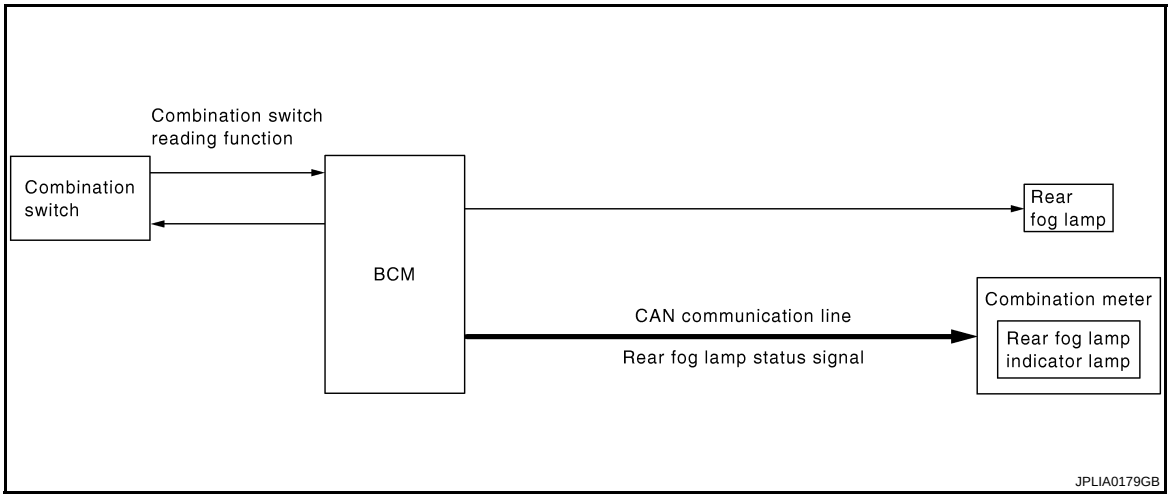
INFOID:0000000003773542

Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Judges the ON/OFF status of the parking, license plate and tail lamps according to the vehicle condition. - Requests the tail lamp relay ON to IPDM E/R (with CAN communication). - Requests the tail lamp indicator lamp ON to the combination meter (with CAN communication).
IPDM E/R	Controls the integrated relay and supplies voltage to the load according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-8, "System Diagram".
Combination meter (Tail lamp indicator lamp)	Turns the tail lamp indicator lamp ON according to the request from BCM (with CAN communication).

REAR FOG LAMP SYSTEM

System Diagram

INFOID:0000000003811061



System Description

INFOID:0000000003811062

OUTLINE

Rear fog lamp is controlled with the combination switch reading function and the rear fog lamp control function of BCM.

REAR FOG LAMP OPERATION

- BCM detects the condition of the combination switch by the combination switch reading function.
- BCM supplies voltage to rear fog lamp according to the rear fog lamp ON condition.

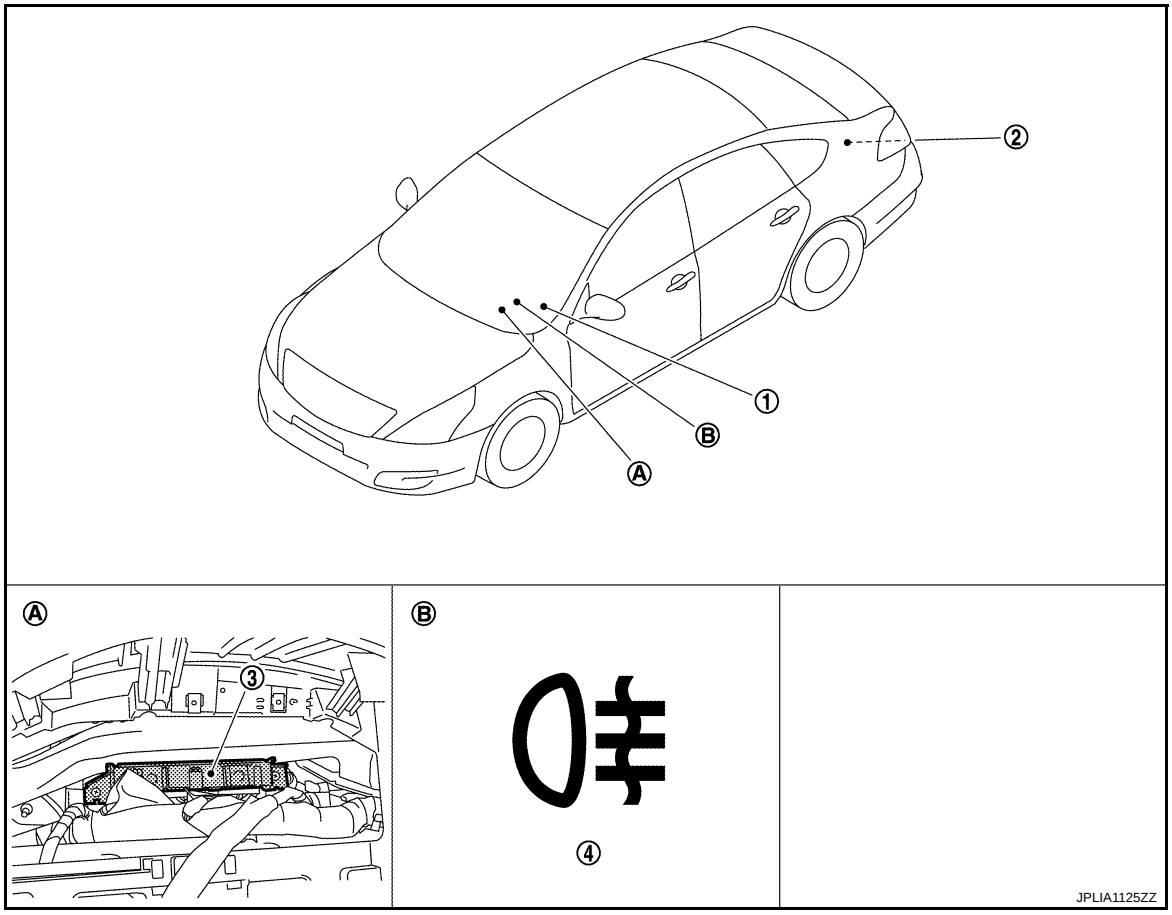
Rear fog lamp ON condition
- Rear fog lamp switch signal is input with front fog lamp ON and rear fog lamp OFF

Rear fog lamp switch ON with any of following condition.
- Lighting switch 2ND
- Lighting switch 1ST, and front fog lamp switch ON

- BCM transmits the rear fog lamp status signal to the combination meter with CAN communication.
- Combination meter turns the rear fog lamp indicator lamp ON according to the rear fog lamp status signal.

Component Parts Location

INFOID:0000000003811063



1. Combination switch
2. Rear fog lamp
3. BCM
4. Rear fog lamp indicator lamp
A. Behind the combination meter
B. On the combination meter

Component Description

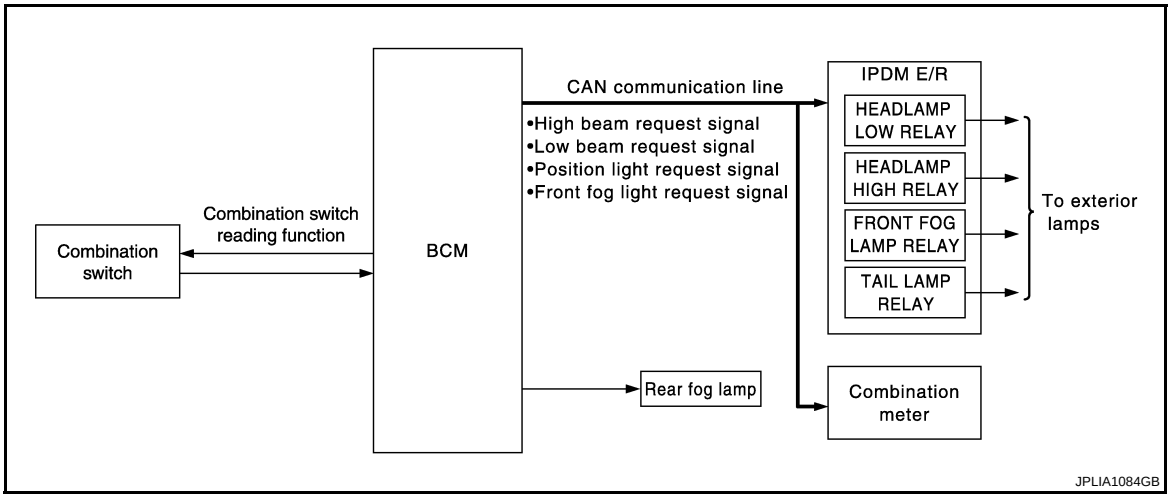
INFOID:0000000003811064

Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Judges that the rear fog lamp is turned ON according to the vehicle status - Supplies voltage to the rear fog lamp - Requests the rear fog lamp indicator lamp ON to the combination meter (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-8, "System Diagram".
Combination meter (Rear fog lamp indicator lamp)	Turns the rear fog lamp indicator lamp ON according to the request from BCM (with CAN communication).

EXTERIOR LAMP BATTERY SAVER SYSTEM

System Diagram

INFOID:0000000003773543



System Description

INFOID:0000000003773544

OUTLINE

- Exterior lamp battery saver system is controlled by each function of BCM and IPDM E/R.

Control by BCM
- Combination switch reading function
- Headlamp control function
- Exterior lamp battery saver function

Control by IPDM E/R
- Relay control function
- BCM turns the exterior lamp* OFF after a period of time to prevent the battery from over-discharge when the ignition switch is turned OFF with the exterior lamp ON.

*: Headlamp (LO/HI), parking lamp, tail lamp, license plate lamp, front fog lamp and rear fog lamp.

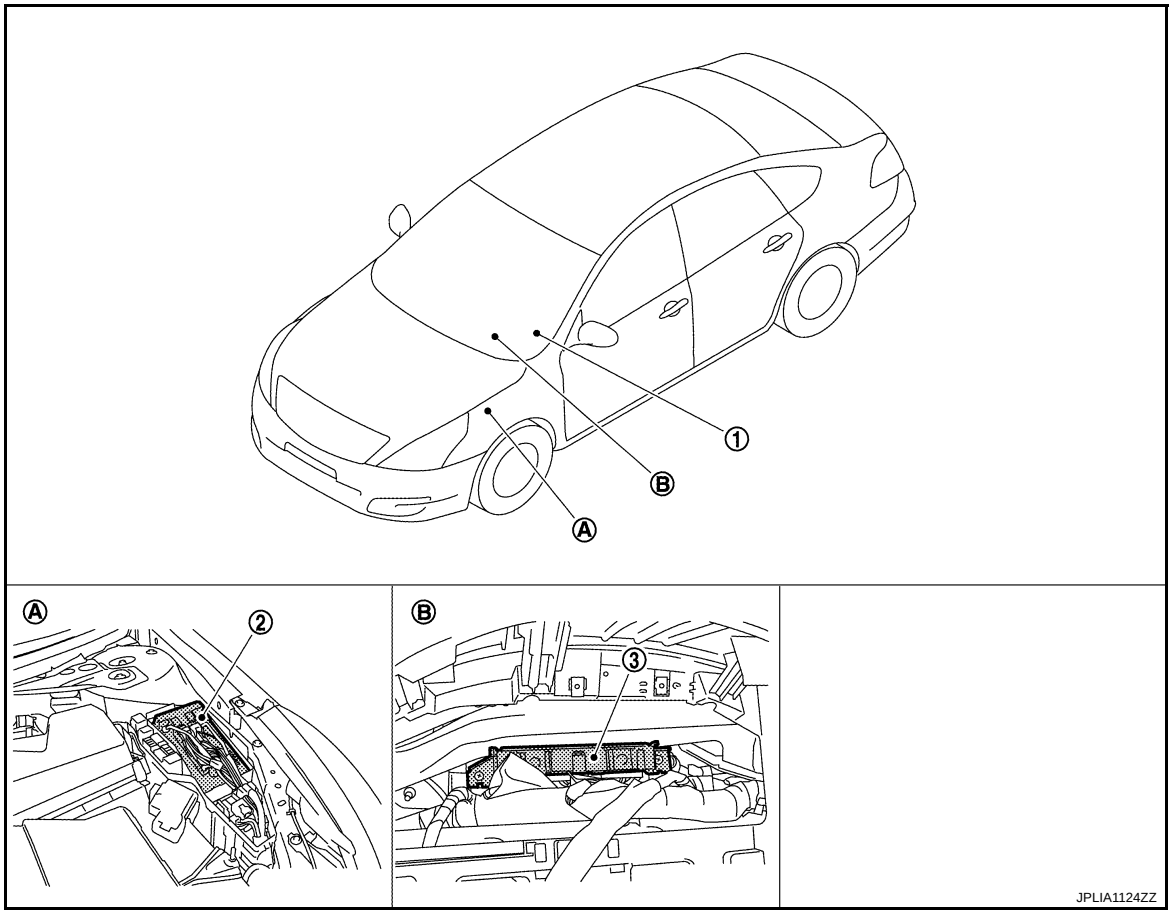
EXTERIOR LAMP BATTERY SAVER ACTIVATION

BCM activates the timer and turns the exterior lamp OFF 5 minutes after the ignition switch is turned from ON → OFF with the exterior lamps ON.

NOTE:
- Headlamp control function turns the exterior lamps ON normally when the ignition switch is turned ACC or the engine started (both before and after the exterior lamp battery saver is turned OFF).
- The timer starts at the time that the lighting switch is turned from OFF → 1ST or 2ND with the exterior lamp OFF.

Component Parts Location

INFOID:0000000003773545



1. Combination switch
2. IPDM E/R
3. BCM
A. Engine room (LH)
B. Behind the combination meter

Component Description

INFOID:0000000003773546

Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Activates the battery saver to turn the exterior lamps OFF according to the vehicle condition. - Requests each relay OFF to IPDM E/R (with CAN communication).
IPDM E/R	Controls the integrated relay according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-8, "System Diagram".

DIAGNOSIS SYSTEM (BCM)
COMMON ITEM
COMMON ITEM : CONSULT-III Function (BCM - COMMON ITEM)

INFOID:0000000003894258

APPLICATION ITEM
CONSULT-III performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description
Work Support	Changes the setting for each system function.
Self Diagnostic Result	Displays the diagnosis results judged by BCM.
CAN Diag Support Monitor	Monitors the reception status of CAN communication viewed from BCM. Refer to CONSULT-III operation manual.
Data Monitor	The BCM input/output signals are displayed.
Active Test	The signals used to activate each device are forcibly supplied from BCM.
Ecu Identification	The BCM part number is displayed.
Configuration	• Read and save the vehicle specification. • Write the vehicle specification when replacing BCM.

SYSTEM APPLICATION
BCM can perform the following functions for each system.

NOTE:

It can perform the diagnosis modes except the following for all sub system selection items.

×: Applicable item

System	Sub system selection item	Diagnosis mode		
		Work Support	Data Monitor	Active Test
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	×
Warning chime	BUZZER		×	×
Interior room lamp timer	INT LAMP	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER	×	×	×
—	AIR CONDITONER*			
• Intelligent Key system • Engine start system	INTELLIGENT KEY	×	×	×
Combination switch	COMB SW		×	
Body control system	BCM	×		
NVIS - NATS	IMMU		×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Trunk lid opener system	TRUNK		×	×
Vehicle security system	THEFT ALM	×	×	×
—	RETAINED PWR*		×	
Signal buffer system	SIGNAL BUFFER		×	×
—	TPMS (AIR PRESSURE MONITOR)*	×	×	×

NOTE:

*: This item is displayed, but is not used.

FREEZE FRAME DATA (FFD) AND IGN COUNTER

Freeze Frame Data

The BCM records the following condition at the moment a particular DTC is detected.
- Vehicle Speed
- Odo/Trip Meter
- Vehicle Condition (BCM detected condition)

CONSULT screen terms	Description
SLEEP>LOCK	While turning BCM status from low power consumption mode to normal mode (Power supply position is “LOCK”.)
SLEEP>OFF	While turning BCM status from low power consumption mode to normal mode (Power supply position is “OFF”.)
LOCK>ACC	While turning power supply position from “LOCK” to “ACC”
ACC>ON	While turning power supply position from “ACC” to “IGN”
RUN>ACC	While turning power supply position from “RUN” to “ACC” (Vehicle is stopping and selector lever is except P position.)
CRANK>RUN	While turning power supply position from “CRANKING” to “RUN” (From cranking up the engine to run it)
RUN>URGENT	While turning power supply position from “RUN“ to “ACC” (Emergency stop operation)
ACC>OFF	While turning power supply position from “ACC” to “OFF”
OFF>LOCK	While turning power supply position from “OFF” to “LOCK”
OFF>ACC	While turning power supply position from “OFF” to “ACC”
ON>CRANK	While turning power supply position from “IGN” to “CRANKING”
OFF>SLEEP	While turning BCM status from normal mode (Power supply position is “OFF”.) to low power consumption mode
LOCK>SLEEP	While turning BCM status from normal mode (Power supply position is “LOCK”.) to low power consumption mode
LOCK	Power supply position is “LOCK” (Ignition switch OFF with steering is locked.)
OFF	Power supply position is “OFF” (Ignition switch OFF with steering is unlocked.)
ACC	Power supply position is “ACC” (Ignition switch ACC)
ON	Power supply position is “IGN” (Ignition switch ON with engine stopped)
ENGINE RUN	Power supply position is “RUN” (Ignition switch ON with engine running)
CRANKING	Power supply position is “CRANKING” (At engine cranking)

IGN Counter

IGN counter indicates the number of times that ignition switch is turned ON after DTC is detected.
- The number is 0 when a malfunction is detected now.
- The number increases like 1 → 2 → 3...38 → 39 after returning to the normal condition whenever ignition switch OFF → ON.
- The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.

HEADLAMP

HEADLAMP : CONSULT-III Function (BCM - HEAD LAMP)

INFOID:0000000003773548

WORK SUPPORT

Service item	Setting item	Setting
BATTERY SAVER SET	On*	With the exterior lamp battery saver function
	Off	Without the exterior lamp battery saver function

Service item	Setting item	Setting	
ILL DELAY SET	MODE 1*	45 sec.	Sets delay timer function timer operation time. (All doors closed)
	MODE 2	Without the function	
	MODE 3	30 sec.	
	MODE 4	60 sec.	
	MODE 5	90 sec.	
	MODE 6	120 sec.	
	MODE 7	150 sec.	
	MODE 8	180 sec.	
CUSTOM A/LIGHT SETTING	MODE 1*	Normal	
	MODE 2	More sensitive setting than normal setting (Turns ON earlier than normal operation.)	
	MODE 3	More sensitive setting than MODE 2 (Turns ON earlier than MODE 2.)	
	MODE 4	Less sensitive setting than normal setting (Turns ON later than normal operation.)	

*: Factory setting

DATA MONITOR

Monitor item [Unit]	Description
PUSH SW [On/Off]	The switch status input from push-button ignition switch
ENGINE STATE [Stop/Stall/Crank/Run]	The engine status received from ECM with CAN communication
VEH SPEED 1 [km/h]	The value of the vehicle speed received from combination meter with CAN communication
KEY SW-SLOT [On/Off]	Key switch status input from key slot
TURN SIGNAL R [On/Off]	Each switch status that BCM detects from the combination switch reading function
TURN SIGNAL L [On/Off]	
TAIL LAMP SW [On/Off]	
HI BEAM SW [On/Off]	
HEAD LAMP SW1 [On/Off]	
HEAD LAMP SW2 [On/Off]	
PASSING SW [On/Off]	
AUTO LIGHT SW [On/Off]	
FR FOG SW [On/Off]	
RR FOG SW [On/Off]	
DOOR SW-DR [On/Off]	The switch status input from front door switch (driver side)
DOOR SW-AS [On/Off]	The switch status input from front door switch (passenger side)

Monitor item [Unit]	Description
DOOR SW-RR [On/Off]	The switch status input from rear door switch RH
DOOR SW- RL [On/Off]	The switch status input from rear door switch LH
DOOR SW-BK [On/Off]	**NOTE:** The item is indicated, but not monitored.
OPTICAL SENSOR [V]	The value of exterior brightness voltage input from the optical sensor

ACTIVE TEST

Test item	Operation	Description
TAIL LAMP	On	Transmits the position light request signal to IPDM E/R with CAN communication to turn the tail lamp ON.
	Off	Stops the position light request signal transmission.
HEAD LAMP	Hi	Transmits the high beam request signal with CAN communication to turn the headlamp (HI).
	Low	Transmits the low beam request signal with CAN communication to turn the headlamp (LO).
	Off	Stops the high & low beam request signal transmission.
FR FOG LAMP	On	Transmits the front fog lights request signal to IPDM E/R with CAN communication to turn the front fog lamp ON.
	Off	Stops the front fog lights request signal transmission.
RR FOG LAMP	On	• Outputs the voltage to turn the rear fog lamp ON. • Transmits the rear fog lamp status signal to the combination meter with CAN communication to turn the rear fog lamp indicator lamp ON.
	Off	• Stops the voltage to turn the rear fog lamp OFF. • Stops the rear fog lamp status signal transmission.
DAYTIME RUNNING LIGHT	On	**NOTE:** The item is indicated, but cannot be tested.
	Off	
CORNERING LAMP	RH	**NOTE:** The item is indicated, but cannot be tested.
	LH	
	Off	
ILL DIM SIGNAL	On	**NOTE:** The item is indicated, but cannot be tested.
	Off	

FLASHER

FLASHER : CONSULT-III Function (BCM - FLASHER)

INFOID:0000000003773549

WORK SUPPORT

Service item	Setting item	Setting	
HAZARD ANSWER BACK	Lock Only*	With locking only	Sets the hazard warning lamp answer back function when the door is lock/unlock with the request switch or the key fob.
	Unlk Only	With unlocking only	
	Lock/Unlk	With locking/unlocking	
	Off	Without the function	

*: Factory setting

DATA MONITOR

Monitor item [Unit]	Description
REQ SW-DR [On/Off]	The switch status input from the request switch (driver side)
REQ SW-AS [On/Off]	The switch status input from the request switch (passenger side)
PUSH SW [On/Off]	The switch status input from the push-button ignition switch
TURN SIGNAL R [On/Off]	Each switch status that BCM detects from the combination switch reading function
TURN SIGNAL L [On/Off]	
HAZARD SW [On/Off]	The switch status input from the hazard switch
RKE-LOCK [On/Off]	Lock signal status received from the remote keyless entry receiver
RKE-UNLOCK [On/Off]	Unlock signal status received from the remote keyless entry receiver
RKE-PANIC [On/Off]	Panic alarm signal status received from the remote keyless entry receiver

ACTIVE TEST

Test item	Operation	Description
FLASHER	RH	Outputs the voltage to blink the right side turn signal lamps.
	LH	Outputs the voltage to blink the left side turn signal lamps.
	Off	Stops the voltage to turn the turn signal lamps OFF.

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:0000000003894259

AUTO ACTIVE TEST

Description

In auto active test mode, the IPDM E/R sends a drive signal to the following systems to check their operation.

- Oil pressure warning lamp
- Front wiper (LO, HI)
- Parking lamps
- License plate lamps
- Tail lamps
- Front fog lamps
- Headlamps (LO, HI)
- A/C compressor (magnet clutch)
- Cooling fan

Operation Procedure

1. Close the hood and lift the wiper arms from the windshield. (Prevent windshield damage due to wiper operation)
   NOTE:
   When auto active test is performed with hood opened, sprinkle water on windshield beforehand.
2. Turn ignition switch OFF.
3. Turn the ignition switch ON, and within 20 seconds, press the driver door switch 10 times. Then turn the ignition switch OFF.
   CAUTION:
   Close passenger door.
4. Turn the ignition switch ON within 10 seconds. After that the horn sounds once and the auto active test starts.
5. The oil pressure warning lamp starts blinking when the auto active test starts.
6. After a series of the following operations is repeated 3 times, auto active test is completed.

NOTE:
When auto active test mode has to be cancelled halfway through test, turn ignition switch OFF.

CAUTION:

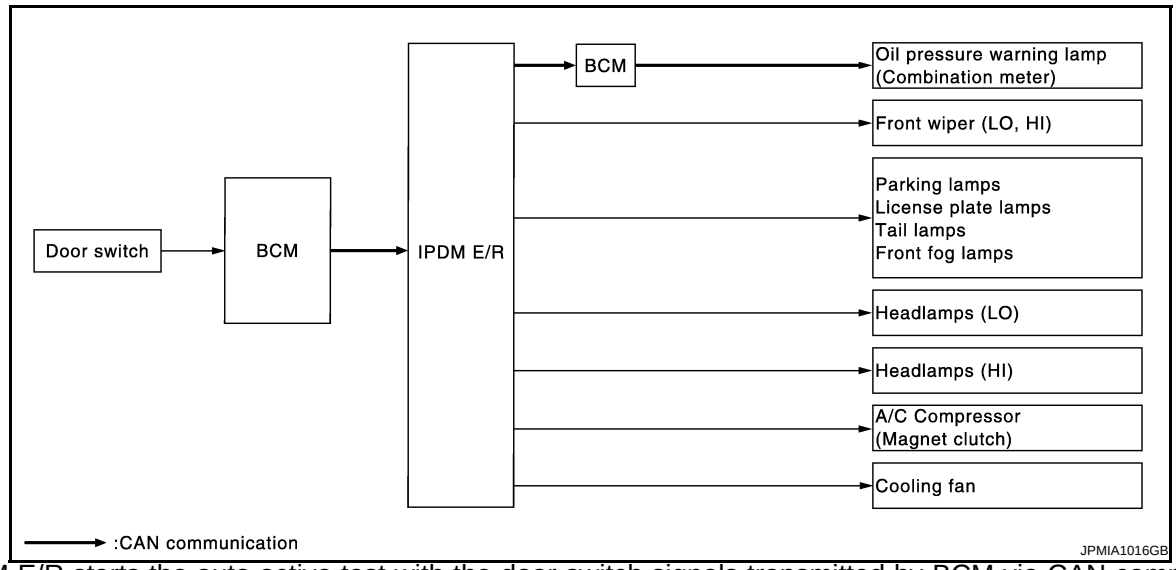
- **If auto active test mode cannot be actuated, check door switch system. Refer to DLK-57, "Component Function Check".**
- **Do not start the engine.**

Inspection in Auto Active Test Mode

When auto active test mode is actuated, the following 5 steps are repeated 3 times.

Operation sequence	Inspection location	Operation
A	Oil pressure warning lamp	Blinks continuously during operation of auto active test
1	Front wiper	LO for 5 seconds → HI for 5 seconds
2	• Parking lamps • License plate lamps • Tail lamps • Front fog lamps	10 seconds
3	Headlamps	LO ⇔ HI 5 times
4	A/C compressor (magnet clutch)	ON ⇔ OFF 5 times
5	Cooling fan	LO for 5 seconds → MID for 3 seconds → HI for 2 seconds

Concept of auto active test



- IPDM E/R starts the auto active test with the door switch signals transmitted by BCM via CAN communication. Therefore, the CAN communication line between IPDM E/R and BCM is considered normal if the auto active test starts successfully.
- The auto active test facilitates troubleshooting if any systems controlled by IPDM E/R cannot be operated.

Diagnosis chart in auto active test mode

Symptom	Inspection contents		Possible cause
Any of the following components do not operate • Parking lamps • License plate lamps • Tail lamps • Front fog lamps • Headlamp (HI, LO) • Front wiper	Perform auto active test. Does the applicable system operate?	YES	BCM signal input circuit
		NO	• Lamp or motor • Lamp or motor ground circuit • Harness or connector between IPDM E/R and applicable system • IPDM E/R
A/C compressor does not operate	Perform auto active test. Does the magnet clutch operate?	YES	• A/C amp. signal input circuit • CAN communication signal between A/C amp. and ECM • CAN communication signal between ECM and IPDM E/R
		NO	• Magnet clutch • Harness or connector between IPDM E/R and magnet clutch • IPDM E/R
Oil pressure warning lamp does not operate	Perform auto active test. Does the oil pressure warning lamp blink?	YES	• Harness or connector between IPDM E/R and oil pressure switch • Oil pressure switch • IPDM E/R
		NO	• CAN communication signal between IPDM E/R and BCM • CAN communication signal between BCM and combination meter • Combination meter

Symptom	Inspection contents		Possible cause
Cooling fan does not operate	Perform auto active test. Does the cooling fan operate?	YES	• ECM signal input circuit • CAN communication signal between ECM and IPDM E/R
		NO	• Harness or connector between IPDM E/R and cooling fan motor • Harness or connector between IPDM E/R and cooling fan relay • Cooling fan motor • Cooling fan relay • IPDM E/R

CONSULT-III Function (IPDM E/R)

INFOID:0000000003894260

APPLICATION ITEM

CONSULT-III performs the following functions via CAN communication with IPDM E/R.

Diagnosis mode	Description
Ecu Identification	Allows confirmation of IPDM E/R part number.
Self Diagnostic Result	Displays the diagnosis results judged by IPDM E/R.
Data Monitor	Displays the real-time input/output data from IPDM E/R input/output data.
Active Test	IPDM E/R can provide a drive signal to electronic components to check their operations.
CAN Diag Support Monitor	The results of transmit/receive diagnosis of CAN communication can be read.

SELF DIAGNOSTIC RESULT

Refer to EXL-155, "DTC Index".

DATA MONITOR

Monitor item

Monitor Item [Unit]	MAIN SIGNALS	Description
MOTOR FAN REQ [1/2/3/4]	×	Displays the value of the cooling fan speed request signal received from ECM via CAN communication.
AC COMP REQ [Off/On]	×	Displays the status of the A/C compressor request signal received from ECM via CAN communication.
TAIL&CLR REQ [Off/On]	×	Displays the status of the position light request signal received from BCM via CAN communication.
HL LO REQ [Off/On]	×	Displays the status of the low beam request signal received from BCM via CAN communication.
HL HI REQ [Off/On]	×	Displays the status of the high beam request signal received from BCM via CAN communication.
FR FOG REQ [Off/On]	×	Displays the status of the front fog light request signal received from BCM via CAN communication.
FR WIP REQ [Stop/1LOW/Low/Hi]	×	Displays the status of the front wiper request signal received from BCM via CAN communication.
WIP AUTO STOP [STOP P/ACT P]	×	Displays the status of the front wiper auto stop signal judged by IPDM E/R.
WIP PROT [Off/BLOCK]	×	Displays the status of the front wiper fail-safe operation judged by IPDM E/R.
IGN RLY1 -REQ [Off/On]		Displays the status of the ignition switch ON signal received from BCM via CAN communication.

Monitor Item [Unit]	MAIN SIGNALS	Description
IGN RLY [Off/On]	×	Displays the status of the ignition relay judged by IPDM E/R.
PUSH SW [Off/On]		Displays the status of the push-button ignition switch judged by IPDM E/R.
INTER/NP SW [Off/On]		Displays the status of the shift position judged by IPDM E/R.
ST RLY CONT [Off/On]		Displays the status of the starter relay status signal received from BCM via CAN communication.
IHBT RLY -REQ [Off/On]		Displays the status of the starter control relay signal received from BCM via CAN communication.
ST/INHI RLY [Off/ ST /INHI/UNKWN]		Displays the status of the starter relay and starter control relay judged by IPDM E/R.
DETENT SW [Off/On]		Displays the status of the control device (detention switch) judged by IPDM E/R.
S/L RLY -REQ [Off/On]		Displays the status of the steering lock relay signal received from BCM via CAN communication.
S/L STATE [LOCK/UNLOCK/UNKWN]		Displays the status of the steering lock judged by IPDM E/R.
DTRL REQ [Off]		**NOTE:** The item is indicated, but not monitored.
OIL P SW [Open/Close]		Displays the status of the oil pressure switch judged by IPDM E/R.
HOOD SW [Off/On]		Displays the status of the hood switch judged by IPDM E/R.
HL WASHER REQ [Off]		Display the status of the headlamp washer request signal received from BCM via CAN communication.
THFT HRN REQ [Off/On]		Displays the status of the theft warning horn request signal received from BCM via CAN communication.
HORN CHIRP [Off/On]		Displays the status of the horn reminder signal received from BCM via CAN communication.
CRNRNG LMP REQ [Off]		**NOTE:** The item is indicated, but not monitored.

ACTIVE TEST

Test item

Test item	Operation	Description
CORNERING LAMP	Off	**NOTE:** The item is indicated, but cannot be tested.
	LH	
	RH	
HORN	On	Operates horn relay for 20 ms.
FRONT WIPER	Off	OFF
	Lo	Operates the front wiper relay.
	Hi	Operates the front wiper relay and front wiper high relay.
MOTOR FAN	1	OFF
	2	Operates the cooling fan relay-1.
	3	Operates the cooling fan relay-2.
	4	Operates the cooling fan relay-2 and cooling fan relay-3.
HEAD LAMP WASHER	On	Operates the headlamp washer relay for 1 s.

Test item	Operation	Description
EXTERNAL LAMPS	Off	OFF
	TAIL	Operates the tail lamp relay.
	Lo	Operates the headlamp low relay.
	Hi	Operates the headlamp low relay and ON/OFF the headlamp high relay at 1 second intervals.
	Fog	Operates the front fog lamp relay.

DIAGNOSIS SYSTEM (HEADLAMP LEVELIZER)

CONSULT-III Functions (HEADLAMP LEVELIZER)

INFOID:0000000003805598

Function item

Diagnosis mode	Description
ECU IDENTIFICATION	Allows confirmation of auto levelizer control unit part number.
SELF DIAGNOSTIC RESULT	Displays the diagnosis results judged by auto levelizer control unit.
WORK SUPPORT	Performs settings on sensors.
DATA MONITOR	Displays input data for headlamp auto aiming motor control unit in real time.
ACTIVE TEST	Transmits a drive signal to the load to check their operation.
CONFIGURATION	Writes the vehicle specification when replacing auto levelizer control unit.

WORK SUPPORT

Work item	Setting details
SENSOR INITIALIZE	Adjusts sensor lever signal output under unladen conditions.

DATA MONITOR

Monitor item [Unit]	Display item
INT SEN VALUE [%]	Displays the sensor lever angle corresponding to the maximum value of sensor lever angle that is recognized with auto levelizer control unit by ratio
ACT OUTPUT [%]	Displays the control value of aiming motor drive signal that is calculated by auto levelizer control unit with the ratio corresponding to the ignition power supply
ACT MEASURED [%]	Displays the measured value of aiming motor drive signal that is output from auto levelizer control unit with the ratio corresponding to ignition power supply
SPEED SIG [km/h]	Displays the vehicle speed judged from vehicle speed signal (8-pulse) that is input to auto levelizer control unit
LIGHT SIGNAL [V]	Displays the status judged from tail lamp signal that is input to auto levelizer control unit
INT SEN VOLT [V]	Displays the ignition power supply status that is input to auto levelizer control unit
EXT SEN VOLT [V]	**NOTE:** The item is indicated, but not monitored.
EXT SEN SIG [V]	**NOTE:** The item is indicated, but not monitored.

ACTIVE TEST

Test item	Operation item	Operation status
LAMP TEST	MIN	Moves the light axis to the highest position.
	MID	Moves the light axis to the initial position.
	MAX	Moves the light axis to the lowest position.

COMPONENT DIAGNOSIS

B2080 ECU TROUBLE

Description

INFOID:0000000003805599

- Auto levelizer control unit is installed in rear suspension arm.
- Auto levelizer control unit detects vehicle rear height.
- Auto levelizer control unit controls headlamp light axis appropriately depending on the vehicle height.

DTC Logic

INFOID:0000000003805600

DTC DETECTION LOGIC
[B2080] ECU TROUBLE

DTC detection condition	DTC erase conditions	Possible causes
Auto levelizer control unit internal malfunction.	Ignition switch OFF	Auto levelizer control unit

Diagnosis Procedure

INFOID:0000000003805601

1.ERASE DTC

Erase DTC memory of HEADLAMP LEVELIZER with self-diagnosis of CONSULT-III.

Is the memory erased?

YES >> INSPECTION END
NO >> Replace the auto levelizer control unit.

B2081 INITIAL NOT DONE

DTC Logic

INFOID:0000000003805602

DTC DETECTION LOGIC

[B2081] INITIAL NOT DONE

DTC detection condition	DTC erase conditions	Possible causes
Sensor initialization is not completed.	Sensor initialization is completed	• Sensor initialization is not completed. • Auto levelizer control unit

Diagnosis Procedure

INFOID:0000000003805603

1.SENSOR INITIALIZE

CONSULT-III WORK SUPPORT

Perform the sensor initialize.

>> Refer to EXL-10, "SENSOR INITIALIZE : Special Repair Requirement (HEADLAMP AIMING CONTROL SYSTEM)".

B2082 SENSOR OUT OF RANGE

DTC Logic

INFOID:0000000003805604

DTC DETECTION LOGIC

[B2082] SENSOR OUT OF RANGE

DTC detection condition	DTC erase conditions	Possible cause
Auto levelizer control unit detected that the sensor lever angle is out of range, continually for 20 ms or more.	When sensor lever returns to normal range	• Auto levelizer control unit installation condition • Sensor initialize is not appropriate • Auto levelizer control unit

DTC CONFIRMATION PROCEDURE

1.ERASE DTC

Erase DTC memory of headlamp levelizer with self-diagnosis of CONSULT-III.

>> GO TO 2.

2.DTC CONFIRMATION

1. Turn the ignition switch ON.
2. Perform self-diagnosis of CONSULT-III.

Is B2082 detected?

YES >> Refer to EXL-40, "Diagnosis Procedure".
NO >> Refer to GI-35, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000003805605

1.CHECK SENSOR INITIALIZATION VALUE

1. Turn ignition switch ON.
2. Turn the lighting switch 1ST.
3. Select "INT SEN VALUE" of HEADLAMP LEVELIZER data monitor item.
4. Check the monitor status under unladen conditions.

Monitor item	Standard value (Approx.)
INT SEN VALUE	54 %*

*: Sensor initialize position (reference)

Is the measurement value normal?

YES >> Replace the auto levelizer control unit.
NO >> GO TO 2.

2.SENSOR INITIALIZATION

Perform the sensor initialize. Refer to EXL-10, "SENSOR INITIALIZE : Special Repair Requirement (HEADLAMP AIMING CONTROL SYSTEM)".

Is sensor initialize completed?

YES >> GO TO 3.
No >> Replace the auto levelizer control unit.

3.ERASE DTC

Erase DTC memory of headlamp levelizer with self-diagnosis of CONSULT-III.

Is the memory erased?

YES >> INSPECTION END
NO >> Replace the auto levelizer control unit.

B2083 SEN SIG NOT PLAUSIBLE

DTC Logic

INFOID:0000000003805606

DTC DETECTION LOGIC

[B2083] SEN SIG NOT PLAUSIBLE

DTC detection condition	DTC erase conditions	Possible causes
When vehicle speed is 5 km/h (3.1 MPH) or more, the auto levelizer control unit cannot detect any changes of the sensor lever angle for 5 minutes or more.	Ignition switch OFF	Auto levelizer control unit

DTC CONFIRMATION PROCEDURE

1.ERASE DTC

Erase DTC memory of HEADLAMP LEVELIZER with self-diagnosis of CONSULT-III.

>> GO TO 2.

2.DTC CONFIRMATION

1. Start the engine.
2. Drive the vehicle for 5 minutes or more.
3. Perform self-diagnosis of CONSULT-III.

Is B2083 detected?

YES >> Refer to EXL-41, "Diagnosis Procedure".
NO >> Refer to GI-35, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000003805607

1.CHECK AUTO LEVELIZER CONTROL UNIT INSTALLATION CONDITION

Check the mounting part of auto levelizer control unit and its link for looseness and deformation.

Is it properly installed?

YES >> Replace the auto levelizer control unit.
NO >> Install auto levelizer control unit properly.

B2084 VOLTAGE UNDER LIMIT

DTC Logic

INFOID:0000000003805608

DTC DETECTION LOGIC

[B2084] VOLTAGE UNDER LIMIT

DTC detection condition	DTC erase conditions	Possible causes
Ignition power supply to auto levelizer control unit is 9 V or less for 1.5 seconds or more.	Ignition switch OFF	• Harness or connector • Auto levelizer control unit

DTC CONFIRMATION PROCEDURE

1.ERASE DTC

Erase DTC memory of headlamp levelizer with self-diagnosis of CONSULT-III.

>> GO TO 2.

2.DTC CONFIRMATION

1. Turn the ignition switch ON.
2. Perform self-diagnosis of CONSULT-III.

Is B2084 detected?

YES >> Refer to EXL-42, "Diagnosis Procedure".
NO >> Refer to GI-35, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000003805609

1.CHECK POWER SUPPLY WITH CONSULT-III

1. Turn ignition switch ON.
2. Turn the lighting switch 1ST.
3. Select "INT SEN VOLT" of HEADLAMP LEVELIZER data monitor item.
4. Check the monitor status.

Monitor item	Standard value (Approx.)
INT SEN VOLT	Battery voltage

Is the measurement value normal?

YES >> Replace the auto levelizer control unit.
NO >> GO TO 2.

2.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit of auto levelizer control unit. Refer to EXL-51, "AUTO LEVELIZER CONTROL UNIT : Diagnosis Procedure".

Is power supply and ground circuit normal?

YES >> Replace the auto levelizer control unit.
NO >> Repair or replace the malfunctioning part.

B2085 LOWBEAM SIG OPEN LINE

Description

INFOID:0000000003805610

- Auto levelizer control unit inputs tail lamp signal from IPDM E/R.
- Auto levelizer control unit always outputs the voltage to detect the DTC.

DTC Logic

INFOID:0000000003805611

DTC DETECTION LOGIC

[B2085] LOWBEAM SIG OPEN LINE

DTC detection condition	DTC erase conditions	Possible causes
Auto levelizer control unit detected that the tail lamp signal is the following condition: 2 V < tail lamp signal < 6 V	Ignition switch OFF	• Harness or connector • IPDM E/R • Auto levelizer control unit

DTC CONFIRMATION PROCEDURE

1.ERASE DTC

Erase DTC memory of headlamp levelizer with self-diagnosis of CONSULT-III.

>> GO TO 2.

2.DTC CONFIRMATION

1. Turn the ignition switch ON.
2. Turn the lighting switch 1ST.
3. Perform self-diagnosis of CONSULT-III.

Is B2085 detected?

YES >> Refer to EXL-43, "Diagnosis Procedure".
NO >> Refer to GI-35, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000003805612

1.CHECK TAIL LAMP SIGNAL INPUT WITH CONSULT-III

1. Turn ignition switch ON.
2. Select "LIGHT SIGNAL" of HEADLAMP LEVELIZER data monitor item.
3. With operating the lighting switch, check the monitor status.

Monitor item	Condition Lighting switch	Standard value (Approx.)
LIGHT SIGNAL	OFF	2 V or less
	1ST	6 V or more

Is the measurement value normal?

YES >> Replace the auto levelizer control unit.
NO >> GO TO 2.

2.CHECK TAIL LAMP SIGNAL INPUT

1. Turn ignition switch OFF.
2. Disconnect the auto levelizer control unit connector.
3. Turn ignition switch ON.
4. With operating the lighting switch, check the voltage between the auto levelizer control unit harness connector and the ground.

Terminals			Condition	Voltage (Approx.)
(+)		(–)		
Auto levelizer control unit		Ground		
Connector	Terminal		Lighting switch	
C8	6		OFF	0 V
			1ST	Battery voltage

Is the measurement value normal?

YES >> Replace the auto levelizer control unit.
NO >> Repair the harnesses between auto levelizer control unit and IPDM E/R.

B2086 FRQ. OVER LIMIT

Description

INFOID:0000000003805613

Auto levelizer control unit inputs vehicle speed signal (8-pules) from combination meter.

DTC Logic

INFOID:0000000003805614

DTC DETECTION LOGIC

[B2086] FRQ. OVER LIMIT

DTC detection condition	DTC erase conditions	Possible causes
Auto levelizer control unit detected that vehicle speed signal is abnormal. [The vehicle speed is 340 km/h (211 MPH) or more for 1.5 seconds or more.]	Ignition switch OFF	• Harness or connector • Auto levelizer control unit

DTC CONFIRMATION PROCEDURE

1.ERASE DTC

Erase DTC memory of HEADLAMP LEVELIZER with self-diagnosis of CONSULT-III.

>> GO TO 2.

2.DTC CONFIRMATION

1. Start the engine.
2. Drive the vehicle at 40 km/h (25 MPH).
3. Perform self-diagnosis of CONSULT-III.

Is B2086 detected?

YES >> Refer to EXL-45, "Diagnosis Procedure".
NO >> Refer to GI-35, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000003805615

1.CHECK VEHICLE SPEED SIGNAL INPUT WITH CONSULT-III

1. Turn ignition switch ON.
2. Select "SPEED SIG" of HEADLAMP LEVELIZER data monitor item.
3. While driving at 40 km/h (25 MPH), check the monitor status.

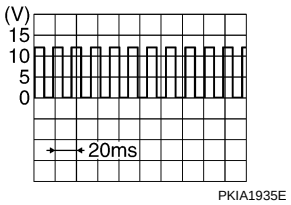
Monitor item	Condition	Standard value (Approx.)
SPEED SIG	While driving at 40 km/h (25 MPH)	40 km/h (25 MPH)

Is the measurement value normal?

YES >> Replace the auto levelizer control unit.
NO >> GO TO 2.

2.CHECK VEHICLE SPEED SIGNAL INPUT

1. Turn ignition switch OFF.
2. Disconnect the auto levelizer control unit connector.
3. Turn ignition switch ON.
4. While driving at 40 km/h (25 MPH), check the voltage between the auto levelizer control unit harness connector and the ground.

Terminals			Condition	Voltage (Approx.)
(+)		(–)		
Auto levelizer control unit				
Connector	Terminal			
C8	4	Ground	While driving at 40 km/h (25 MPH)	

PKIA1935E

Is the measurement value normal?

YES >> Replace the auto levelizer control unit.
NO >> Repair the harnesses between auto levelizer control unit and combination meter.

B2087 SHORT TO GROUND

DTC Logic

INFOID:0000000003805616

DTC DETECTION LOGIC

[B2087] SHORT TO GROUND

DTC detection condition	DTC erase conditions	Possible causes
Headlamp levelizer circuit is shorted to the ground for 1.5 seconds or more.	Ignition switch OFF	• Harness or connector • Auto levelizer control unit

DTC CONFIRMATION PROCEDURE

1.ERASE DTC

Erase DTC memory of HEADLAMP LEVELIZER with self-diagnosis of CONSULT-III.

>> GO TO 2.

2.DTC CONFIRMATION

1. Turn the ignition switch ON.
2. Perform self-diagnosis of CONSULT-III.

YES >> Refer to EXL-47, "Diagnosis Procedure".
NO >> Refer to GI-35, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000003805617

1.CHECK HEADLAMP LEVELIZER CIRCUIT OF CONSULT-III

1. Turn ignition switch ON.
2. Turn the lighting switch 1ST.
3. Select "ACT MEASURED" and "ACT OUTPUT" of HEADLAMP LEVELIZER data monitor item.
4. Check that “ACT MEASURED” value is within approximately ± 3% to “ACT OUTPUT” value.

NOTE:
“ACT MEASURED” value is approximately 0% when shorted to the ground.

Is the measurement value normal?

YES >> Replace the auto levelizer control unit.
NO >> GO TO 2.

2.HEADLAMP LEVELIZER CIRCUIT INSPECTION

Check the headlamp levelizer circuit for short to ground. Refer to EXL-60, "Description".

Is the headlamp levelizer circuit normal?

YES >> Replace the auto levelizer control unit.
NO >> Repair or replace the malfunctioning part.

B2088 SHORT TO BATTERY

DTC Logic

INFOID:0000000003805618

DTC DETECTION LOGIC

[B2088] SHORT TO BATTERY

DTC detection condition	DTC erase conditions	Possible causes
Headlamp levelizer circuit is shorted to the battery for 1.5 seconds or more.	Ignition switch OFF	• Harness or connector • Auto levelizer control unit

DTC CONFIRMATION PROCEDURE

1.ERASE DTC

Erase DTC memory of HEADLAMP LEVELIZER with self-diagnosis of CONSULT-III.

>> GO TO 2.

2.DTC CONFIRMATION

1. Turn the ignition switch ON.
2. Perform self-diagnosis of CONSULT-III.

Is B2088 detected?

YES >> Refer to EXL-48, "Diagnosis Procedure".
NO >> Refer to GI-35, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000003805619

1.CHECK HEADLAMP LEVELIZER CIRCUIT OF CONSULT-III

1. Turn ignition switch ON.
2. Turn the lighting switch 1ST.
3. Select "ACT MEASURED" and "ACT OUTPUT" of HEADLAMP LEVELIZER data monitor item.
4. Check that “ACT MEASURED” value is within approximately ± 3% to “ACT OUTPUT” value.

NOTE:

“ACT MEASURED” value is approximately 100% when shorted to the battery.

Is the measurement value normal?

YES >> Replace the auto levelizer control unit.
NO >> GO TO 2.

2.HEADLAMP LEVELIZER CIRCUIT INSPECTION

Check the headlamp levelizer circuit for short to battery. Refer to EXL-60, "Description".

Is the headlamp levelizer circuit normal?

YES >> Replace the auto levelizer control unit.
NO >> Repair or replace the malfunctioning part.

B208A PARA NOT PROG

DTC Logic

INFOID:0000000003805620

DTC DETECTION LOGIC

[B208A] PARA NOT PROG

DTC detection condition	DTC erase conditions	Possible causes
Vehicle specification is not written	Vehicle specification is written	Configuration is not completed

Diagnosis Procedure

INFOID:0000000003805621

1.PERFORM CONFIGURATION

CONSULT-III WORK SUPPORT
Perform “WRITE CONFIGURATION”.

>> Refer to .EXL-9, "CONFIGURATION (HEADLAMP LEVELIZER) : Special Repair Requirement"

POWER SUPPLY AND GROUND CIRCUIT
BCM (BODY CONTROL MODULE)

BCM (BODY CONTROL MODULE) : Diagnosis Procedure

INFOID:0000000003894263

1.CHECK FUSE AND FUSIBLE LINK

Check that the following fuse and fusible link are not blown.

Signal name	Fuse and fusible link No.
Battery power supply	I
	10

Is the fuse fusing?

YES >> Replace the blown fuse or fusible link after repairing the affected circuit if a fuse or fusible link is blown.
NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

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

Terminals			Voltage (Approx.)
(+)		(–)	
BCM		Ground	
Connector	Terminal		
M118	1		Battery voltage
M119	11		

Is the measurement value normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M119	13		Existed

Does continuity exist?

YES >> INSPECTION END
NO >> Repair harness or connector.

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) : Diagnosis Procedure

INFOID:0000000003894265

1.CHECK FUSES AND FUSIBLE LINK

Check that the following IPDM E/R fuses or fusible links are not blown.

Signal name	Fuses and fusible link No.
Battery power supply	E
	50
	51

Is the fuse fusing?

YES >> Replace the blown fuse or fusible link after repairing the affected circuit if a fuse or fusible link is blown.
NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check voltage between IPDM E/R harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
IPDM E/R			
Connector	Terminal	Ground	
E9	1		Battery voltage

Is the measurement value normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK GROUND CIRCUIT

Check continuity between IPDM E/R harness connectors and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E10	12		Existed
E11	41		

Does continuity exist?

YES >> INSPECTION END
NO >> Repair harness or connector.

AUTO LEVELIZER CONTROL UNIT

AUTO LEVELIZER CONTROL UNIT : Diagnosis Procedure

INFOID:0000000003774348

1.CHECK FUSES

Check that any of the following fuses are fusing

Signal name	Location	Fuse No.	Capacity
Ignition power supply	Fuse block (J/B)	3	10A

Is the fuse fusing?

YES >> Repair the applicable circuit. And then replace the fuse.
NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect auto levelizer control unit connector.
3. Turn the ignition switch ON.
4. Check voltage between auto levelizer control unit harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Auto levelizer control unit		Ground	
Connector	Terminal		
C8	2		Battery voltage

Is the measurement normal?

YES >> GO TO 3.
NO >> Repair the harnesses or connectors.

3.CHECK GROUND CIRCUIT

Check continuity between auto levelizer control unit harness connector and ground.

Auto levelizer control unit		Ground	Continuity
Connector	Terminal		
C8	1		Existed

Does continuity not exist?

YES >> Power supply and ground circuit are normal.
NO >> Repair the harnesses or connectors.

EXTERIOR LAMP FUSE

Description

INFOID:0000000003773554

Fuse list

Unit	Location	Fuse No.	Capacity
Headlamp HI (LH)	IPDM E/R	#54	10 A
Headlamp HI (RH)	IPDM E/R	#55	10 A
Headlamp LO (LH)	IPDM E/R	#56	15 A
Headlamp LO (RH)	IPDM E/R	#57	15 A
Front fog lamp	IPDM E/R	#58	15 A
Parking lamp	IPDM E/R	#52	10 A
• Tail lamp • License plate lamp • Each illumination	IPDM E/R	#53	10 A
Stop lamp	FUSE BLOCK (J/B)	#7	10 A
Back-up lamp	FUSE BLOCK (J/B)	#4	10 A

Diagnosis Procedure

INFOID:0000000003773555

1.CHECK FUSE

Check that the following fuses are not fusing.

Unit	Location	Fuse No.	Capacity
Headlamp HI (LH)	IPDM E/R	#54	10 A
Headlamp HI (RH)	IPDM E/R	#55	10 A
Headlamp LO (LH)	IPDM E/R	#56	15 A
Headlamp LO (RH)	IPDM E/R	#57	15 A
Front fog lamp	IPDM E/R	#58	15 A
Parking lamp	IPDM E/R	#52	10 A
• Tail lamp • License plate lamp • Each illumination	IPDM E/R	#53	10 A
Stop lamp	FUSE BLOCK (J/B)	#7	10 A
Back-up lamp	FUSE BLOCK (J/B)	#4	10 A

Is the fuse fusing?

YES >> Repair the applicable circuit. And then replace the fuse.
NO >> The fuse is normal.

HEADLAMP (HI) CIRCUIT

Component Function Check

INFOID:0000000003774352

1.CHECK HEADLAMP (HI) OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-11, "Diagnosis Description".
2. Check that the headlamp switches to the high beam.

CONSULT-III ACTIVE TEST
1. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
2. With operating the test items, check that the headlamp (HI) is turned ON.

Hi : Headlamp (HI) ON
Off : Headlamp (HI) OFF

NOTE:
ON/OFF is repeated 1 second each.

Is the headlamp (HI) turned ON?

YES >> Headlamp (HI) circuit is normal.
NO >> Refer to EXL-54, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000003774353

1.CHECK HEADLAMP (HI) OUTPUT VOLTAGE

CONSULT-III ACTIVE TEST
1. Turn the ignition switch OFF.
2. Disconnect the headlamp high connector.
3. Turn the ignition switch ON.
4. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
5. With operating the test items, check the voltage between the IPDM E/R harness connector and the ground.

Terminals				Test item	Voltage (Approx.)
(+)			(–)		
IPDM E/R				EXTERNAL LAMPS	
Connector		Terminal			
RH	E345	89	Ground	Hi	Battery voltage
				Off	0 V
LH		90		Hi	Battery voltage
				Off	0 V

Is the measurement value normal?

YES >> GO TO 2.
NO >> GO TO 3.

2.CHECK HEADLAMP (HI) OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between the IPDM E/R harness connector and the headlamp high harness connector.

IPDM E/R			Headlamp high		Continuity
Connector		Terminal	Connector	Terminal	
RH	E345	89	E317	1	Existed
LH		90	E316	1	

Does continuity exist?

YES >> GO TO 5.
NO >> Repair the harnesses or connectors.

3.CHECK HEADLAMP (HI) FUSE

1. Turn the ignition switch OFF.
2. Check that the following fuses are not fusing.

Unit	Location	Fuse No.	Capacity
Headlamp HI (RH)	IPDM E/R	#55	10 A
Headlamp HI (LH)	IPDM E/R	#54	10 A

Is the fuse fusing?

YES >> GO TO 4.
NO >> Replace IPDM E/R.

4.CHECK HEADLAMP HIGH (HI) SHORT CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between the IPDM E/R harness connector terminal and the ground.

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E345	89		Not existed
LH		90		

Does continuity exist?

YES >> Repair the harnesses or connectors. And then replace the fuse.
NO >> Replace the fuse. (Replace IPDM E/R if the fuse is fusing again.)

5.CHECK HEADLAMP (HI) GROUND OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the headlamp high connector.
3. Check continuity between the headlamp high harness connector and ground.

Headlamp high			Ground	Continuity
Connector		Terminal		
RH	E317	2		Existed
LH	E316	2		

Does continuity exist?

YES >> Replace the headlamp (HI) bulb. (Bulb socket is abnormally.)
NO >> Repair the harnesses or connectors.

HEADLAMP (LO) CIRCUIT

Component Function Check

INFOID:0000000003774354

1.CHECK HEADLAMP (LO) OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-11, "Diagnosis Description".
2. Check that the headlamp is turned ON.

CONSULT-III ACTIVE TEST
1. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
2. With operating the test items, check that the headlamp (LO) is turned ON.

Lo : Headlamp (LO) ON
Off : Headlamp (LO) OFF

Is the headlamp (LO) turned ON?

YES >> Headlamp (LO) is normal.
NO >> Refer to EXL-56, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000003774355

1.CHECK HEADLAMP (LO) OUTPUT VOLTAGE

CONSULT-III ACTIVE TEST
1. Turn the ignition switch OFF.
2. Disconnect the front combination lamp connector.
3. Turn the ignition switch ON.
4. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
5. With operating the test items, check the voltage between the IPDM E/R harness connector and the ground.

Terminals				Test item	Voltage (Approx.)
(+)			(–)		
IPDM E/R				EXTERNAL LAMPS	
Connector		Terminal			
RH	E345	83	Ground	Lo	Battery voltage
				Off	0 V
LH		84		Lo	Battery voltage
				Off	0 V

Is the measurement value normal?

YES >> GO TO 2.
NO >> GO TO 3.

2.CHECK HEADLAMP (LO) OPEN CIRCUIT

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

IPDM E/R			Front combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E345	83	E319	3	Existed
LH		84	E318	3	

Does continuity exist?

YES >> GO TO 5.
NO >> Repair the harnesses or connectors.

3. CHECK HEADLAMP (LO) FUSE

1. Turn the ignition switch OFF.
2. Check that the following fuses are not fusing.

Unit	Lotion	Fuse No.	Capacity
Headlamp LO (RH)	IPDM E/R	#57	15 A
Headlamp LO (LH)	IPDM E/R	#56	15 A

Is the fuse fusing?

YES >> GO TO 4.
NO >> Replace IPDM E/R.

4. CHECK HEADLAMP (LO) SHORT CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between the IPDM E/R harness connector and the ground.

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E345	83		Not existed
LH		84		

Does continuity exist?

YES >> Repair the harnesses or connectors. And then replace the fuse.
NO >> Replace the fuse. (Replace IPDM E/R if the fuse is fusing again.)

5. CHECK HEADLAMP (LO) GROUND OPEN CIRCUIT

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

Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E319	4		Existed
LH	E318	4		

Does continuity exist?

YES >> Perform the xenon headlamp diagnosis. Refer to EXL-58, "Description".
NO >> Repair the harnesses or connectors.

XENON HEADLAMP

Description

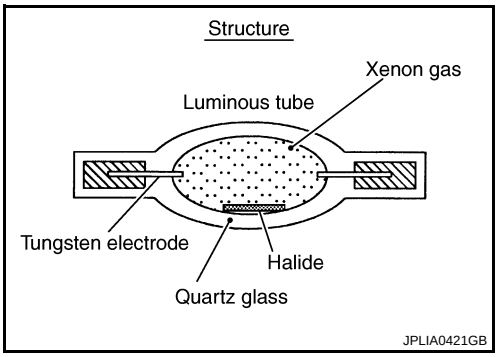
INFOID:0000000003773562

OUTLINE

- The lamp light source is by the arch discharge by applying high voltage into the xenon gas-filled bulb instead of the halogen bulb filament.
- Sight becomes more natural and brighter because the amount of light are gained adequately and the color of light is sunshine-like white.
- The xenon bulb drops the amount of light, repeats blinking, and illuminates in red if the bulb reaches the service life.

ILLUMINATION PRINCIPLE

1. Discharging starts in high voltage pulse between bulb electrodes.
2. Xenon gas is activated by current between electrodes. Pale light is emitted.
3. The luminous tube (bulb) temperature elevates. Evaporated halide is activated by discharge. The color of light changes into white.



NOTE:

- Brightness and the color of light may change slightly immediately after the headlamp turned ON until the xenon bulb becomes stable. This is not malfunction.
- Illumination time lag may occur between right and left. This is not malfunction.

PRECAUTIONS FOR TROUBLE DIAGNOSIS

Representative malfunction examples are; "Light does not turn ON", "Light blinks", and "Brightness is inadequate." The cause often be the xenon bulb. Such malfunctions, however, are occurred occasionally by HID control unit malfunction or lamp case malfunction. Specify the malfunctioning part with diagnosis procedure.

WARNING:

- **Never touch the harness, HID control unit, the inside and metal part of lamp when turning the headlamp ON or operating the lighting switch.**
- **Never work with wet hands.**

CAUTION:

- **Never perform HID control unit circuit diagnosis with a circuit tester or an equivalent.**
- **Temporarily install the headlamps on the vehicle. Connect the battery to the connector (vehicle side) when checking ON/OFF status.**
- **Disconnect the battery negative terminal before disconnecting the lamp socket connector or the harness connector.**
- **Check for fusing of the fusible link(s), open around connector, short, disconnection if the symptom is caused by electric error.**

NOTE:

- Turn the switch OFF once before turning ON, if the ON/OFF is inoperative.
- The xenon bulb drops the amount of light, repeats blinking, and illuminates in red if the bulb reaches the service life.

Diagnosis Procedure

INFOID:0000000003773563

1.CHECK XENON BULB

Install the normal bulb to the applicable headlamp. Check that the lighting switch is turned ON.

Is the headlamp turned ON?

YES >> Replace the xenon bulb.
NO >> GO TO 2.

2.CHECK HID CONTROL UNIT

Install the normal HID control unit to the applicable headlamp. Check that the lighting switch is turned ON.

Is the headlamp turned ON?

YES >> Replace HID control unit.
NO >> Xenon headlamp is normal. Check the headlamp control system.

HEADLAMP LEVELIZER CIRCUIT

Description

INFOID:0000000003774349

The headlamp levelizer adjusts the headlamp light axis upward and downward with the aiming motor integrated in the front combination lamp.

Component Function Check

INFOID:0000000003774350

1.CHECK HEADLAMP LEVELIZER OPERATION

CONSULT-III ACTIVE TEST
1. Start the engine.
2. Turn the lighting switch 2ND.
3. Select “LAMP TEST” of HEADLAMP LEVELIZER active test item.
4. With operating the test item, check the light axis operation.

Test item	Light axis operation
LAMP TEST	
MIN	Moves the light axis to the highest position.
MID	Moves the light axis to the initial position.
MAX	Moves the light axis to the lowest position.

Is the operation normal?

YES >> Headlamp levelizer circuit is normal.
NO >> Refer to EXL-60, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000003774351

1.CHECK AIMING MOTOR DRIVE SIGNAL OUTPUT

CONSULT-III ACTIVE TEST
1. Start the engine.
2. Turn the light switch 2ND.
3. Select “LAMP TEST” of HEADLAMP LEVELIZER active test item.
4. With operating the test items, check the voltage between the auto levelizer control unit harness connector and the ground.

Terminals			Test item	Voltage (Approx.)
(+)		(–)		
Auto levelizer control unit		Ground	LAMP TEST	
Connector	Terminal			
C8	7		MIN	1.4 V
			MID	6.3 V
			MAX	9.3 V

Is the measurement value normal?

YES >> GO TO 2.
Fixed at 0 V>>GO TO 3.
Fixed at battery voltage>>GO TO 4.

2.CHECK AIMING MOTOR DRIVE OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect auto levelizer control unit connector and headlamp aiming motor connector.
3. Check continuity between auto levelizer control unit harness connector and the headlamp aiming motor harness connector.

Auto levelizer control unit			headlamp aiming motor		Continuity
Connector		Terminal	Connector	Terminal	
RH	C8	7	E336	2	Existed
LH			E335	2	

Does continuity exist?

YES >> Replace the front combination lamp.
NO >> Repair the harnesses and connectors.

3. CHECK AIMING MOTOR DRIVE SHORT CIRCUIT (SHORT TO GROUND)

1. Turn the ignition switch OFF.
2. Disconnect auto levelizer control unit connector and headlamp aiming motor connector.
3. Check continuity between auto levelizer control unit harness connector and ground.

Terminals			Continuity
(+)		(–)	
Auto levelizer control unit		Ground	
Connector	Terminal		
C8	7		Not existed

Does continuity exist?

YES >> Repair the harness and connectors.
NO >> Replace auto levelizer control unit.

4. CHECK AIMING MOTOR DRIVE SHORT CIRCUIT (SHORT TO BATTERY)

1. Turn the ignition switch OFF.
2. Disconnect auto levelizer control unit connector and headlamp aiming motor connector.
3. Check voltage between auto levelizer control unit harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Auto levelizer control unit		Ground	
Connector	Terminal		
C8	7		0 V

Is the measurement value normal?

YES >> Replace auto levelizer control unit.
NO >> Repair the harness and connectors.

FRONT FOG LAMP CIRCUIT

Component Function Check

INFOID:0000000003773564

1.CHECK FRONT FOG LAMP OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-11, "Diagnosis Description".
2. Check that the front fog lamp is turned ON.

CONSULT-III ACTIVE TEST
1. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
2. With operating the test items, check that the front fog lamp is turned ON.

Fog : Front fog lamp ON
Off : Front fog lamp OFF

Is the front fog lamp turned ON?

YES >> Front fog lamp circuit is normal.
NO >> Refer to EXL-62, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000003773565

1.CHECK FRONT FOG LAMP FUSE

1. Turn the ignition switch OFF.
2. Check that the following fuse is not fusing.

Unit	Location	Fuse No.	Capacity
Front fog lamp	IPDM E/R	#58	15 A

Is the fuse fusing?

YES >> GO TO 2.
NO >> GO TO 3.

2.CHECK FRONT FOG LAMP SHORT CIRCUIT

1. Disconnect IPDM E/R connector and the front fog connector.
2. Check continuity between the IPDM E/R harness connector and the ground.

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E345	86		Not existed
LH		87		

Does continuity exist?

YES >> Repair the harnesses or connectors. And then replace the fuse.
NO >> Replace the fuse. (Replace IPDM E/R if the fuse is fusing again.)

3.CHECK FRONT FOG LAMP BULB

Check the applicable lamp bulb.

Is the bulb normal?

YES >> GO TO 4.
NO >> Replace the bulb.

4.CHECK FRONT FOG LAMP OUTPUT VOLTAGE

CONSULT-III ACTIVE TEST
1. Disconnect the front fog lamp connector.
2. Turn the ignition switch ON.
3. Select “EXTERNAL LAMPS” of IPDM E/R active test item.

4. With operating the test items, check the voltage between the IPDM E/R harness connector and the ground.

Terminals				Test item	Voltage (Approx.)
(+)			(–)		
IPDM E/R			Ground	EXTERNAL LAMPS	
Connector		Terminal			
RH	E345	86		Fog	Battery voltage
				Off	0 V
LH		87		Fog	Battery voltage
				Off	0 V

Is the measurement value normal?

YES >> GO TO 5.
NO >> Replace IPDM E/R.

5.CHECK FRONT FOG LAMP OPEN CIRCUIT

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

IPDM E/R			Front fog lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E345	86	E332	1	Existed
LH		87	E331	1	

Does continuity exist?

YES >> GO TO 6.
NO >> Repair the harnesses or connectors.

6.CHECK FRONT FOG LAMP GROUND CIRCUIT OPEN CIRCUIT

Check continuity between the front fog lamp harness connector and the ground.

Front fog lamp			Ground	Continuity
Connector		Terminal		
RH	E332	2		Existed
LH	E331	2		

Does continuity exist?

YES >> Replace the front fog lamp.
NO >> Repair the harnesses or connectors.

PARKING LAMP CIRCUIT

Component Function Check

INFOID:0000000003773566

1.CHECK PARKING LAMP OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-11, "Diagnosis Description".
2. Check that the parking lamp is turned ON.

CONSULT-III ACTIVE TEST
1. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
2. With operating the test items, check that the parking lamp is turned ON.

TAIL : Parking lamp ON
Off : Parking lamp OFF

Is the parking lamp turned ON?

YES >> Parking lamp circuit is normal.
NO >> Refer to EXL-64, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000003773567

1.CHECK PARKING LAMP FUSE

1. Turn the ignition switch OFF.
2. Check that the following fuses are not fusing.

Unit	Location	Fuse No.	Capacity
Parking lamp	IPDM E/R	#52	10 A

Is the fuse fusing?

YES >> GO TO 2.
NO >> GO TO 3.

2.CHECK PARKING LAMP SHORT CIRCUIT

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

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E346	91		Not existed
LH		92		

Does continuity exist?

YES >> Repair the harnesses or connectors. And then replace the fuse.
NO >> Replace the fuse. (Replace IPDM E/R if fusing is found again.)

3.CHECK PARKING LAMP BULB

Check the applicable lamp bulb.

Is the bulb normal?

YES >> GO TO 4.
NO >> Replace the bulb.

4.CHECK PARKING LAMP OUTPUT VOLTAGE

CONSULT-III ACTIVE TEST
1. Disconnect the front combination lamp connector.
2. Turn the ignition switch ON.
3. Select “EXTERNAL LAMPS” of IPDM E/R active test item.

4. With operating the test items, check the voltage between the IPDM E/R harness connector and the ground.

Terminals				Test item	Voltage (Approx.)
(+)			(–)		
IPDM E/R			Ground	EXTERNAL LAMPS	
Connector		Terminal			
RH	E346	91		TAIL	Battery voltage
				Off	0 V
LH		92		TAIL	Battery voltage
				Off	0 V

Is the measurement value normal?

YES >> GO TO 5.
NO >> Replace IPDM E/R.

5. CHECK PARKING LAMP OPEN CIRCUIT

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

IPDM E/R			Front combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E346	91	E319	1	Existed
LH		92	E318	1	

Does continuity exist?

YES >> GO TO 6.
NO >> Repair the harnesses or connectors.

6. CHECK PARKING LAMP GROUND OPEN CIRCUIT

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

Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E319	4		Existed
LH	E318	4		

Does continuity exist?

YES >> Replace the front combination lamp.
NO >> Repair the harnesses or connectors.

TURN SIGNAL LAMP CIRCUIT

Description

INFOID:0000000003773570

BCM performs the high flasher operation (fail-safe) if any bulb or harness of the turn signal lamp circuit is open.

NOTE:

The turn signal lamp blinks at normal speed when using the hazard warning lamp.

Component Function Check

INFOID:0000000003773571

1.CHECK TURN SIGNAL LAMP

CONSULT-III ACTIVE TEST

1. Select “FLASHER” of BCM (FLASHER) active test item.
2. With operating the test items, check that the turn signal lamp is turned ON.

LH : Turn signal lamps (LH) ON
RH : Turn signal lamps (RH) ON
Off : Turn signal lamps OFF

Is the turn signal lamp turned ON?

YES >> Turn signal lamp circuit is normal.
NO >> Refer to EXL-66, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000003773572

1.CHECK TURN SIGNAL LAMP BULB

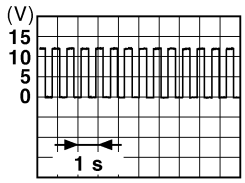
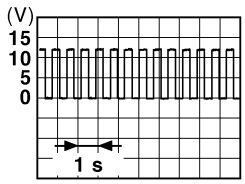
Check the applicable lamp bulb.

Is the bulb normal?

YES >> GO TO 2.
NO >> Replace the bulb.

2.CHECK TURN SIGNAL LAMP OUTPUT VOLTAGE

1. Turn the ignition switch OFF.
2. Disconnect the front combination lamp connector, the door mirror connector or the rear combination lamp connector.
3. Turn the ignition switch ON.
4. With operating the turn signal switch, check the voltage between the BCM harness connector and the ground.

Terminals				Condition	Voltage (Approx.)
(+)			(–)		
BCM				Turn signal switch	
Connector		Terminal			
Front/side RH	M119	17	Ground	LH or RH	 PKID0926E
Front/side LH		18			
				OFF	0 V
Rear RH	M120	20		LH or RH	 PKID0926E
Rear LH		25			
				OFF	0 V

Is the measurement value normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-78, "Exploded View".

3. CHECK TURN SIGNAL LAMP OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect BCM connector.
3. Check continuity between the BCM harness connector and the front combination lamp, the door mirror or the rear combination lamp harness connector.

Front turn signal lamp

BCM			Front combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	M119	17	E319	2	Existed
LH		18	E318	2	

Side turn signal lamp

BCM			Door mirror		Continuity
Connector		Terminal	Connector	Terminal	
RH	M119	17	D43	2	Existed
LH		18	D3	2	

Rear turn signal lamp

BCM			Rear combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	M120	20	B59	1	Existed
LH		25	B80	1	

Does continuity exist?

YES >> GO TO 4.
NO >> Repair the harnesses or connectors.

4. CHECK TURN SIGNAL LAMP SHORT CIRCUIT

Check continuity between the BCM harness connector and the ground.

BCM			Ground	Continuity
Connector		Terminal		
Front/side RH	M119	17		Not existed
Front/side LH		18		
Rear RH	M120	20		
Rear LH		25		

Does continuity exist?

YES >> Repair the harnesses or connectors.
NO >> GO TO 5.

5.CHECK TURN SIGNAL LAMP GROUND OPEN CIRCUIT

Check continuity between the front combination lamp, the door mirror or the rear combination lamp and the ground.

Front turn signal lamp

Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E319	4		Existed
LH	E318	4		

Side turn signal lamp

Door mirror			Ground	Continuity
Connector		Terminal		
RH	D43	10		Existed
LH	D3	10		

Rear turn signal lamp

Rear combination lamp			Ground	Continuity
Connector		Terminal		
RH	B59	5		Existed
LH	B80	5		

Does continuity exist?

YES >> Replace the front combination lamp, door mirror assembly or the rear combination lamp.
NO >> Repair the harnesses or connectors.

OPTICAL SENSOR

Description

INFOID:0000000003773573

Optical sensor converts the outside brightness (lux) to voltage and transmits the optical sensor signal to BCM.

Component Function Check

INFOID:0000000003773574

1.CHECK OPTICAL SENSOR SIGNAL BY CONSULT-III

CONSULT-III DATA MONITOR
1. Turn the ignition switch ON.
2. Select "OPTICAL SENSOR" of BCM (HEADLAMP) data monitor item.
3. Turn the lighting switch AUTO.
4. With the optical sensor illuminating, check the monitor status.

Monitor item	Condition		Voltage (Approx.)
OPTICAL SENSOR	Optical sensor	When illuminating	3.1 V or more *
		When shutting off light	0.6 V or less

*: Illuminates the optical sensor. The value may be less than the standard value if brightness is weak.

Is the item status normal?

YES >> Optical sensor is normal.
NO >> Refer to EXL-69, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000003773575

1.CHECK OPTICAL SENSOR POWER SUPPLY INPUT

1. Turn the ignition switch ON.
2. Turn the lighting switch AUTO.
3. Check the voltage between the optical sensor harness connector and the ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Optical sensor		Ground	
Connector	Terminal		
M17	1		5 V

Is the measurement value normal?

YES >> GO TO 2.
NO >> GO TO 4.

2.CHECK OPTICAL SENSOR GROUND INPUT

Check the voltage between the optical sensor harness connector and the ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Optical sensor		Ground	
Connector	Terminal		
M17	3		0 V

Is the measurement value normal?

YES >> GO TO 3.
NO >> GO TO 6.

3.CHECK OPTICAL SENSOR SIGNAL OUTPUT

With illuminating the optical sensor, check the voltage between the optical sensor harness connector and the ground.

Terminals			Condition	Voltage (Approx.)
(+)		(–)		
Optical sensor			Optical sensor	
Connector	Terminal			
M17	2	Ground	When illuminating	3.1 V or more *
			When shutting off light	0.6 V or less

*: Illuminate the optical sensor. The value may be less than the standard if brightness is weak.

Is the measurement value normal?

YES >> GO TO 7.
NO >> Replace the optical sensor.

4. CHECK OPTICAL SENSOR OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the optical sensor connector and BCM connector.
3. Check continuity between the optical sensor harness connector and the BCM harness connector.

Optical sensor		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M17	1	M123	138	Existed

Does continuity exist?

YES >> GO TO 5.
NO >> Repair the harnesses or connectors.

5. CHECK OPTICAL SENSOR SHORT CIRCUIT

Check the continuity between the optical sensor harness connector and the ground.

Optical sensor		Ground	Continuity
Connector	Terminal		
M17	1		Not existed

Does continuity exist?

YES >> Repair the harnesses or connectors.
NO >> Replace BCM.

6. CHECK OPTICAL SENSOR GROUND OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the optical sensor connector and BCM connector.
3. Check continuity between the optical sensor harness connector and the BCM harness connector.

Optical sensor		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M17	3	M123	137	Existed

Does continuity exist?

YES >> Replace BCM.
NO >> Repair the harnesses or connectors.

7. CHECK OPTICAL SENSOR SIGNAL OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the optical sensor connector and BCM connector.

3. Check continuity between the optical sensor harness connector and the BCM harness connector.

Optical sensor		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M17	2	M123	113	Existed

Does continuity exist?

YES >> GO TO 8.
NO >> Repair the harnesses or connectors.

8. CHECK OPTICAL SENSOR SHORT CIRCUIT

Check the continuity between the optical sensor harness connector and the ground.

Optical sensor		Ground	Continuity
Connector	Terminal		
M17	2		Not existed

Does continuity exist?

YES >> Repair the harnesses or connectors.
NO >> Replace BCM.

HAZARD SWITCH

Component Function Check

INFOID:0000000003773576

1.CHECK HAZARD SWITCH SIGNAL BY CONSULT-III

CONSULT-III DATA MONITOR
1. Turn the ignition switch ON.
2. Select “HAZARD SW” of BCM (FLASHER) data monitor item.
3. With operating the hazard switch, check the monitor status.

Monitor item	Condition		Monitor status
HAZARD SW	Hazard switch	ON	On
		OFF	Off

Is the item status normal?

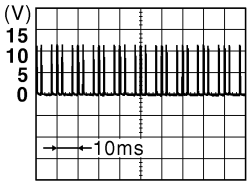
YES >> Hazard switch circuit is normal.
NO >> Refer to EXL-72, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000003773577

1.CHECK HAZARD SWITCH SIGNAL INPUT

With operating the hazard switch, check the voltage between the BCM harness connector and the ground.

Terminals			Condition	Voltage (Approx.)
(+)		(–)		
BCM			Hazard switch	
Connector	Terminal			
M122	110	Ground	ON	0 V
			OFF	

JPMIA0154GB

Is the measurement value normal?

YES >> Replace BCM. Refer to BCS-78, "Exploded View".
NO >> GO TO 2.

2.CHECK HAZARD SWITCH SIGNAL OPEN CIRCUIT

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

Hazard switch		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M45	2	M122	110	Existed

Does continuity exist?

YES >> GO TO 3.
NO >> Repair the harnesses or connectors.

3.CHECK HAZARD SWITCH SIGNAL SHORT CIRCUIT

Check continuity between the hazard switch harness connector and the ground.

Hazard switch		Ground	Continuity
Connector	Terminal		
M45	2		Not existed

Does continuity exist?

YES >> Repair the harnesses or connectors.
NO >> GO TO 4.

4. CHECK HAZARD SWITCH GROUND OPEN CIRCUIT

Check continuity between the hazard switch harness connector and the ground.

Hazard switch		Ground	Continuity
Connector	Terminal		
M45	1		Existed

Does continuity exist?

YES >> Replace the hazard switch.
NO >> Repair the harnesses or connectors.

TAIL LAMP CIRCUIT

Component Function Check

INFOID:0000000003773578

NOTE:
Check the license plate lamp circuit if the tail lamp and the license plate lamp are not turned ON. Refer to EXL-76, "Component Function Check".

1.CHECK TAIL LAMP OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-11, "Diagnosis Description".
2. Check that the tail lamp is turned ON.

CONSULT-III ACTIVE TEST
1. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
2. With operating the test items, check that the tail lamp is turned ON.

TAIL : Tail Lamp ON
Off : Tail lamp OFF

Is the tail lamp turned ON?

YES >> Tail lamp circuit is normal.
NO >> Refer to EXL-74, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000003773579

1.CHECK TAIL LAMP FUSE

1. Turn the ignition switch OFF.
2. Check that the following fuses are not fusing.

Unit	Location	Fuse No.	Capacity
Tail lamp	IPDM E/R	#53	10 A

Is the fuse fusing?

YES >> Repair the malfunctioning part before replacing the fuse.
NO >> GO TO 2.

2.CHECK TAIL LAMP OUTPUT VOLTAGE

CONSULT-III ACTIVE TEST
1. Disconnect the rear combination lamp connector.
2. Turn the ignition switch ON.
3. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
4. With operating the test items, check the voltage between the IPDM E/R harness connector and the ground.

Terminals			Test item	Voltage (Approx.)
(+)		(–)		
IPDM E/R		Ground	EXTERNAL LAMPS	
Connector	Terminal			
E10	7		TAIL	Battery voltage
			Off	0 V

Is the measurement value normal?

YES >> GO TO 3.
NO >> Replace IPDM E/R.

3.CHECK TAIL LAMP OPEN CIRCUIT

1. Turn the ignition switch OFF.

2. Disconnect IPDM E/R connector.
3. Check continuity between the IPDM E/R harness connector and the rear combination lamp harness connector.

IPDM E/R			Rear combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E10	7	B59	2	Existed
LH			B80	2	

Does continuity exist?

YES >> GO TO 4.
NO >> Repair the harnesses or connectors.

4. CHECK TAIL LAMP GROUND OPEN CIRCUIT

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

Rear combination lamp			Ground	Continuity
Connector		Terminal		
RH	B59	5		Existed
LH	B80	5		

Does continuity exist?

YES >> Replace the rear combination lamp.
NO >> Repair the harnesses or connectors.

LICENSE PLATE LAMP CIRCUIT

Component Function Check

INFOID:0000000003773580

1.CHECK LICENSE PLATE LAMP OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-11, "Diagnosis Description".
2. Check that the license plate lamp is turned ON.

CONSULT-III ACTIVE TEST
1. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
2. With operating the lighting switch, check that the license plate lamp is turned ON.

TAIL : License plate lamp ON
Off : License plate lamp OFF

Is the license plate lamp turned ON?

YES >> License plate lamp circuit is normal.
NO >> Refer to EXL-76, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000003773581

1.CHECK LICENSE PLATE LAMP BULB

Check the applicable lamp bulb.

Is the bulb normal?

YES >> GO TO 2.
NO >> Replace the bulb.

2.CHECK LICENSE PLATE LAMP OPEN CIRCUIT

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

IPDM E/R			License plate lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E10	7	T4	1	Existed
LH			T3	1	

Does continuity exist?

YES >> GO TO 3.
NO >> Repair the harnesses or connectors.

3.CHECK LICENSE PLATE LAMP GROUND OPEN CIRCUIT

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

License plate lamp			Ground	Continuity
Connector		Terminal		
RH	T4	2		Existed
LH	T3	2		

Does continuity exist?

YES >> Replace the license plate lamp.
NO >> Repair the harnesses or connectors.

REAR FOG LAMP CIRCUIT

Component Function Check

INFOID:0000000003811065

1.CHECK REAR FOG LAMP OPERATION

CONSULT-III ACTIVE TEST
1. Select “RR FOG LAMP” of BCM (HEAD LAMP) active test item.
2. With operating the test items, check that the rear fog lamp is turned ON.

On : Rear fog lamp ON
Off : Rear fog lamp OFF

Is rear fog lamp turned ON?

YES >> Rear fog lamp circuit is normal.
NO >> Refer to EXL-77, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000003811066

1.CHECK REAR FOG LAMP BULB

Check the applicable lamp bulb.

Is the bulb normal?

YES >> GO TO 2.
NO >> Replace the bulb.

2.CHECK REAR FOG LAMP OUTPUT VOLTAGE

CONSULT-III ACTIVE TEST
1. Turn the ignition switch OFF.
2. Disconnect the rear fog lamp connector.
3. Turn the ignition switch ON.
4. Select “RR FOG LAMP” of BCM (HEAD LAMP) active test item.
5. With operating the test items, check voltage between BCM harness connector and ground.

Terminals			Test item	Voltage (approx.)
(+)		(–)		
BCM		Ground	RR FOG LAMP	
Connector	Terminal			
M120	24		On	12 V
			Off	0 V

Is the measurement value normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-78, "Exploded View".

3.CHECK REAR FOG LAMP OPEN CIRCUIT

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

BCM		Rear fog lamp		Continuity
Connector	Terminal	Connector	Terminal	
M120	24	B70	1	Existed

Does continuity exist?

YES >> GO TO 4.
NO >> Repair the harnesses or connectors.

4.CHECK REAR FOG LAMP SHORT CIRCUIT

Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M120	24		Not existed

Does continuity exist?

YES >> GO TO 5.
NO >> Repair the harnesses or connectors.

5.CHECK REAR FOG LAMP GROUND OPEN CIRCUIT

Check continuity between rear fog lamp harness connector and ground.

Rear fog lamp		Ground	Continuity
Connector	Terminal		
B70	2		Existed

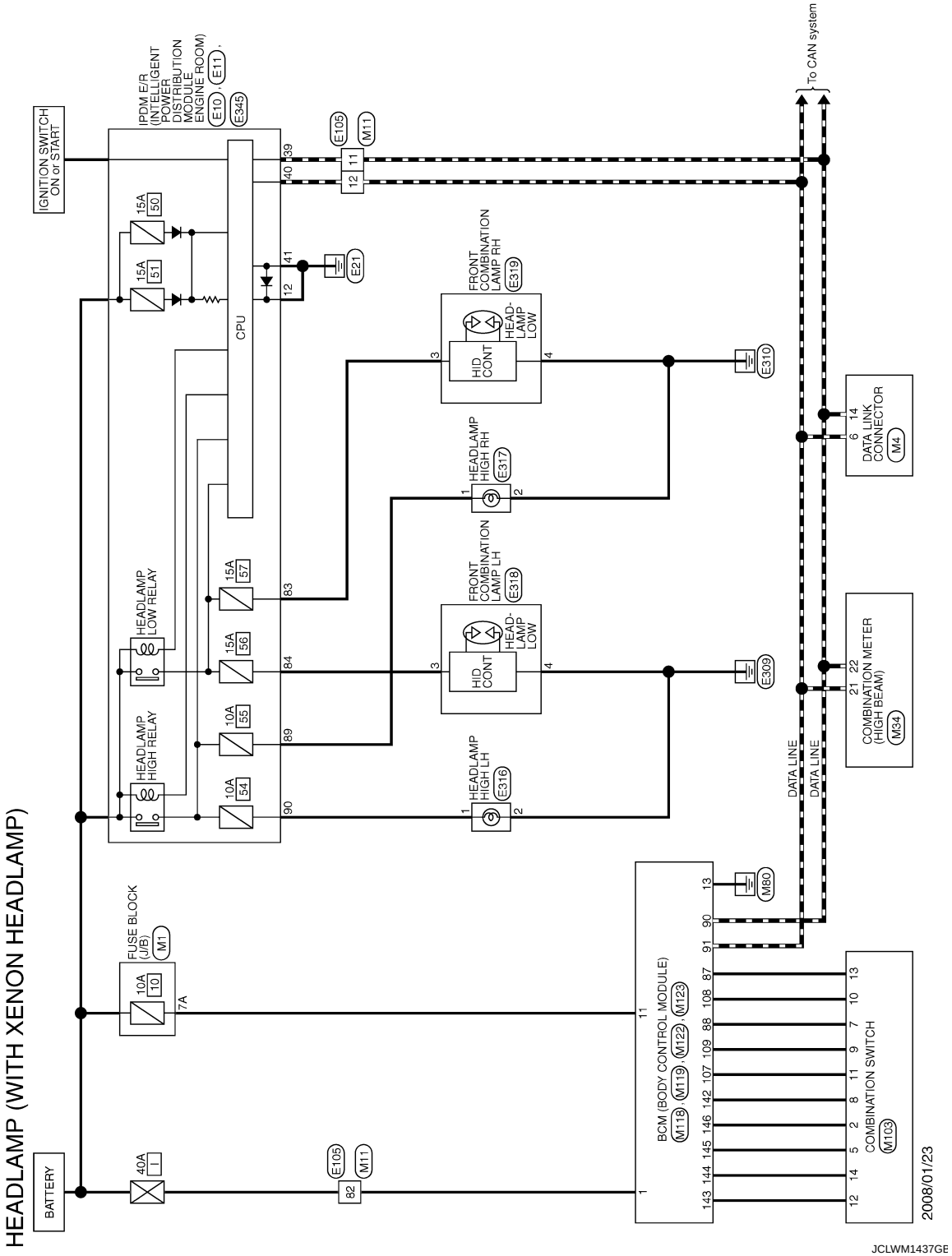
Does continuity exist?

YES >> Replace the rear fog lamp.
NO >> Repair the harnesses or connectors.

HEADLAMP SYSTEM

Wiring Diagram - HEADLAMP -

INFOID:0000000003773582



HEADLAMP (WITH XENON HEADLAMP)

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH20FW-CS12-M4-1V

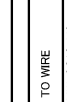
Terminal No.	Color of Wire	Signal Name [Specification]
12	B/W	–

Connector No.	E11
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH08FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
39	P	–
40	L	–
41	B	–

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH70MW-CS10-M3



Terminal No.	Color of Wire	Signal Name [Specification]
11	P	–
12	L	–
82	LG	–

Connector No.	E316
Connector Name	HEADLAMP HIGH LH
Connector Type	FHZ02FB-1V



Terminal No.	Color of Wire	Signal Name [Specification]
1	O	–
2	B	–

Connector No.	E317
Connector Name	HEADLAMP HIGH RH
Connector Type	FHZ02FB-1V

Terminal No.	Color of Wire	Signal Name [Specification]
1	W	–
2	B	–

Connector No.	E318
Connector Name	FRONT COMBINATION LAMP LH
Connector Type	RS04FGY-PR

Terminal No.	Color of Wire	Signal Name [Specification]
3	SB	–
4	B/W	–

Connector No.	E319
Connector Name	FRONT COMBINATION LAMP RH
Connector Type	RS04FGY-PR

Terminal No.	Color of Wire	Signal Name [Specification]
3	Y	–
4	B/W	–

Connector No.	E345
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS08FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
83	Y	–
84	SB	–
89	W	–
90	O	–

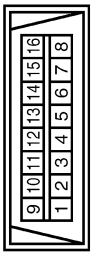
JCLWM1438GE

HEADLAMP (WITH XENON HEADLAMP)

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS06FW-M2

Terminal No.	Color of Wire	Signal Name [Specification]
7A	Y/R	–

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH70FW-CS10-M3



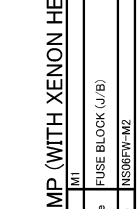
Terminal No.	Color of Wire	Signal Name [Specification]
11	P	–
12	L	–
82	W/B	–

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
21	L	CAN-H
22	P	CAN-L

Connector No.	M103
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
2	G/Y	OUTPUT 4
5	LG/R	OUTPUT 3
7	R/G	INPUT 3
8	LG/B	OUTPUT 5
9	R/B	INPUT 2
10	P/B	INPUT 4
11	R/W	INPUT 1
12	L/W	OUTPUT 1
13	R/Y	INPUT 5
14	G/B	OUTPUT 2

Connector No.	M118
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	M03FB-LC



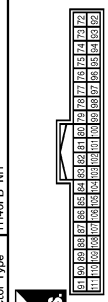
Terminal No.	Color of Wire	Signal Name [Specification]
1	W/B	BAT (F/L)

Connector No.	M119
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS16FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
11	Y/R	BAT (FUSE)
13	B	GND

Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH

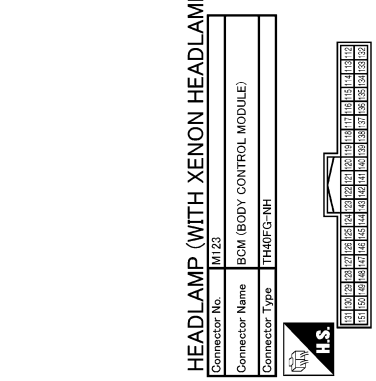


Terminal No.	Color of Wire	Signal Name [Specification]
87	R/Y	COMBI SW INPUT 5
88	R/G	COMBI SW INPUT 3
90	P	CAN-L
91	L	CAN-H
107	R/W	COMBI SW INPUT 1
108	P/B	COMBI SW INPUT 4
109	R/B	COMBI SW INPUT 2

JCLWM1439GE

HEADLAMP (WITH XENON HEADLAMP)

Connector No.	M123
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH



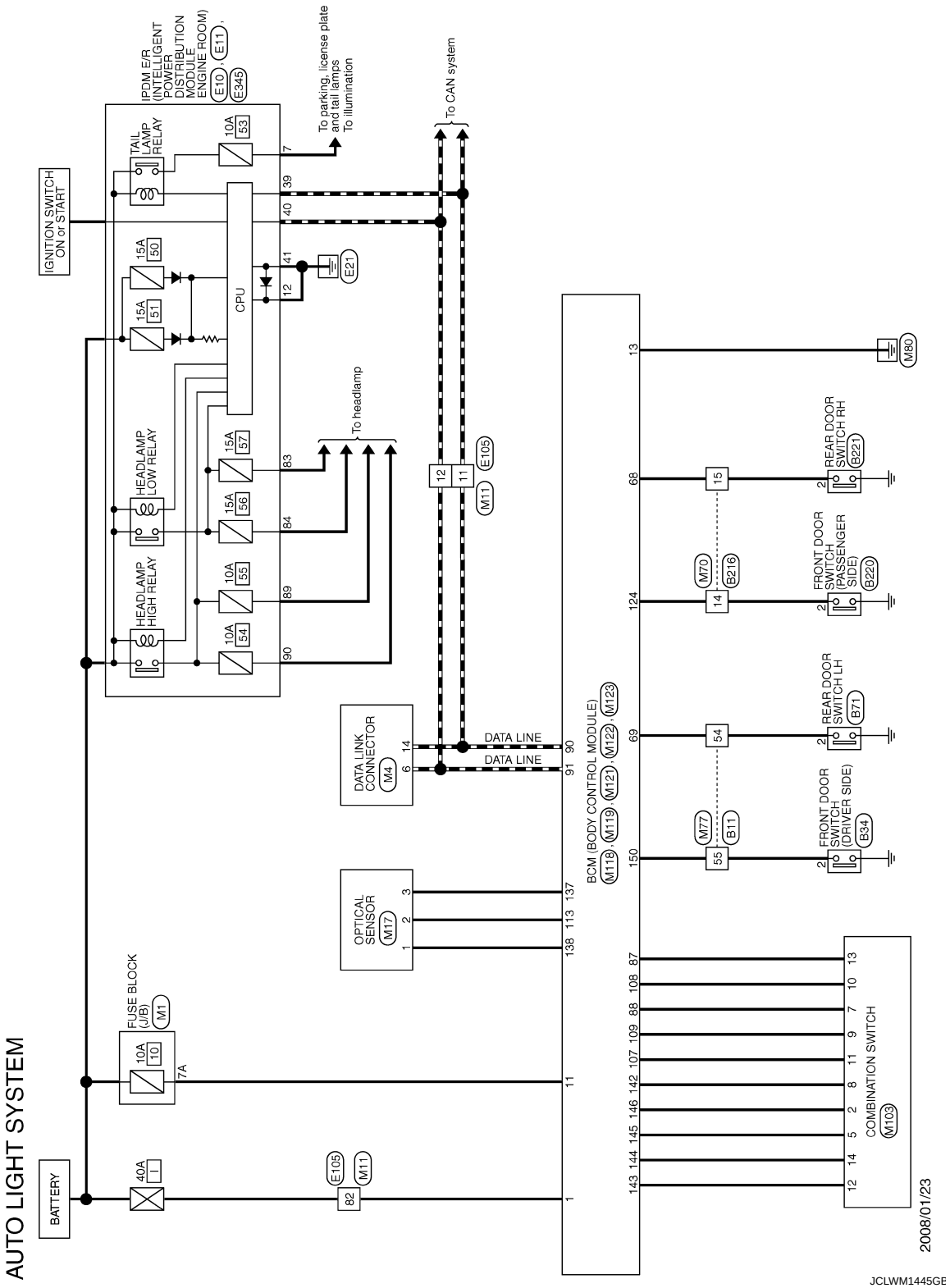
Terminal No.	Color of Wire	Signal Name [Specification]
142	LG/B	COMBI SW OUTPUT 5
143	L/W	COMBI SW OUTPUT 1
144	G/B	COMBI SW OUTPUT 2
145	LG/R	COMBI SW OUTPUT 3
146	G/Y	COMBI SW OUTPUT 4

JCLWM1440GE

AUTO LIGHT SYSTEM

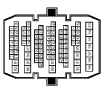
Wiring Diagram - AUTO LIGHT SYSTEM -

INFOID:0000000003773584



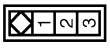
AUTO LIGHT SYSTEM

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS19



Terminal No.	Color of Wire	Signal Name [Specification]
54	BR	–
55	SB	–

Connector No.	B34
Connector Name	FRONT DOOR SWITCH (DRIVER SIDE)
Connector Type	A03FW



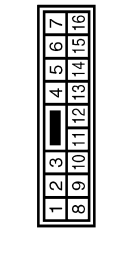
Terminal No.	Color of Wire	Signal Name [Specification]
2	SB	–

Connector No.	B71
Connector Name	REAR DOOR SWITCH LH
Connector Type	A03FW



Terminal No.	Color of Wire	Signal Name [Specification]
2	BR	–

Connector No.	B216
Connector Name	WIRE TO WIRE
Connector Type	NS16MBR-CS



Terminal No.	Color of Wire	Signal Name [Specification]
14	R	–
15	W	–

Connector No.	B220
Connector Name	FRONT DOOR SWITCH (PASSENGER SIDE)
Connector Type	A03FW

Terminal No.	Color of Wire	Signal Name [Specification]
2	R	–

Connector No.	B221
Connector Name	REAR DOOR SWITCH RH
Connector Type	A03FW

Terminal No.	Color of Wire	Signal Name [Specification]
2	W	–

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH20FW-CS12-M4-1V

Terminal No.	Color of Wire	Signal Name [Specification]
7	GR	–
12	B/W	–

Connector No.	E11
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH08FW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
39	P	–
40	L	–
41	B	–

JCLWM1446GE

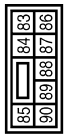
AUTO LIGHT SYSTEM

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH70MW-CS10-M3



Terminal No.	Color of Wire	Signal Name [Specification]
11	P	–
12	L	–
82	LG	–

Connector No.	E345
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS08FW-CS



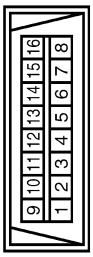
Terminal No.	Color of Wire	Signal Name [Specification]
83	Y	–
84	SB	–
89	W	–
90	O	–

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS08FW-M2



Terminal No.	Color of Wire	Signal Name [Specification]
7A	Y/R	–

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH70FW-CS10-M3



Terminal No.	Color of Wire	Signal Name [Specification]
11	P	–
12	L	–
82	W/B	–

Connector No.	M17
Connector Name	OPTICAL SENSOR
Connector Type	TK03FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	V/W	–
2	P/B	–
3	P	–

Connector No.	M70
Connector Name	WIRE TO WIRE
Connector Type	NS16FBR-CS



Terminal No.	Color of Wire	Signal Name [Specification]
14	R/B	–
15	R/W	–

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS19



Terminal No.	Color of Wire	Signal Name [Specification]
54	R/B	–
55	SB	–

JCLWM1447GE

AUTO LIGHT SYSTEM

Connector No.	M103
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
2	G/Y	OUTPUT 4
5	LG/R	OUTPUT 3
7	R/G	INPUT 3
8	LG/B	OUTPUT 5
9	R/B	INPUT 2
10	P/B	INPUT 4
11	R/W	INPUT 1
12	L/W	OUTPUT 1
13	R/Y	INPUT 5
14	G/B	OUTPUT 2

Connector No.	M118
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	M03FB-LC



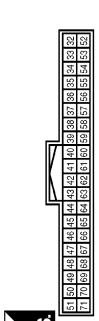
Terminal No.	Color of Wire	Signal Name [Specification]
1	W/B	BAT (F/L)

Connector No.	M119
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS16FW-CS



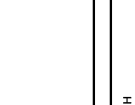
Terminal No.	Color of Wire	Signal Name [Specification]
11	Y/R	BAT (FUSE)
13	B	GND

Connector No.	M121
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FGY-NH



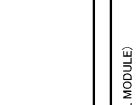
Terminal No.	Color of Wire	Signal Name [Specification]
68	R/W	REAR RH DOOR SW
69	R/B	REAR LH DOOR SW

Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH



Terminal No.	Color of Wire	Signal Name [Specification]
87	R/Y	COMBI SW INPUT 5
88	R/G	COMBI SW INPUT 3
90	P	CAN-L
91	L	CAN-H
107	R/W	COMBI SW INPUT 1
108	P/B	COMBI SW INPUT 4
109	R/B	COMBI SW INPUT 2

Connector No.	M123
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH



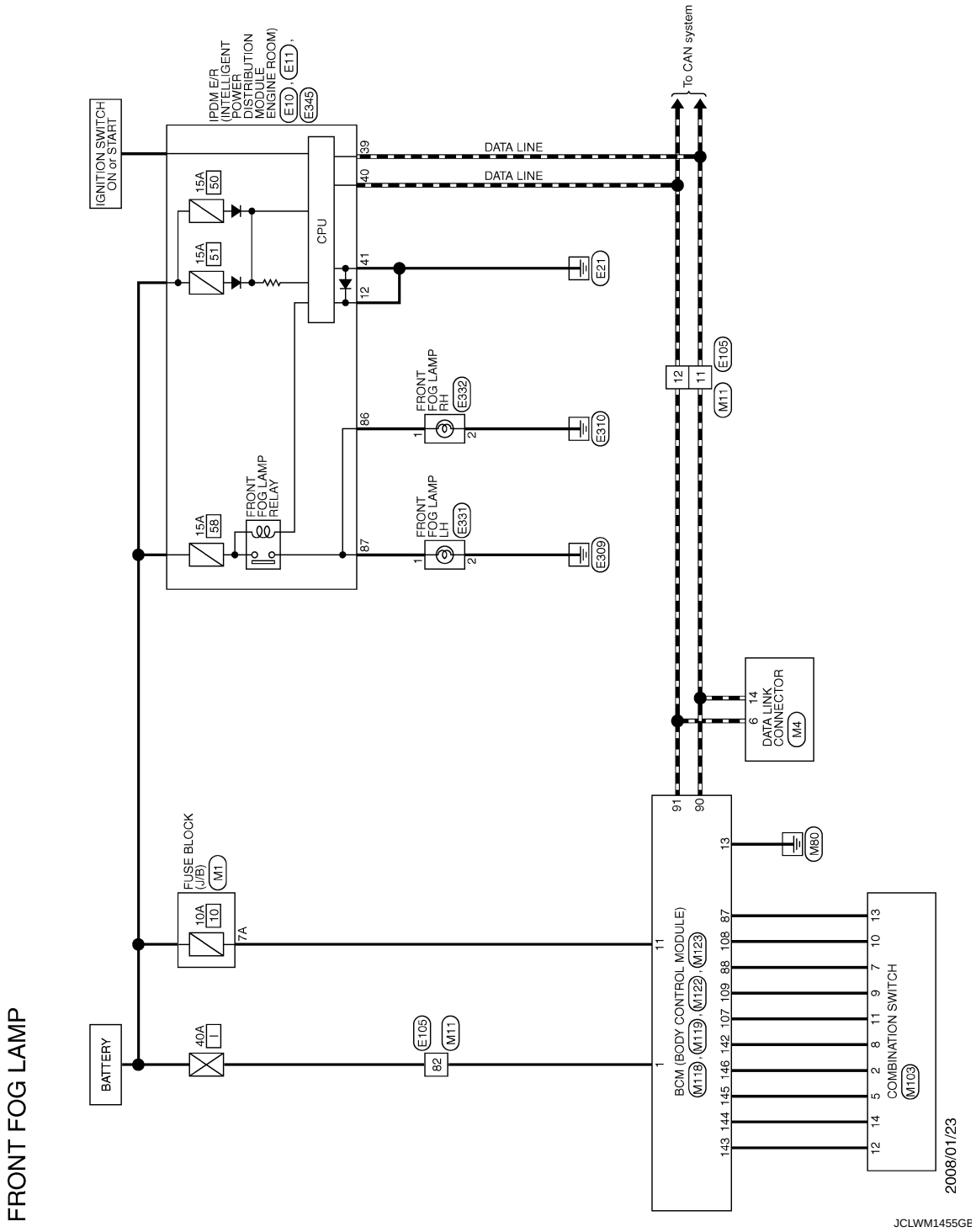
Terminal No.	Color of Wire	Signal Name [Specification]
113	P/B	OPTICAL SENSOR
124	R/B	PASSENGER DOOR SW
137	P	RECEIVER/SENSOR GND
138	V/W	RECEIVER/SENSOR POWER SUPPLY
142	LG/B	COMBI SW OUTPUT 5
143	L/W	COMBI SW OUTPUT 1
144	G/B	COMBI SW OUTPUT 2
145	LG/R	COMBI SW OUTPUT 3
146	G/Y	COMBI SW OUTPUT 4
150	SB	DRIVER DOOR SW

JCLWM1448GE

FRONT FOG LAMP SYSTEM

Wiring Diagram - FRONT FOG LAMP -

INFOID:0000000003773588



FRONT FOG LAMP

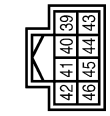
Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH20FW-CS12-M4-1V

Terminal No.	Color of Wire	Signal Name [Specification]
12	B/W	–

Connector No.	E332
Connector Name	FRONT FOG LAMP RH
Connector Type	FHZ02FB

Terminal No.	Color of Wire	Signal Name [Specification]
1	L	–
2	B	–

Connector No.	E11
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH08FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
39	P	–
40	L	–
41	B	–

Connector No.	E345
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS08FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
86	L	–
87	R	–

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH70MW-CS10-M3



Terminal No.	Color of Wire	Signal Name [Specification]
11	P	–
12	L	–
82	LG	–

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS06FW-M2

Terminal No.	Color of Wire	Signal Name [Specification]
7A	Y/R	–

Connector No.	E331
Connector Name	FRONT FOG LAMP LH
Connector Type	FHZ02FB

Terminal No.	Color of Wire	Signal Name [Specification]
1	R	–
2	B	–

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

JCLWM1456GE

FRONT FOG LAMP

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH70FW-CS10-M3

Terminal No.	Color of Wire	Signal Name [Specification]
11	P	–
12	L	–
82	W/B	–

Connector No.	M103
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
2	G/Y	OUTPUT 4
5	LG/R	OUTPUT 3
7	R/G	INPUT 3
8	LG/B	OUTPUT 5
9	R/B	INPUT 2
10	P/B	INPUT 4
11	R/W	INPUT 1
12	L/W	OUTPUT 1
13	R/Y	INPUT 5
14	G/B	OUTPUT 2

Connector No.	M118
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	M03FB-LC

Terminal No.	Color of Wire	Signal Name [Specification]
1	W/B	BAT (F/L)

Connector No.	M119
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS16FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
11	Y/R	BAT (FUSE)
13	B	GND

Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH

Terminal No.	Color of Wire	Signal Name [Specification]
87	R/Y	COMBI SW INPUT 5
88	R/G	COMBI SW INPUT 3
90	P	CAN-L
91	L	CAN-H
107	R/W	COMBI SW INPUT 1
108	P/B	COMBI SW INPUT 4
109	R/B	COMBI SW INPUT 2

Connector No.	M123
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH

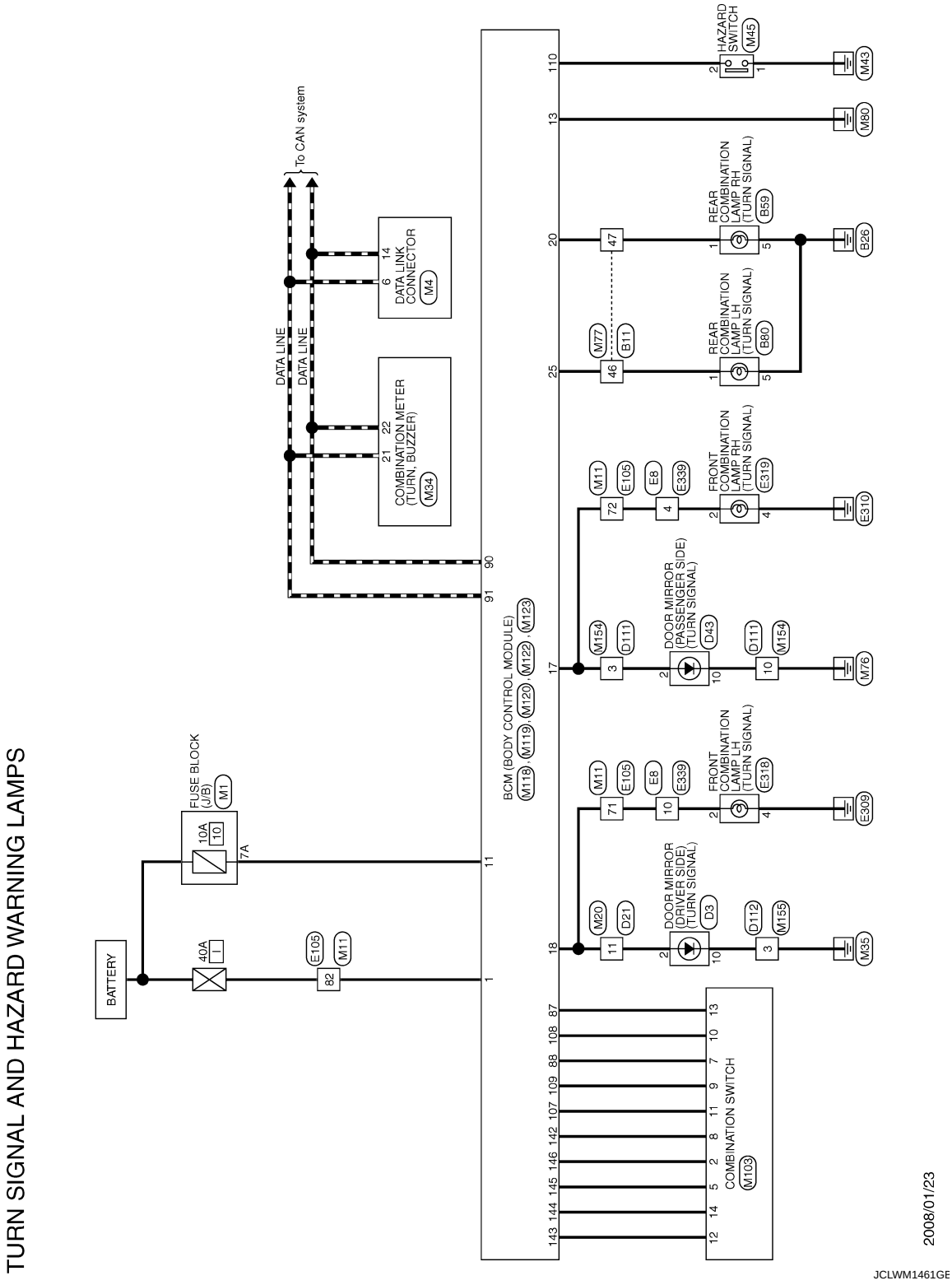
Terminal No.	Color of Wire	Signal Name [Specification]
142	LG/B	COMBI SW OUTPUT 5
143	L/W	COMBI SW OUTPUT 1
144	G/B	COMBI SW OUTPUT 2
145	LG/R	COMBI SW OUTPUT 3
146	G/Y	COMBI SW OUTPUT 4

JCLWM1457GE

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM

Wiring Diagram - TURN AND HAZARD WARNING LAMPS -

INFOID:0000000003773589



TURN SIGNAL AND HAZARD WARNING LAMPS

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS19

Terminal No.	Color of Wire	Signal Name [Specification]
46	Y	–
47	BR	–

Connector No.	B59
Connector Name	REAR COMBINATION LAMP RH
Connector Type	RS06FGY-PR

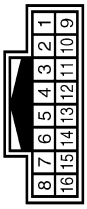


Terminal No.	Color of Wire	Signal Name [Specification]
1	BR	–
5	B	–

Connector No.	B80
Connector Name	REAR COMBINATION LAMP LH
Connector Type	RS06FGY-PR

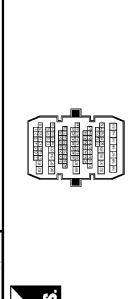
Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	–
5	B	–

Connector No.	D3
Connector Name	DOOR MIRROR (DRIVER SIDE)
Connector Type	TH16MW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
2	G/Y	–
10	B	–

Connector No.	D21
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
11	GR	–

Connector No.	D43
Connector Name	DOOR MIRROR (PASSENGER SIDE)
Connector Type	TH16MW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
2	G/B	–
10	B	–

Connector No.	D111
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
3	GR	–
10	B	–

Connector No.	D112
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
3	B	–

JCLWM1462GE

TURN SIGNAL AND HAZARD WARNING LAMPS

Connector No.	E8
Connector Name	WIRE TO WIRE
Connector Type	NS12MBR-CS

Terminal No.	Color of Wire	Signal Name [Specification]
4	SB	–
10	Y	–

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH70MW-CS10-M3

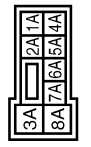


Terminal No.	Color of Wire	Signal Name [Specification]
71	Y	–
72	SB	–
82	LG	–

Connector No.	E339
Connector Name	WIRE TO WIRE
Connector Type	NS12FBR-CS

Terminal No.	Color of Wire	Signal Name [Specification]
4	SB	–
10	Y	–

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS06FW-M2



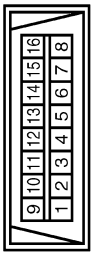
Terminal No.	Color of Wire	Signal Name [Specification]
7A	Y/R	–

Connector No.	E318
Connector Name	FRONT COMBINATION LAMP LH
Connector Type	RS04FGY-PR



Terminal No.	Color of Wire	Signal Name [Specification]
2	Y	–
4	B/W	–

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	E319
Connector Name	FRONT COMBINATION LAMP RH
Connector Type	RS04FGY-PR



Terminal No.	Color of Wire	Signal Name [Specification]
2	SB	–
4	B/W	–

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH70FW-CS10-M3



Terminal No.	Color of Wire	Signal Name [Specification]
71	G/Y	–
72	G/B	–
82	W/B	–

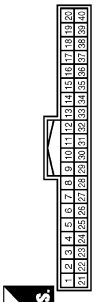
JCLWM1463GE

TURN SIGNAL AND HAZARD WARNING LAMPS

Connector No.	M20
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
11	G/Y	–

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
21	L	CAN-H
22	P	CAN-L

Connector No.	M45
Connector Name	HAZARD SWITCH
Connector Type	TK04FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	B	–
2	G/O	–

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS19



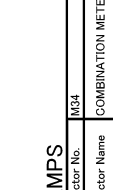
Terminal No.	Color of Wire	Signal Name [Specification]
46	G/Y	–
47	G/B	–

Connector No.	M103
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH



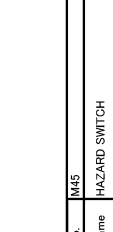
Terminal No.	Color of Wire	Signal Name [Specification]
2	G/Y	OUTPUT 4
5	LG/R	OUTPUT 3
7	R/G	INPUT 3
8	LG/B	OUTPUT 5
9	R/B	INPUT 2
10	P/B	INPUT 4
11	R/W	INPUT 1
12	L/W	OUTPUT 1
13	R/Y	INPUT 5
14	G/B	OUTPUT 2

Connector No.	M118
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	M03FB-LC



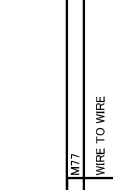
Terminal No.	Color of Wire	Signal Name [Specification]
1	W/B	BAT (F/L)

Connector No.	M119
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS16FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
11	Y/R	BAT (FUSE)
13	B	GND
17	G/B	TURN SIGNAL RH (FRONT, D/MIRROR)
18	G/Y	TURN SIGNAL LH (FRONT, D/MIRROR)

Connector No.	M120
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS12FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
20	G/B	TURN SIGNAL RH (REAR)
25	G/Y	TURN SIGNAL LH (REAR)

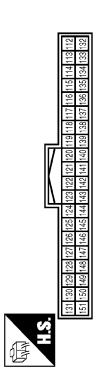
JCLWM1464GE

TURN SIGNAL AND HAZARD WARNING LAMPS

Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH

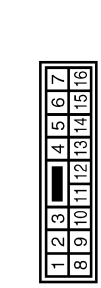
Terminal No.	Color of Wire	Signal Name [Specification]
87	R/Y	COMBI SW INPUT 5
88	R/G	COMBI SW INPUT 3
90	P	CAN-L
91	L	CAN-H
107	R/W	COMBI SW INPUT 1
108	P/B	COMBI SW INPUT 4
109	R/B	COMBI SW INPUT 2
110	G/O	HAZARD SW

Connector No.	M123
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH



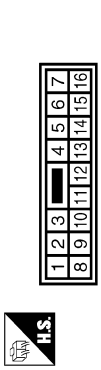
Terminal No.	Color of Wire	Signal Name [Specification]
142	LG/B	COMBI SW OUTPUT 5
143	L/W	COMBI SW OUTPUT 1
144	G/B	COMBI SW OUTPUT 2
145	LG/R	COMBI SW OUTPUT 3
146	G/Y	COMBI SW OUTPUT 4

Connector No.	M154
Connector Name	WIRE TO WIRE
Connector Type	NS16MW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
3	G/B	–
10	B/W	–

Connector No.	M155
Connector Name	WIRE TO WIRE
Connector Type	NS16MW-CS



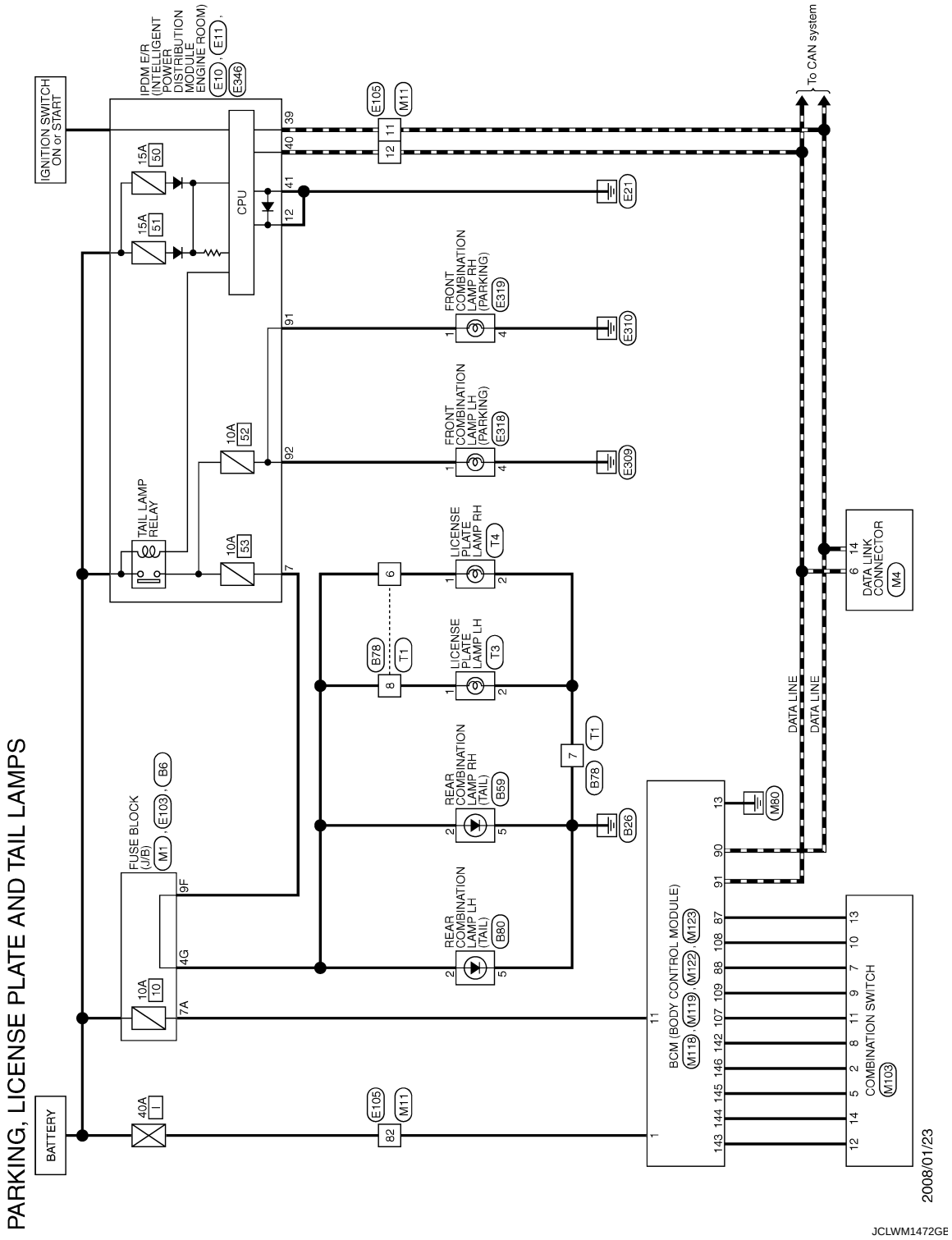
Terminal No.	Color of Wire	Signal Name [Specification]
3	B/P	–

JCLWM1465GE

PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM

Wiring Diagram - PARKING, LICENSE PLATE AND TAIL LAMPS -

INFOID:0000000003773590



PARKING, LICENSE PLATE AND TAIL LAMPS

Connector No.	B6
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS12FBR-CS

Terminal No.	Color of Wire	Signal Name [Specification]
4G	L	–

Connector No.	B59
Connector Name	REAR COMBINATION LAMP RH
Connector Type	RS06FGY-PR

Terminal No.	Color of Wire	Signal Name [Specification]
2	L	–
5	B	–

Connector No.	B78
Connector Name	WIRE TO WIRE
Connector Type	NS12MW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
7	B	–
8	L	–

Connector No.	B80
Connector Name	REAR COMBINATION LAMP LH
Connector Type	RS06FGY-PR

Terminal No.	Color of Wire	Signal Name [Specification]
2	L	–
5	B	–

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH20FW-CS12-M4-1V

Terminal No.	Color of Wire	Signal Name [Specification]
7	GR	–
12	B/W	–

Connector No.	E11
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH08FW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
39	P	–
40	L	–
41	B	–

Connector No.	E103
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
9F	GR	–

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH70MW-CS10-M3

Terminal No.	Color of Wire	Signal Name [Specification]
11	P	–
12	L	–
82	LG	–

JCLWM1473GE

PARKING, LICENSE PLATE AND TAIL LAMPS

Connector No.	E318
Connector Name	FRONT COMBINATION LAMP LH
Connector Type	RS04FGY-PR

Terminal No.	Color of Wire	Signal Name [Specification]
1	L	–
4	B/W	–

Connector No.	E319
Connector Name	FRONT COMBINATION LAMP RH
Connector Type	RS04FGY-PR



Terminal No.	Color of Wire	Signal Name [Specification]
1	O	–
4	B/W	–

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH70FW-CS10-M3

Terminal No.	Color of Wire	Signal Name [Specification]
11	P	–
12	L	–
82	W/B	–

Connector No.	E346
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH16FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
91	O	–
92	L	–

Connector No.	M103
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
2	G/Y	OUTPUT 4
5	LG/R	OUTPUT 3
7	R/G	INPUT 3
8	LG/B	OUTPUT 5
9	R/B	INPUT 2
10	P/B	INPUT 4
11	R/W	INPUT 1
12	L/W	OUTPUT 1
13	R/Y	INPUT 5
14	G/B	OUTPUT 2

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS08FW-M2



Terminal No.	Color of Wire	Signal Name [Specification]
7A	Y/R	–

Connector No.	M118
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	M03FB-LC

Terminal No.	Color of Wire	Signal Name [Specification]
1	W/B	BAT (F/L)

JCLWM1474GE

PARKING, LICENSE PLATE AND TAIL LAMPS

Connector No.	M119
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS16FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
11	Y/R	BAT (FUSE)
13	B	GND

Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH



Terminal No.	Color of Wire	Signal Name [Specification]
87	R/Y	COMBI SW INPUT 5
88	R/G	COMBI SW INPUT 3
90	P	CAN-L
91	L	CAN-H
107	R/W	COMBI SW INPUT 1
108	P/B	COMBI SW INPUT 4
109	R/B	COMBI SW INPUT 2

Connector No.	M123
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH

Terminal No.	Color of Wire	Signal Name [Specification]
142	LG/B	COMBI SW OUTPUT 5
143	L/W	COMBI SW OUTPUT 1
144	G/B	COMBI SW OUTPUT 2
145	LG/R	COMBI SW OUTPUT 3
146	G/Y	COMBI SW OUTPUT 4

Connector No.	T1
Connector Name	WIRE TO WIRE
Connector Type	NS12FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
6	G	–
7	B	–
8	Y	–

Connector No.	T3
Connector Name	LICENSE PLATE LAMP LH
Connector Type	TK02FBR

Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	–
2	B	–

Connector No.	T4
Connector Name	LICENSE PLATE LAMP RH
Connector Type	TK02FBR

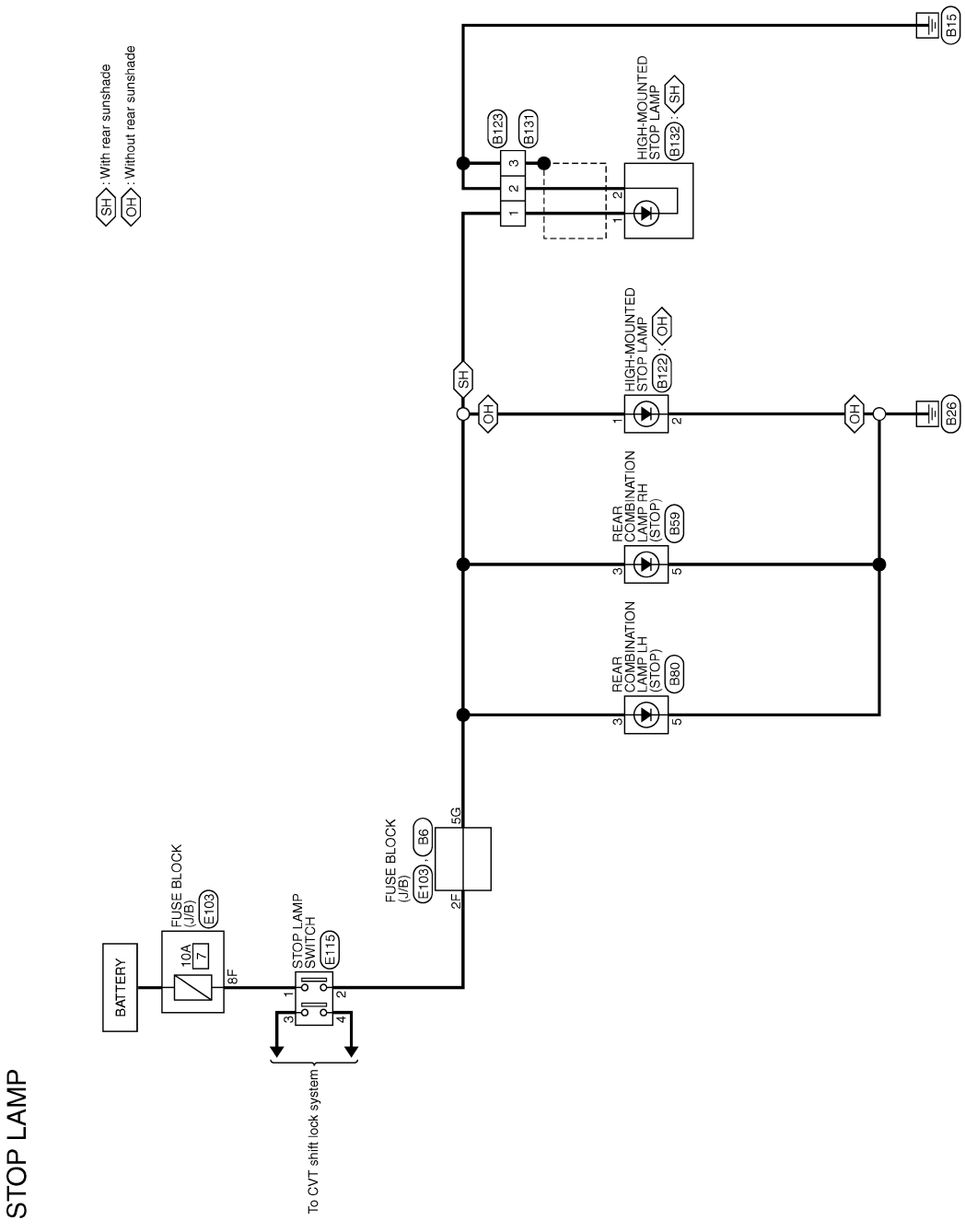
Terminal No.	Color of Wire	Signal Name [Specification]
1	G	–
2	B	–

JCLWM1475GE

STOP LAMP

Wiring Diagram - STOP LAMP -

INFOID:0000000003773591



STOP LAMP

Connector No.	B6
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS12FBR-CS

Terminal No.	Color of Wire	Signal Name [Specification]
1	P	–
2	B/R	–
3	B/R	–

Connector No.	B59
Connector Name	REAR COMBINATION LAMP RH
Connector Type	RS06FGY-PR

Terminal No.	Color of Wire	Signal Name [Specification]
3	P	–
5	B	–

Connector No.	B80
Connector Name	REAR COMBINATION LAMP LH
Connector Type	RS06FGY-PR

Terminal No.	Color of Wire	Signal Name [Specification]
1	P	–
2	P	–

Connector No.	B122
Connector Name	HIGH-MOUNTED STOP LAMP (WITHOUT REAR SUNSHADE)
Connector Type	TK02MBR-P

Terminal No.	Color of Wire	Signal Name [Specification]
1	P	–
2	P	–

Connector No.	B123
Connector Name	WIRE TO WIRE
Connector Type	TK03FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	O	–
2	W	–
3	SHIELD	–

Connector No.	B131
Connector Name	WIRE TO WIRE
Connector Type	TK03MW

Terminal No.	Color of Wire	Signal Name [Specification]
1	O	–
2	W	–

Connector No.	B132
Connector Name	HIGH-MOUNTED STOP LAMP (WITH REAR SUNSHADE)
Connector Type	TK02MBR-P

Terminal No.	Color of Wire	Signal Name [Specification]
3	P	–
5	B	–

Connector No.	E103
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
2F	LG	–
9F	R	–

JCLWM1467GE

STOP LAMP

Connector No.	E115
Connector Name	STOP LAMP SWITCH
Connector Type	M04FW-LC

H.S



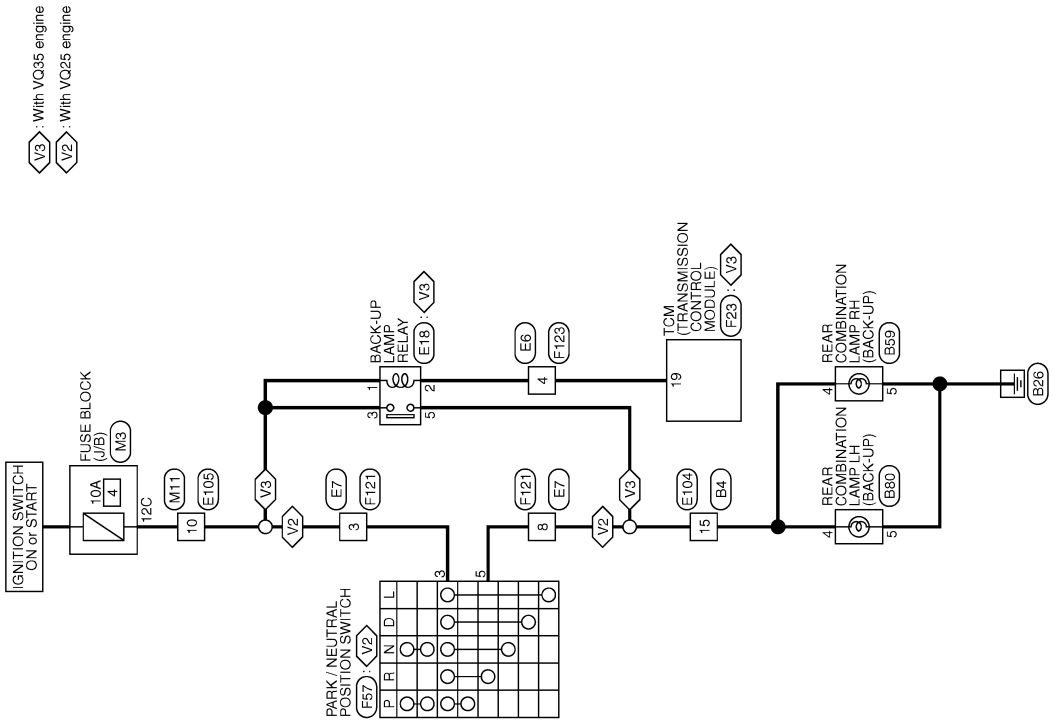
Terminal No.	Color of Wire	Signal Name [Specification]
1	R	-
2	LG	-
3	G	-
4	Y	-

JCLWM1468GE

BACK-UP LAMP

Wiring Diagram - BACK-UP LAMP -

INFOID:0000000003773592



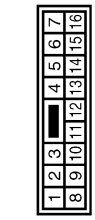
BACK-UP LAMP

2008/01/23

JCLWM1469GE

BACK–UP LAMP

Connector No.	B4
Connector Name	WIRE TO WIRE
Connector Type	NS16MW–CS



Terminal No.	Color of Wire	Signal Name [Specification]
15	R	–

Connector No.	B59
Connector Name	REAR COMBINATION LAMP RH
Connector Type	RS06FGY–PR

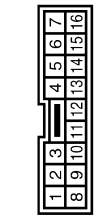


Terminal No.	Color of Wire	Signal Name [Specification]
4	R	–
5	B	–

Connector No.	B80
Connector Name	REAR COMBINATION LAMP LH
Connector Type	RS06FGY–PR

Terminal No.	Color of Wire	Signal Name [Specification]
4	R	–
5	B	–

Connector No.	E6
Connector Name	WIRE TO WIRE
Connector Type	TK16MGY–1V



Terminal No.	Color of Wire	Signal Name [Specification]
4	R	–

Connector No.	E7
Connector Name	WIRE TO WIRE
Connector Type	NS10MW–CS

Terminal No.	Color of Wire	Signal Name [Specification]
3	LG	–
8	R	–

Connector No.	E18
Connector Name	BACK–UP LAMP RELAY
Connector Type	MS02FL–M2–LC

Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	–
2	R	–
3	LG	–
5	R	–

Connector No.	E104
Connector Name	WIRE TO WIRE
Connector Type	NS16FW–CS



Terminal No.	Color of Wire	Signal Name [Specification]
15	R	–

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH70MW–CS10–M3

Terminal No.	Color of Wire	Signal Name [Specification]
10	LG	–

JCLWM1470GE

BACK–UP LAMP

Connector No.	F23
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Type	RH40FB-RZ8-L-RH

H.S.

31	32	33	34	35	36	37	38	39	40	47	48
21	22	23	24	25	26	27	28	29	30	45	46
11	12	13	14	15	16	17	18	19	20	43	44
1	2	3	4	5	6	7	8	9	10	41	42

Terminal No.	Color of Wire	Signal Name [Specification]
19	G/B	REV LAMP RELAY

Connector No.	F57
Connector Name	PARK / NEUTRAL POSITION SWITCH
Connector Type	YDX06FB-HS4

H.S.

8	4	3		7	
2	6	5		1	

Terminal No.	Color of Wire	Signal Name [Specification]
3	LG	–
5	P/B	–

Connector No.	F121
Connector Name	WIRE TO WIRE
Connector Type	NS10FW-CS

H.S.

4	3		2	1
10	9	8	7	6	5

Terminal No.	Color of Wire	Signal Name [Specification]
3	O	–
8	R	–

Connector No.	F123
Connector Name	WIRE TO WIRE
Connector Type	TK16FGY-1V

H.S.

7	6	5	4		3	2	1
16	15	14	13	12	11	10	9	8

Terminal No.	Color of Wire	Signal Name [Specification]
4	G/B	–

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS12FW-CS

H.S.

5C	4C		3C	2C	1C
12C	11C	10C	9C	8C	7C	6C

Terminal No.	Color of Wire	Signal Name [Specification]
12C	O	–

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH70FW-CS10-M3

H.S.



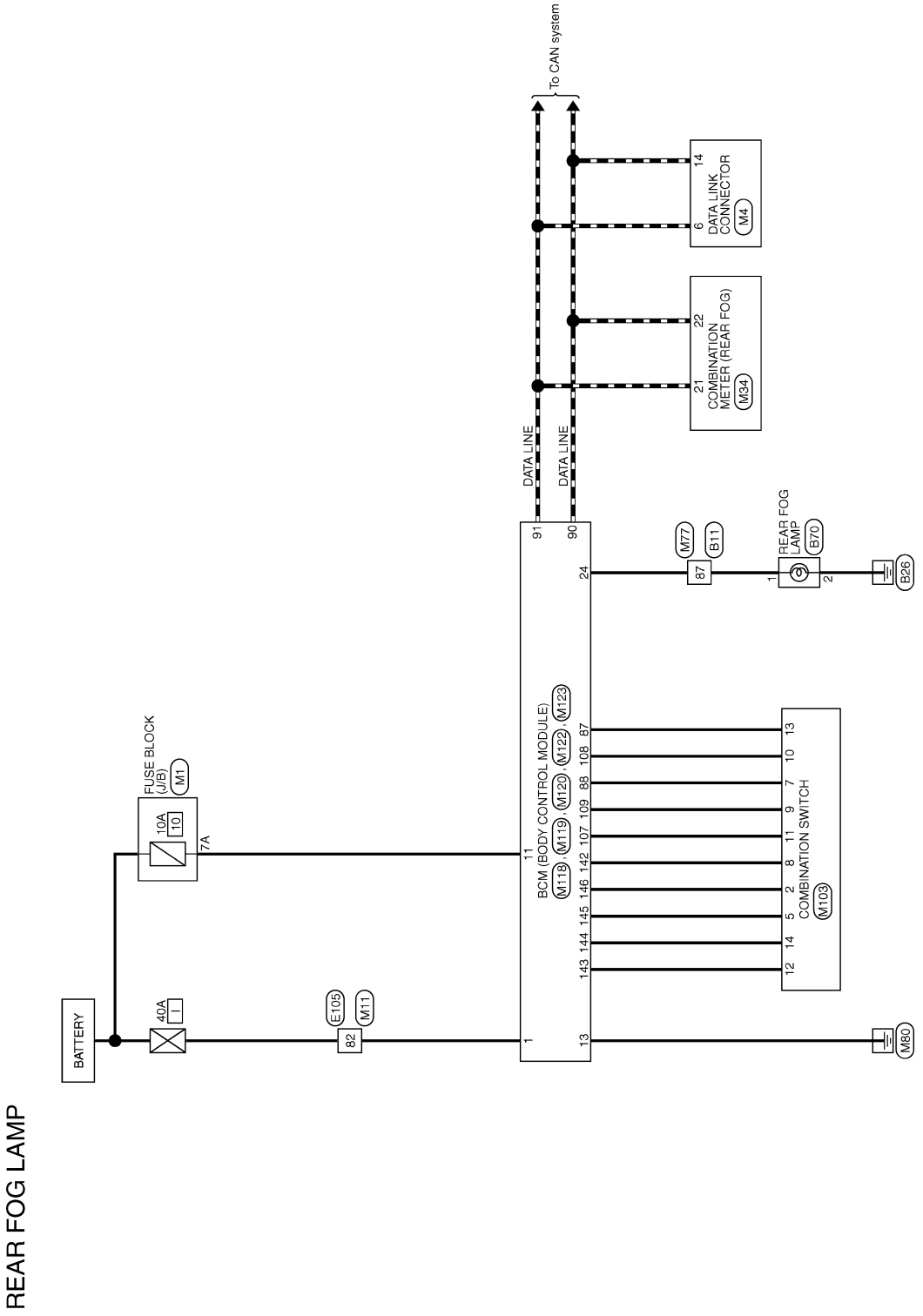
Terminal No.	Color of Wire	Signal Name [Specification]
10	O	–

JCLWM1471GE

REAR FOG LAMP SYSTEM

Wiring Diagram - REAR FOG LAMP -

INFOID:0000000003811067



REAR FOG LAMP

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS19



Terminal No.	Color of Wire	Signal Name [Specification]
87	G	–

Connector No.	B70
Connector Name	REAR FOG LAMP
Connector Type	RS02FBR



Terminal No.	Color of Wire	Signal Name [Specification]
1	G	–
2	B	–

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH70MW-CS10-M3



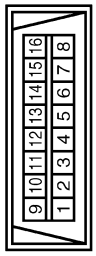
Terminal No.	Color of Wire	Signal Name [Specification]
82	LG	–

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS08FW-M2



Terminal No.	Color of Wire	Signal Name [Specification]
7A	Y/R	–

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



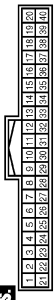
Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH70FW-CS10-M3



Terminal No.	Color of Wire	Signal Name [Specification]
82	W/B	–

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
21	L	CAN-H
22	P	CAN-L

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS19



Terminal No.	Color of Wire	Signal Name [Specification]
87	G	–

JCLWM1459GE

REAR FOG LAMP

Connector No.	M103
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH

H.S.

1 2 3 4 5 6
7 8 9 10 11 12 13 14

Terminal No.	Color of Wire	Signal Name [Specification]
2	G/Y	OUTPUT 4
5	LG/R	OUTPUT 3
7	R/G	INPUT 3
8	LG/B	OUTPUT 5
9	R/B	INPUT 2
10	P/B	INPUT 4
11	R/W	INPUT 1
12	L/W	OUTPUT 1
13	R/Y	INPUT 5
14	G/B	OUTPUT 2

Connector No.	M118
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	M03FB-LC

H.S.

1 3
2

Terminal No.	Color of Wire	Signal Name [Specification]
1	W/B	BAT (F/L)

Connector No.	M119
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS16FW-CS

H.S.

4 5 6 7 8 9 10
11 12 13 14 15 16 17 18 19

Terminal No.	Color of Wire	Signal Name [Specification]
11	Y/R	BAT (FUSE)
13	B	GND

Connector No.	M120
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS12FW-CS

H.S.

20 21 22 23 24
25 26 27 28 29 30 31

Terminal No.	Color of Wire	Signal Name [Specification]
24	G	REAR FOG LAMP OUTPUT

Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH

H.S.

91 90 89 88 87 86 85 84 83 82 81 80 79 78 77 76 75 74 73 72
111 110 109 108 107 106 105 104 103 102 101 100 99 98 97 96 95 94 93 92

Terminal No.	Color of Wire	Signal Name [Specification]
87	R/Y	COMBI SW INPUT 5
88	R/G	COMBI SW INPUT 3
90	P	CAN-L
91	L	CAN-H
107	R/W	COMBI SW INPUT 1
108	P/B	COMBI SW INPUT 4
109	R/B	COMBI SW INPUT 2

Connector No.	M123
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH

H.S.

Terminal No.	Color of Wire	Signal Name [Specification]
142	LG/B	COMBI SW OUTPUT 5
143	L/W	COMBI SW OUTPUT 1
144	G/B	COMBI SW OUTPUT 2
145	LG/R	COMBI SW OUTPUT 3
146	G/Y	COMBI SW OUTPUT 4

JCLWM1460GE

ECU DIAGNOSIS

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:0000000003959690

VALUES ON THE DIAGNOSIS TOOL

CONSULT-III MONITOR ITEM

Monitor Item	Condition	Value/Status
FR WIPER HI	Other than front wiper switch HI	Off
	Front wiper switch HI	On
FR WIPER LOW	Other than front wiper switch LO	Off
	Front wiper switch LO	On
FR WASHER SW	Front washer switch OFF	Off
	Front washer switch ON	On
FR WIPER INT	Other than front wiper switch INT	Off
	Front wiper switch INT	On
FR WIPER STOP	Front wiper is not in STOP position	Off
	Front wiper is in STOP position	On
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	Wiper intermittent dial position
TURN SIGNAL R	Other than turn signal switch RH	Off
	Turn signal switch RH	On
TURN SIGNAL L	Other than turn signal switch LH	Off
	Turn signal switch LH	On
TAIL LAMP SW	Other than lighting switch 1ST and 2ND	Off
	Lighting switch 1ST or 2ND	On
HI BEAM SW	Other than lighting switch HI	Off
	Lighting switch HI	On
HEAD LAMP SW 1	Other than lighting switch 2ND	Off
	Lighting switch 2ND	On
HEAD LAMP SW 2	Other than lighting switch 2ND	Off
	Lighting switch 2ND	On
PASSING SW	Other than lighting switch PASS	Off
	Lighting switch PASS	On
AUTO LIGHT SW	Other than lighting switch AUTO	Off
	Lighting switch AUTO	On
FR FOG SW	Front fog lamp switch OFF	Off
	Front fog lamp switch ON	On
RR FOG SW	Rear fog lamp switch OFF	Off
	Rear fog lamp switch ON	On
DOOR SW-DR	Driver door closed	Off
	Driver door opened	On
DOOR SW-AS	Passenger door closed	Off
	Passenger door opened	On
DOOR SW-RR	Rear RH door closed	Off
	Rear RH door opened	On

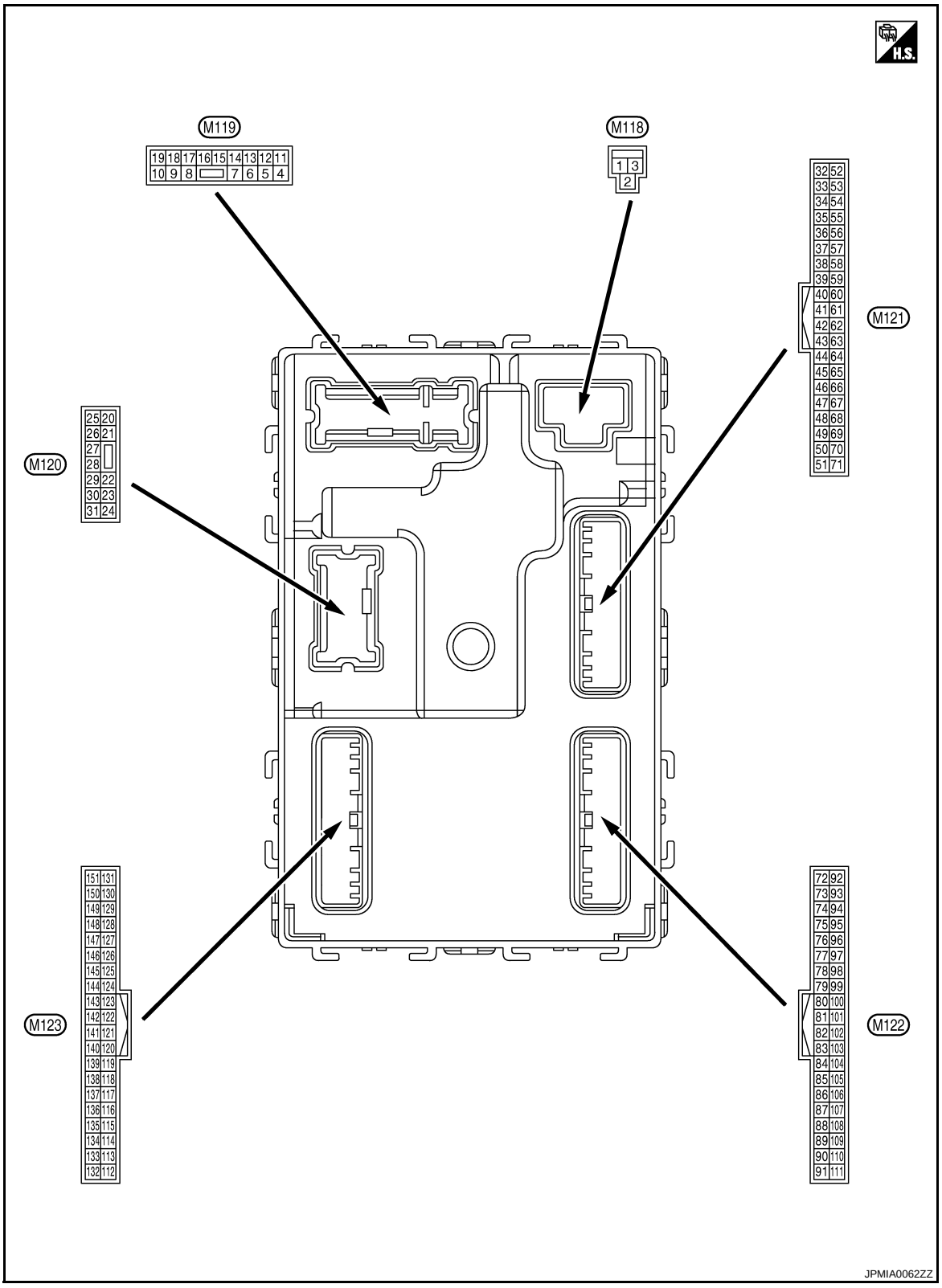
Monitor Item	Condition	Value/Status
DOOR SW-RL	Rear LH door closed	Off
	Rear LH door opened	On
DOOR SW-BK	**NOTE:** The item is indicated, but not monitored.	Off
CDL LOCK SW	Other than power door lock switch LOCK	Off
	Power door lock switch LOCK	On
CDL UNLOCK SW	Other than power door lock switch UNLOCK	Off
	Power door lock switch UNLOCK	On
KEY CYL LK-SW	**NOTE:** The item is indicated, but not monitored.	Off
KEY CYL UN-SW	**NOTE:** The item is indicated, but not monitored.	Off
KEY CYL SW-TR	**NOTE:** The item is indicated, but not monitored.	Off
HAZARD SW	Hazard switch is OFF	Off
	Hazard switch is ON	On
REAR DEF SW **NOTE:** At model with BOSE audio system this item is indicated, but is not monitored.	Rear window defogger switch is OFF	Off
	Rear window defogger switch is ON	On
TR CANCEL SW	**NOTE:** The item is indicated, but not monitored.	Off
TR/BD OPEN SW	Trunk lid opener switch OFF	Off
	While the trunk lid opener switch is turned ON	On
TRNK/HAT MNTR	Trunk lid closed	Off
	Trunk lid opened	On
RKE-LOCK	LOCK button of the key is not pressed	Off
	LOCK button of the key is pressed	On
RKE-UNLOCK	UNLOCK button of the key is not pressed	Off
	UNLOCK button of the key is pressed	On
RKE-TR/BD	TRUNK OPEN button of the key is not pressed	Off
	TRUNK OPEN button of the key is pressed	On
RKE-PANIC	**NOTE:** The item is indicated, but not monitored.	Off
RKE-P/W OPEN	**NOTE:** The item is indicated, but not monitored.	Off
RKE-MODE CHG	LOCK/UNLOCK button of the key is not pressed and held simultaneously	Off
	LOCK/UNLOCK button of the key is pressed and held simultaneously	On
OPTICAL SENSOR	Bright outside of the vehicle	Close to 5 V
	Dark outside of the vehicle	Close to 0 V
REQ SW -DR	Driver door request switch is not pressed	Off
	Driver door request switch is pressed	On
REQ SW -AS	Passenger door request switch is not pressed	Off
	Passenger door request switch is pressed	On

Monitor Item	Condition	Value/Status
REQ SW -RR	**NOTE:** The item is indicated, but not monitored.	Off
REQ SW -RR	**NOTE:** The item is indicated, but not monitored.	Off
REQ SW -BD/TR	Trunk lid opener request switch is not pressed	Off
	Trunk lid opener request switch is pressed	On
PUSH SW	Push-button ignition switch (push switch) is not pressed	Off
	Push-button ignition switch (push switch) is pressed	On
IGN RLY2 -F/B	Ignition switch in OFF or ACC position	Off
	Ignition switch in ON position	On
CLUCH SW	**NOTE:** The item is indicated, but not monitored.	Off
BRAKE SW 1	The brake pedal is not depressed	On
	The brake pedal is depressed	Off
DETE/CANCL SW	Selector lever in P position	Off
	Selector lever in any position other than P	On
SFT PN/N SW	Selector lever in any position other than P and N	Off
	Selector lever in P or N position	On
S/L -LOCK	Steering is locked	Off
	Steering is unlocked	On
S/L -UNLOCK	Steering is unlocked	Off
	Steering is locked	On
S/L RELAY-F/B	Ignition switch in OFF or ACC position	Off
	Ignition switch in ON position	On
UNLK SEN -DR	Driver door is unlocked	Off
	Driver door is locked	On
PUSH SW -IPDM	Push-button ignition switch (push-switch) is not pressed	Off
	Push-button ignition switch (push-switch) is pressed	On
IGN RLY1 -F/B	Ignition switch in OFF or ACC position	Off
	Ignition switch in ON position	On
DETE SW -IPDM	Selector lever in P position	Off
	Selector lever in any position other than P	On
SFT PN -IPDM	Selector lever in any position other than P and N	Off
	Selector lever in P or N position	On
SFT P -MET	Selector lever in any position other than P	Off
	Selector lever in P position	On
SFT N -MET	Selector lever in any position other than N	Off
	Selector lever in N position	On
ENGINE STATE	Engine stopped	Stop
	While the engine stalls	Stall
	At engine cranking	Crank
	Engine running	Run
S/L LOCK-IPDM	Steering is locked	Off
	Steering is unlocked	On

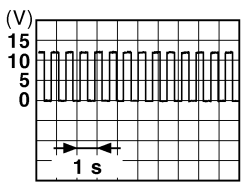
Monitor Item	Condition	Value/Status
S/L UNLK-IPDM	Steering is unlocked	Off
	Steering is locked	On
S/L RELAY-REQ	Ignition switch in OFF or ACC position	Off
	Ignition switch in ON position	On
VEH SPEED 1	While driving	Equivalent to speedometer reading
VEH SPEED 2	While driving	Equivalent to speedometer reading
DOOR STAT-DR	Driver door is locked	LOCK
	Wait with selective UNLOCK operation (5 seconds)	READY
	Driver door is unlocked	UNLOCK
DOOR STAT-AS	Passenger door is locked	LOCK
	Wait with selective UNLOCK operation (5 seconds)	READY
	Passenger door is unlocked	UNLOCK
ID OK FLAG	Ignition switch in ACC or ON position	Reset
	Ignition switch in OFF position	Set
PRMT ENG STRT	The engine start is prohibited	Reset
	The engine start is permitted	Set
PRMT RKE STRT	**NOTE:** The item is indicated, but not monitored.	Reset
KEY SW -SLOT	The key is not inserted into key slot	Off
	The key is inserted into key slot	On
RKE OPE COUN1	During the operation of the key	Operation frequency of the key
RKE OPE COUN2	**NOTE:** The item is indicated, but not monitored.	—
CONFRM ID ALL	The key ID that the key slot receives does not accord with any key ID registered to BCM.	Yet
	The key ID that the key slot receives accords with any key ID registered to BCM.	Done
CONFIRM ID4	The key ID that the key slot receives does not accord with the fourth key ID registered to BCM.	Yet
	The key ID that the key slot receives accords with the fourth key ID registered to BCM.	Done
CONFIRM ID3	The key ID that the key slot receives does not accord with the third key ID registered to BCM.	Yet
	The key ID that the key slot receives accords with the third key ID registered to BCM.	Done
CONFIRM ID2	The key ID that the key slot receives does not accord with the second key ID registered to BCM.	Yet
	The key ID that the key slot receives accords with the second key ID registered to BCM.	Done
CONFIRM ID1	The key ID that the key slot receives does not accord with the first key ID registered to BCM.	Yet
	The key ID that the key slot receives accords with the first key ID registered to BCM.	Done
TP 4	The ID of fourth key is not registered to BCM	Yet
	The ID of fourth key is registered to BCM	Done
TP 3	The ID of third key is not registered to BCM	Yet
	The ID of third key is registered to BCM	Done

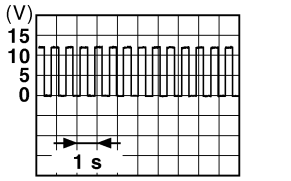
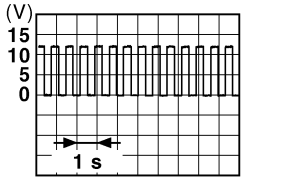
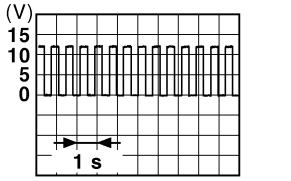
Monitor Item	Condition	Value/Status
TP 2	The ID of second key is not registered to BCM	Yet
	The ID of second key is registered to BCM	Done
TP 1	The ID of first key is not registered to BCM	Yet
	The ID of first key is registered to BCM	Done

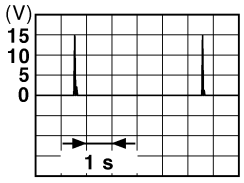
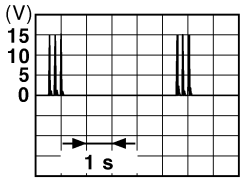
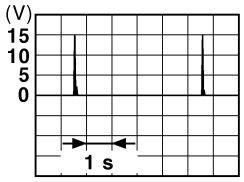
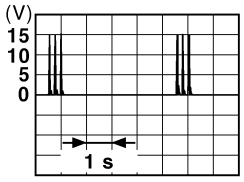
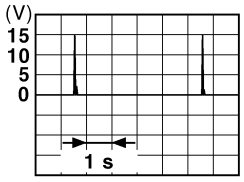
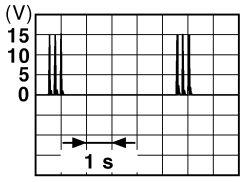
TERMINAL LAYOUT

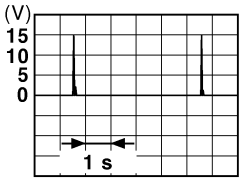
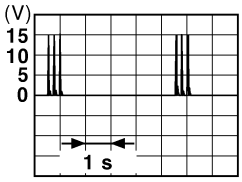
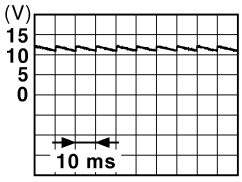
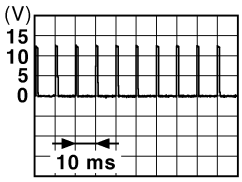


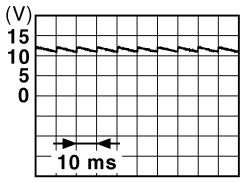
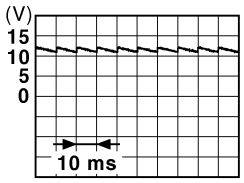
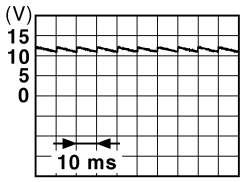
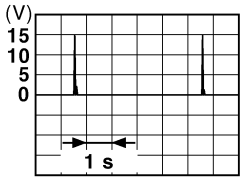
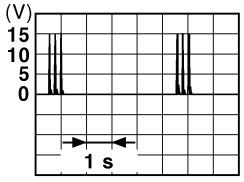
PHYSICAL VALUES

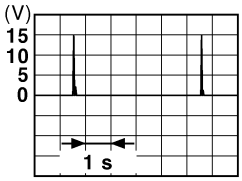
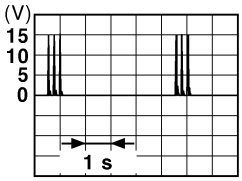
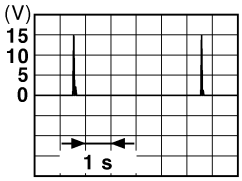
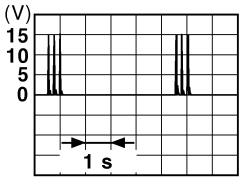
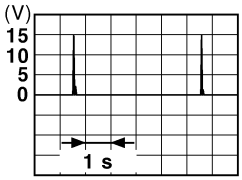
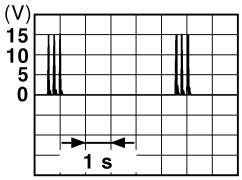
Terminal No. (Wire color) +	Terminal No. (Wire color) –	Description Signal name	Description Input/ Output	Condition		Value (Approx.)
1 (W/B)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
2 (R/Y)	Ground	P/W power supply (BAT)	Output	Ignition switch OFF		Battery voltage
3 (L/W)	Ground	P/W power supply (IGN)	Output	Ignition switch ON		Battery voltage
4 (P/W)	Ground	Interior room lamp power supply	Output	Interior room lamp battery saver is activated. (Cuts the interior room lamp power supply)		0 V
				Interior room lamp battery saver is not activated. (Outputs the interior room lamp power supply)		Battery voltage
5 (G/Y)	Ground	Passenger door UNLOCK	Output	Passenger door	UNLOCK (Actuator is activated)	Battery voltage
					Other than UNLOCK (Actuator is not activated)	0 V
7 (R/W)	Ground	Step lamp	Output	Step lamp	ON	0 V
					OFF	Battery voltage
8 (V)	Ground	All doors LOCK	Output	All doors	LOCK (Actuator is activated)	Battery voltage
					Other than LOCK (Actuator is not activated)	0 V
9 (G)	Ground	Driver door UNLOCK	Output	Driver door	UNLOCK (Actuator is activated)	Battery voltage
					Other than UNLOCK (Actuator is not activated)	0 V
10 (G/Y)	Ground	Rear RH door and rear LH door UNLOCK	Output	Rear RH door and rear LH door	UNLOCK (Actuator is activated)	Battery voltage
					Other than UNLOCK (Actuator is not activated)	0 V
11 (Y/R)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
13 (B)	Ground	Ground	—	Ignition switch ON		0 V
15 (Y)	Ground	ACC indicator lamp	Output	Ignition switch	OFF (LOCK indicator is not illuminated)	Battery voltage
					ACC or ON	0 V
17 (G/B)	Ground	Turn signal RH (Front and door mirror)	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch RH	 PKID0926E 6.5 V

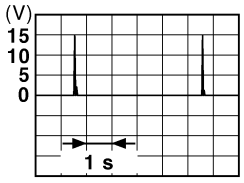
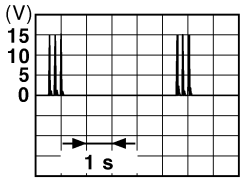
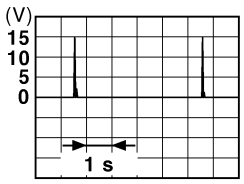
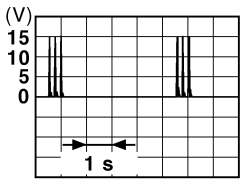
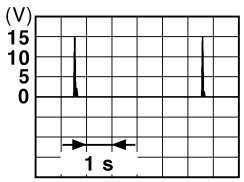
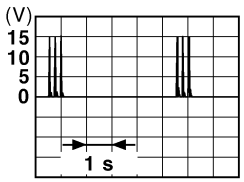
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
18 (G/Y)	Ground	Turn signal LH (Front and door mirror)	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch LH	 PKID0926E 6.5 V
19 (Y)	Ground	Room lamp timer control	Output	Interior room lamp	OFF	Battery voltage
					ON	0 V
20 (G/B)	Ground	Turn signal RH (Rear)	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch RH	 PKID0926E 6.5 V
23 (R)	Ground	Trunk lid opening	Output	Trunk lid	OPEN (Trunk lid opener actuator is activated)	Battery voltage
					Other than OPEN (Trunk lid opener actuator is not activated)	0 V
24 (G)	Ground	Rear fog lamp	Output	Rear fog lamp	OFF	0 V
					ON	Battery voltage
25 (G/Y)	Ground	Turn signal LH (Rear)	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch LH	 PKID0926E 6.5 V
30 (V/W)	Ground	Trunk room lamp	Output	Trunk room lamp	OFF	0 V
					ON	Battery voltage

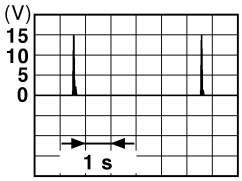
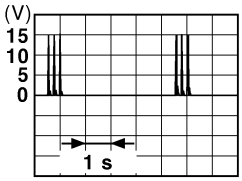
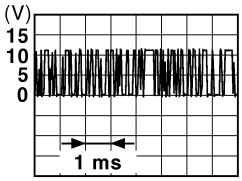
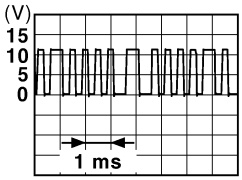
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
34 (B)	Ground	Trunk room antenna (-)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	 JMKIA0062GB
					When Intelligent Key is not in the passenger compartment	 JMKIA0063GB
35 (W)	Ground	Trunk room antenna (+)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	 JMKIA0062GB
					When Intelligent Key is not in the passenger compartment	 JMKIA0063GB
38 (L/O)	Ground	Rear bumper antenna (-)	Output	When the trunk lid opener request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB

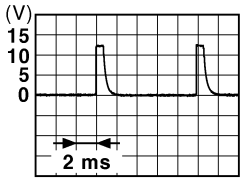
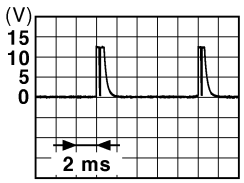
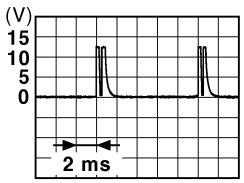
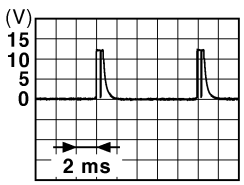
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
		Signal name	Input/ Output			
+	–					
39 (BR/W)	Ground	Rear bumper antenna (+)	Output	When the trunk lid opener request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB
47 (BR/W)	Ground	Ignition relay (IPDM E/R) control	Output	Ignition switch	OFF or ACC	Battery voltage
					ON	0 V
50 (W)	Ground	Trunk room lamp switch	Input	Trunk room lamp switch	OFF (When trunk lid closes)	 JPMIA0011GB 11.8 V
					ON (When trunk lid opens)	0 V
52 (R)	Ground	Starter relay control	Output	Ignition switch ON	When selector lever is in P or N position	Battery voltage
					When selector lever is not in P or N position	0.3 V
				Ignition switch OFF		0 V
61 (G/R)	Ground	Trunk lid request switch	Input	Trunk lid request switch	ON (Pressed)	0 V
					OFF (Not pressed)	 JPMIA0016GB 1.0 V
64 (GR)	Ground	Request switch buzzer	Output	Request switch buzzer	Sounding	0 V
					Not sounding	Battery voltage

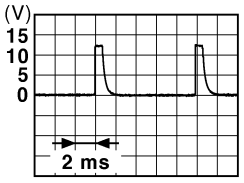
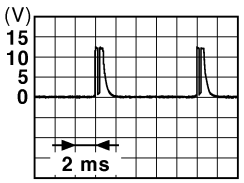
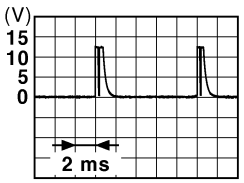
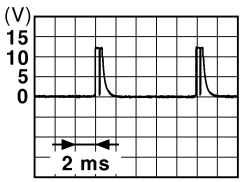
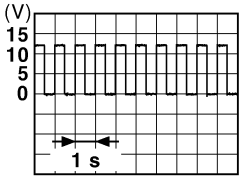
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
67 (L/R)	Ground	Trunk lid opener switch	Input	Trunk lid opener switch	Pressed	0 V
					Not pressed	 JPMIA0011GB 11.8 V
68 (R/W)	Ground	Rear RH door switch	Input	Rear RH door switch	OFF (When rear RH door closes)	 JPMIA0011GB 11.8 V
					ON (When rear RH door opens)	0 V
69 (R/B)	Ground	Rear LH door switch	Input	Rear LH door switch	OFF (When rear LH door closes)	 JPMIA0011GB 11.8 V
					ON (When rear LH door opens)	0 V
72 (B/R)	Ground	Room antenna 2 (-) (center console)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	 JMKIA0062GB
					When Intelligent Key is not in the passenger compartment	 JMKIA0063GB

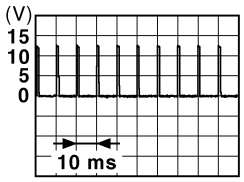
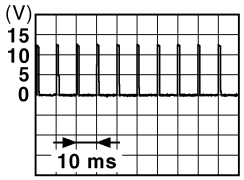
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
73 (W/R)	Ground	Room antenna 2 (+) (center console)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	 JMKIA0062GB
					When Intelligent Key is not in the passenger compartment	 JMKIA0063GB
74 (B/Y)	Ground	Passenger door antenna (-)	Output	When the passenger door request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB
75 (LG)	Ground	Passenger door antenna (+)	Output	When the passenger door request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB

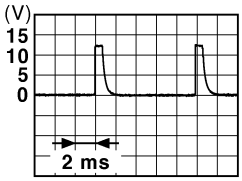
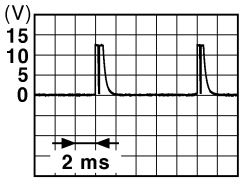
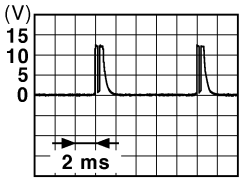
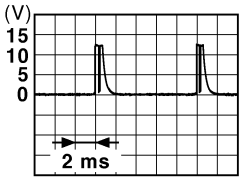
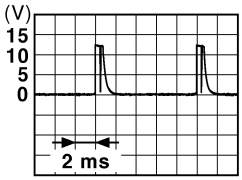
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
76 (V)	Ground	Driver door antenna (-)	Output	When the driver door request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB
77 (P)	Ground	Driver door antenna (+)	Output	When the driver door request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB
78 (R)	Ground	Room antenna 1 (-) (instrument panel)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	 JMKIA0062GB
					When Intelligent Key is not in the passenger compartment	 JMKIA0063GB

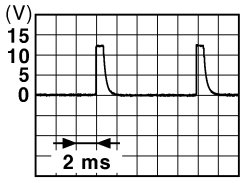
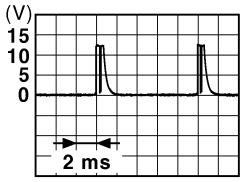
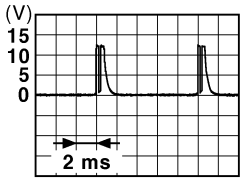
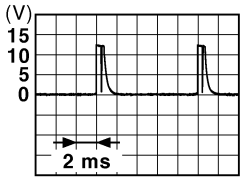
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
79 (G)	Ground	Room antenna 1 (+) (instrument panel)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	 JMKIA0062GB
					When Intelligent Key is not in the passenger compartment	 JMKIA0063GB
80 (G/O)	Ground	NATS antenna amp (built in key slot)	Input/ Output	During waiting	Ignition switch is pressed while inserting the key into the key slot.	Just after pressing ignition switch. Pointer of tester should move.
81 (O)	Ground	NATS antenna amp (built in key slot)	Input/ Output	During waiting	Ignition switch is pressed while inserting the key into the key slot.	Just after pressing ignition switch. Pointer of tester should move.
82 (R/B)	Ground	Ignition relay [fuse block (J/B)] control	Output	Ignition switch	OFF or ACC	0 V
					ON	Battery voltage
83 (L/O)	Ground	Remote keyless entry receiver communication	Input/ Output	During waiting		 JMKIA0064GB
				When operating either button on the key		 JMKIA0065GB

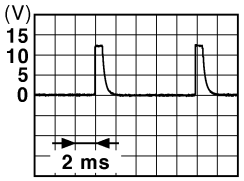
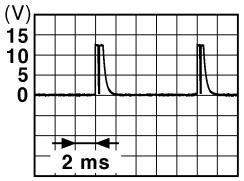
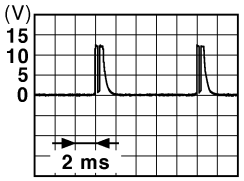
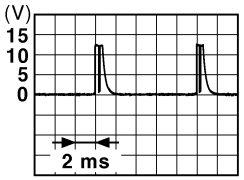
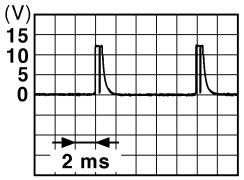
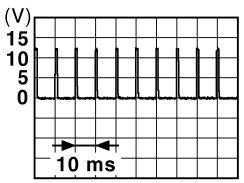
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
87 (R/Y)	Ground	Combination switch INPUT 5	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 JPMIA0041GB 1.4 V
					Front fog lamp switch ON (Wiper intermittent dial 4)	 JPMIA0037GB 1.3 V
					Rear fog lamp switch ON (Wiper intermittent dial 4)	 JPMIA0142GB 1.2 V
					Any of the conditions below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 6 • Wiper intermittent dial 7	 JPMIA0040GB 1.3 V

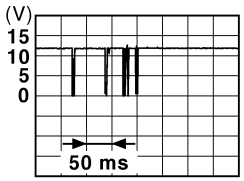
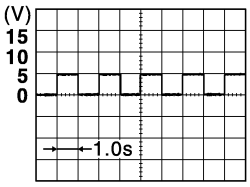
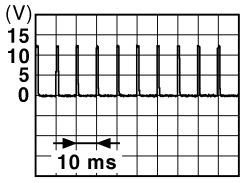
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
		Signal name	Input/ Output			
+	–					
88 (R/G)	Ground	Combination switch INPUT 3	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 JPMIA0041GB 1.4 V
					Lighting switch HI (Wiper intermittent dial 4)	 JPMIA0036GB 1.3 V
					Lighting switch 2ND (Wiper intermittent dial 4)	 JPMIA0037GB 1.3 V
					Any of the conditions below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3	 JPMIA0040GB 1.3 V
89 (BR)	Ground	Push-button ignition switch (push switch)	Input	Push-button ignition switch (push switch)	Pressed	0 V
					Not pressed	Battery voltage
90 (P)	Ground	CAN-L	Input/ Output	—		—
91 (L)	Ground	CAN-H	Input/ Output	—		—
92 (R/L)	Ground	Key slot illumination	Output	Key slot illumination	OFF	Battery voltage
					Blinking	 JPMIA0015GB 6.5 V
					ON	0 V

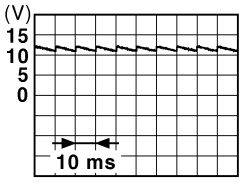
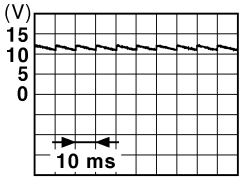
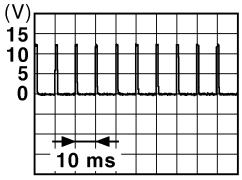
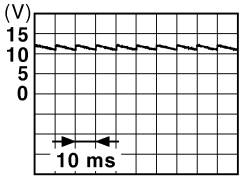
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
93 (Y)	Ground	ON indicator lamp	Output	Ignition switch	OFF (LOCK indicator is not illuminated)	Battery voltage
					ON or ACC	0 V
95 (L)	Ground	ACC relay control	Output	Ignition switch	OFF	0 V
					ACC or ON	Battery voltage
96 (Y/R)	Ground	Control device (detention switch) power supply	Output	—		Battery voltage
97 (L/O)	Ground	Steering lock condition No. 1	Input	Steering lock	LOCK status	0 V
					UNLOCK status	Battery voltage
98 (G/R)	Ground	Steering lock condition No. 2	Input	Steering lock	LOCK status	Battery voltage
					UNLOCK status	0 V
99 (G/B)	Ground	Selector lever P position switch	Input	Selector lever	P position	0 V
					Any position other than P	Battery voltage
100 (P/L)	Ground	Passenger door request switch	Input	Passenger door request switch	ON (Pressed)	0 V
					OFF (Not pressed)	 JPMIA0016GB 1.0 V
101 (B/W)	Ground	Driver door request switch	Input	Driver door request switch	ON (Pressed)	0 V
					OFF (Not pressed)	 JPMIA0016GB 1.0 V
102 (Y)	Ground	Blower fan motor relay control	Output	Ignition switch	OFF or ACC	0 V
					ON	Battery voltage
103 (L/R)	Ground	Remote keyless entry receiver power supply	Output	Ignition switch OFF		Battery voltage
106 (G/Y)	Ground	Steering wheel lock unit power supply	Output	Ignition switch	OFF or ACC	Battery voltage
					ON	0 V

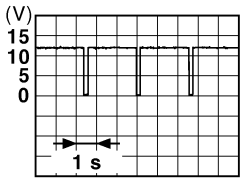
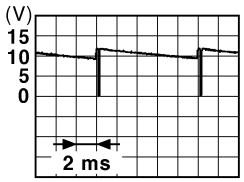
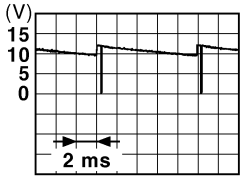
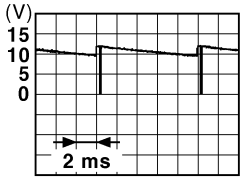
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
107 (R/W)	Ground	Combination switch INPUT 1	Input	Combination switch (Wiper intermit-tent dial 4)	All switch OFF	 JPMIA0041GB 1.4 V
					Turn signal switch LH	 JPMIA0037GB 1.3 V
					Turn signal switch RH	 JPMIA0036GB 1.3 V
					Front wiper switch LO	 JPMIA0038GB 1.3 V
					Front washer switch ON	 JPMIA0039GB 1.3 V

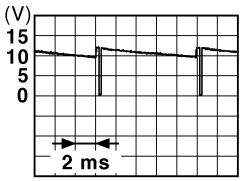
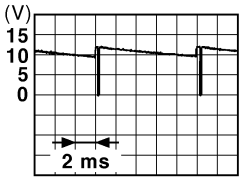
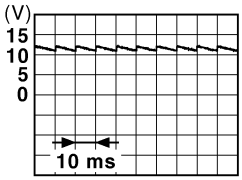
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
108 (P/B)	Ground	Combination switch INPUT 4	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 JPMIA0041GB 1.4 V
					Lighting switch AUTO (Wiper intermittent dial 4)	 JPMIA0038GB 1.3 V
					Lighting switch 1ST (Wiper intermittent dial 4)	 JPMIA0036GB 1.3 V
					Any of the conditions below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6	 JPMIA0039GB 1.3 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
109 (R/B)	Ground	Combination switch INPUT 2	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	 JPMIA0041GB 1.4 V
					Lighting switch PASS	 JPMIA0037GB 1.3 V
					Lighting switch 2ND	 JPMIA0036GB 1.3 V
					Front wiper switch INT	 JPMIA0038GB 1.3 V
					Front wiper switch HI	 JPMIA0040GB 1.3 V
110 (G/O)	Ground	Hazard switch	Input	Hazard switch	ON	0 V
					OFF	 JPMIA0012GB 1.1 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
111 (L/Y)	Ground	Steering lock unit communication	Input/ Output	Steering lock	LOCK status	Battery voltage
					LOCK or UNLOCK	 JMKIA0066GB
					For 15 seconds after UNLOCK	Battery voltage
					15 seconds or later after UNLOCK	0 V
113 (P/B)	Ground	Optical sensor	Input	Ignition switch ON	When bright outside of the vehicle	Close to 5 V
					When dark outside of the vehicle	Close to 0 V
115 (L)	Ground	Shock sensor	Input	Ignition switch	OFF	0 V
					ACC	5.0 V
					ON	 JPMIA1034GB 2.5 V
116 (R/W)	Ground	Fuse check (Stop lamp switch)	Input	—		Battery voltage
118 (O/L)	Ground	Stop lamp switch	Input	Stop lamp switch	OFF (Brake pedal is not depressed)	0 V
					ON (Brake pedal is depressed)	Battery voltage
119 (G/W)	Ground	Front door lock assembly driver side (unlock sensor)	Input	Driver door	LOCK status (unlock sensor switch OFF)	 JPMIA0012GB 1.1 V
					UNLOCK status (unlock sensor switch ON)	0 V
121 (Y)	Ground	Key slot switch	Input	When the key is inserted into key slot		Battery voltage
				When the key is not inserted into key slot		0 V
122 (V/R)	Ground	ACC feedback	Input	Ignition switch	OFF	0 V
					ACC or ON	Battery voltage
123 (G/W)	Ground	IGN feedback	Input	Ignition switch	OFF or ACC	0 V
					ON	Battery voltage

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
		Signal name	Input/ Output			
+	–					
124 (R/B)	Ground	Passenger door switch	Input	Passenger door switch	OFF (When passenger door closes)	 JPMIA0011GB 11.8 V
					ON (When passenger door opens)	0 V
128 (GR)	Ground	Door lock and unlock switch LOCK	Input	Door lock and unlock switch [power window main switch or front power window switch (passenger side)]	NEUTRAL position	 JPMIA0011GB 11.8 V
					LOCK position	0 V
130* (GR/W)	Ground	Rear window defogger switch	Input	Ignition switch ON	Rear window defogger switch OFF	 JPMIA0012GB 1.1 V
					Rear window defogger switch ON	0 V
131 (GR/R)	Ground	Door lock and unlock switch UNLOCK	Input	Door lock and unlock switch [power window main switch or front power window switch (passenger side)]	NEUTRAL position	 JPMIA0011GB 11.8 V
					UNLOCK position	0 V
133 (W)	Ground	Push-button ignition switch illumination	Output	Push-button ignition switch illumination	ON	9.5 V
					OFF	0 V
134 (R)	Ground	LOCK indicator lamp	Output	LOCK indicator lamp	OFF	Battery voltage
					ON	0 V
137 (P)	Ground	Receiver and sensor ground	Input	Ignition switch ON		0 V
138 (V/W)	Ground	Receiver and sensor power supply output	Output	Ignition switch	OFF	0 V
					ACC or ON	5.0 V
140 (R/G)	Ground	Selector lever P/N position	Input	Selector lever	P or N position	Battery voltage
					Except P and N positions	0 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
141 (L/O)	Ground	Security indicator	Output	Security indicator	ON	0 V
					Blinking	 JPMIA0014GB 11.3 V
					OFF	Battery voltage
142 (LG/B)	Ground	Combination switch OUTPUT 5	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Lighting switch 1ST	 JPMIA0031GB 10.7 V
					Lighting switch HI	
					Lighting switch 2ND	
					Turn signal switch RH	
143 (L/W)	Ground	Combination switch OUTPUT 1	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front wiper switch HI (Wiper intermittent dial 4)	 JPMIA0032GB 10.7 V
					Any of the conditions below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3 • Wiper intermittent dial 6 • Wiper intermittent dial 7	
144 (G/B)	Ground	Combination switch OUTPUT 2	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front washer switch ON (Wiper intermittent dial 4)	 JPMIA0033GB 10.7 V
					Any of the conditions below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6	

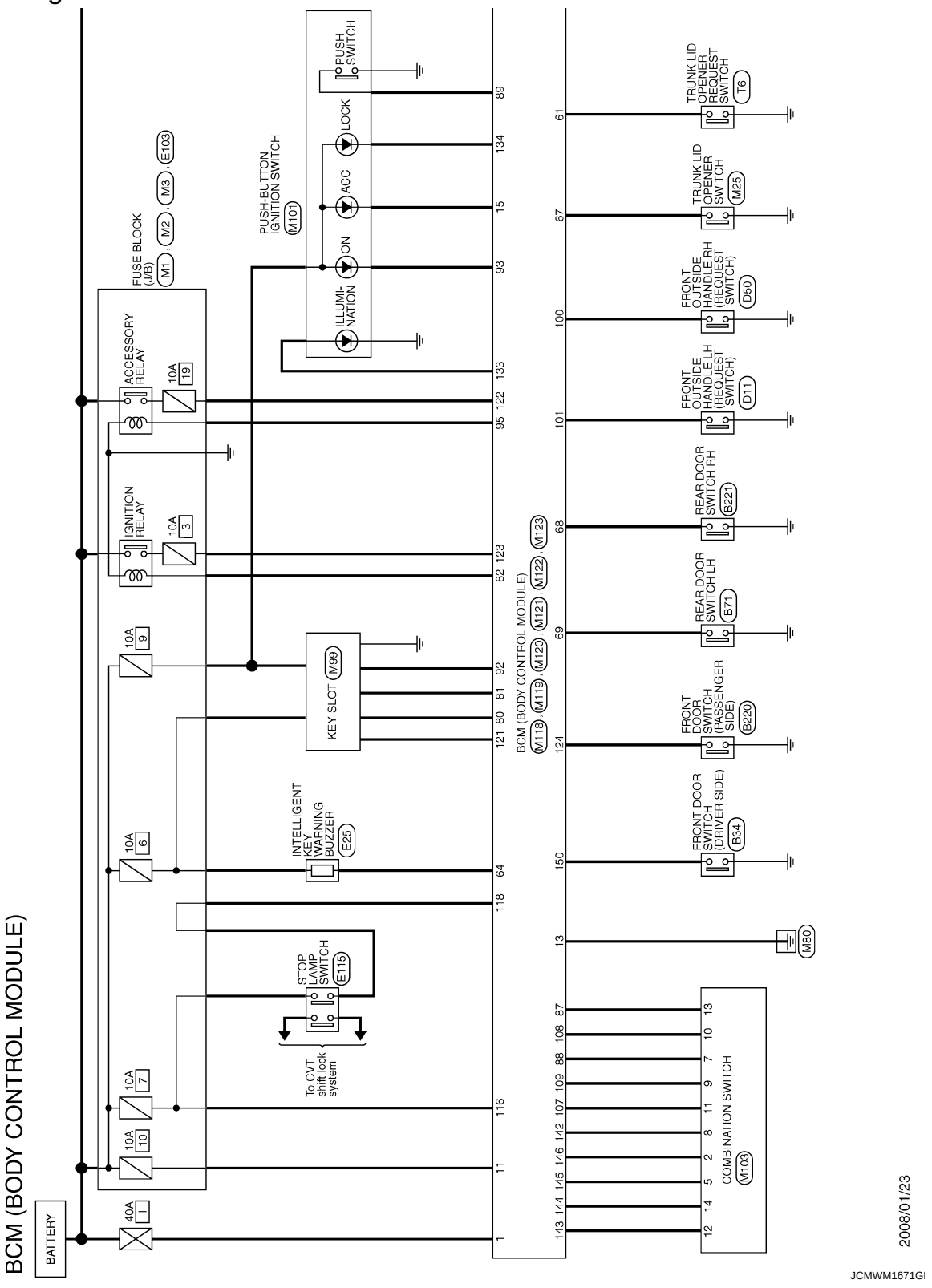
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
145 (LG/R)	Ground	Combination switch OUTPUT 3	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Front wiper switch INT	 JPMIA0034GB 10.7 V
					Front wiper switch LO	
					Lighting switch AUTO	
					Rear fog lamp switch ON	
146 (G/Y)	Ground	Combination switch OUTPUT 4	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Front fog lamp switch ON	 JPMIA0035GB 10.7 V
					Lighting switch 2ND	
					Lighting switch PASS	
					Turn signal switch LH	
150 (SB)	Ground	Driver door switch	Input	Driver door switch	OFF (When driver door closes)	 JPMIA0011GB 11.8 V
					ON (When driver door opens)	0 V
151 (G/R)	Ground	Rear window defogger relay	Output	Rear window defogger	Active	0 V
					Not activated	Battery voltage

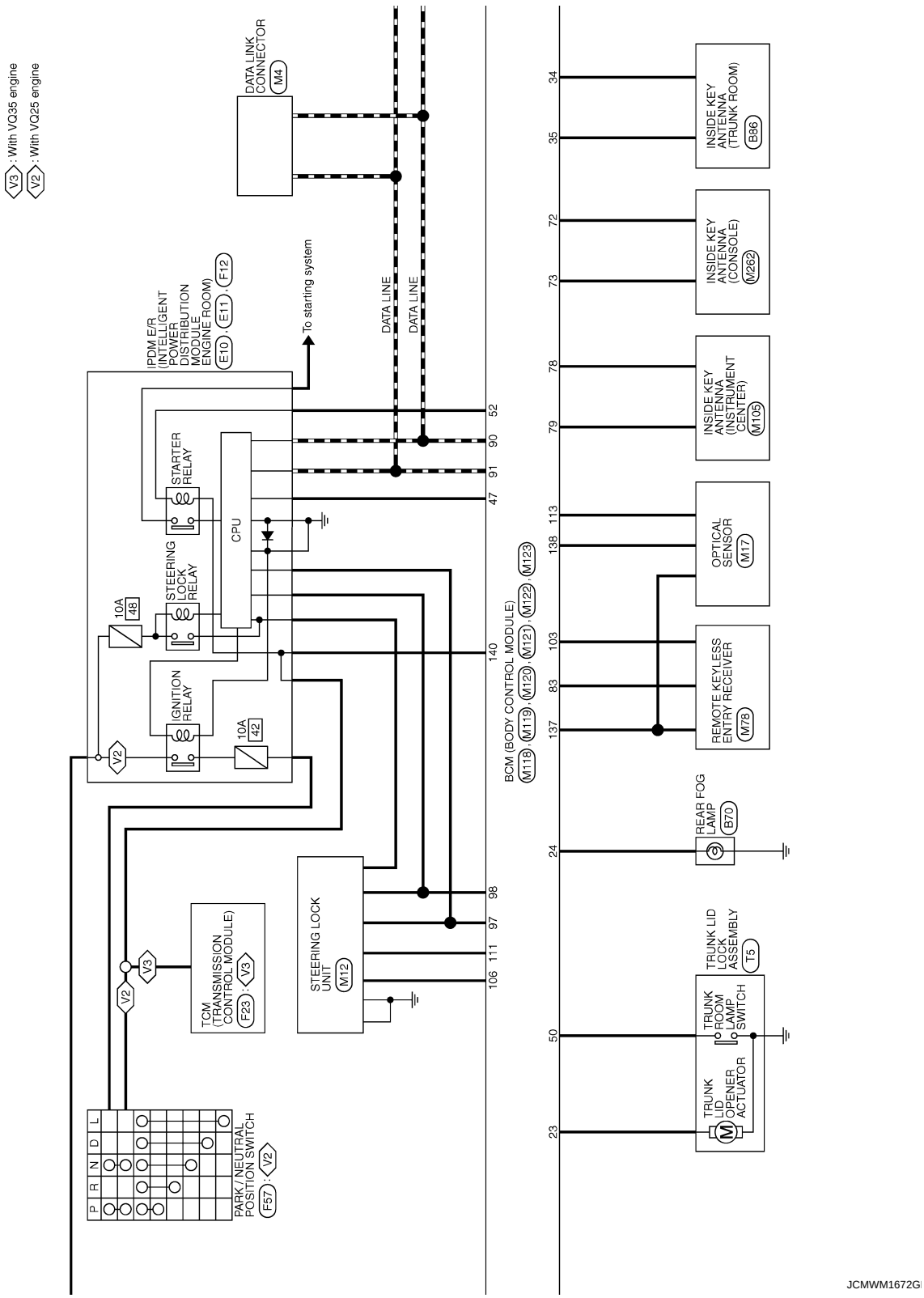
NOTE:

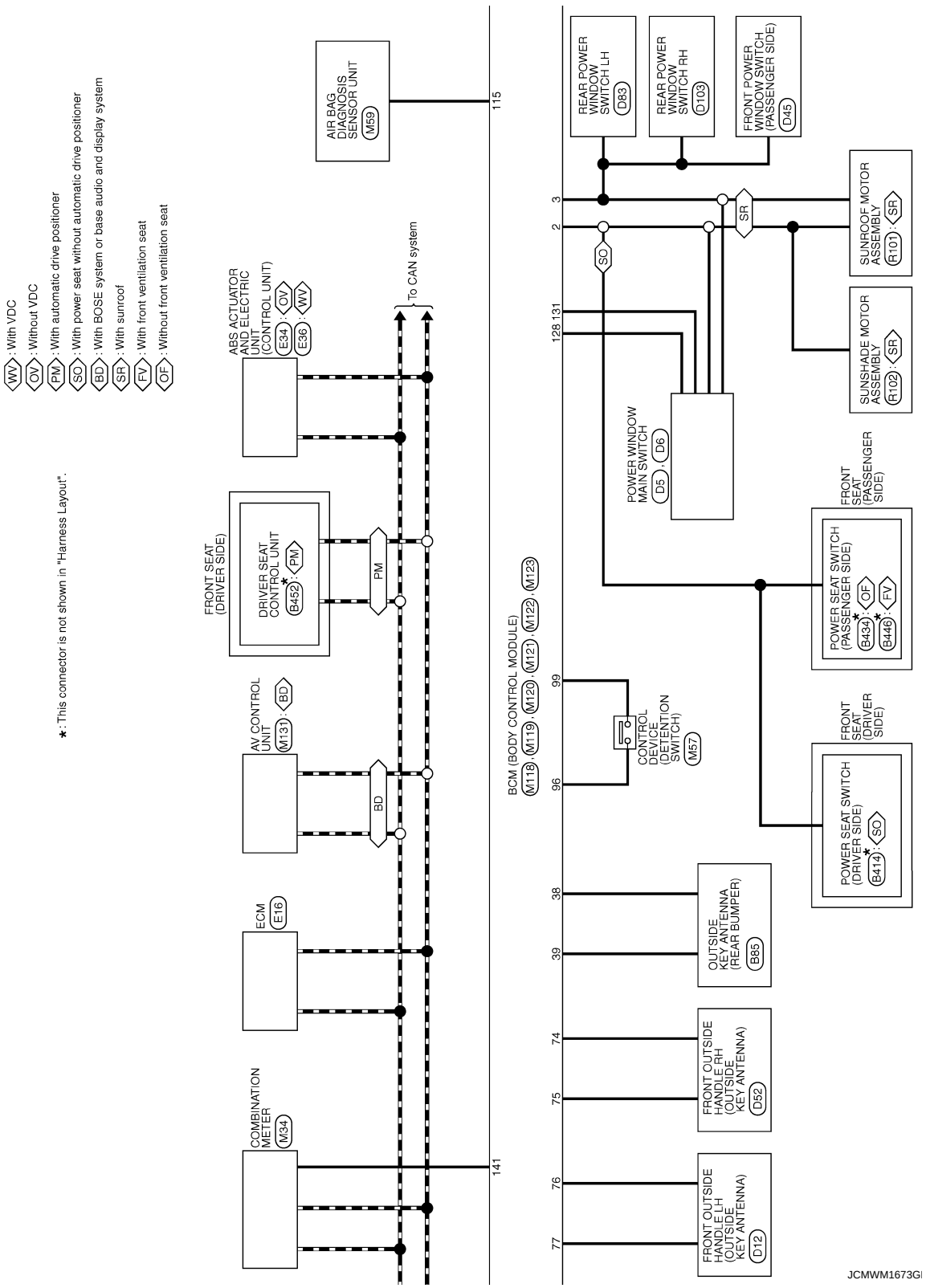
*: Without BOSE audio system

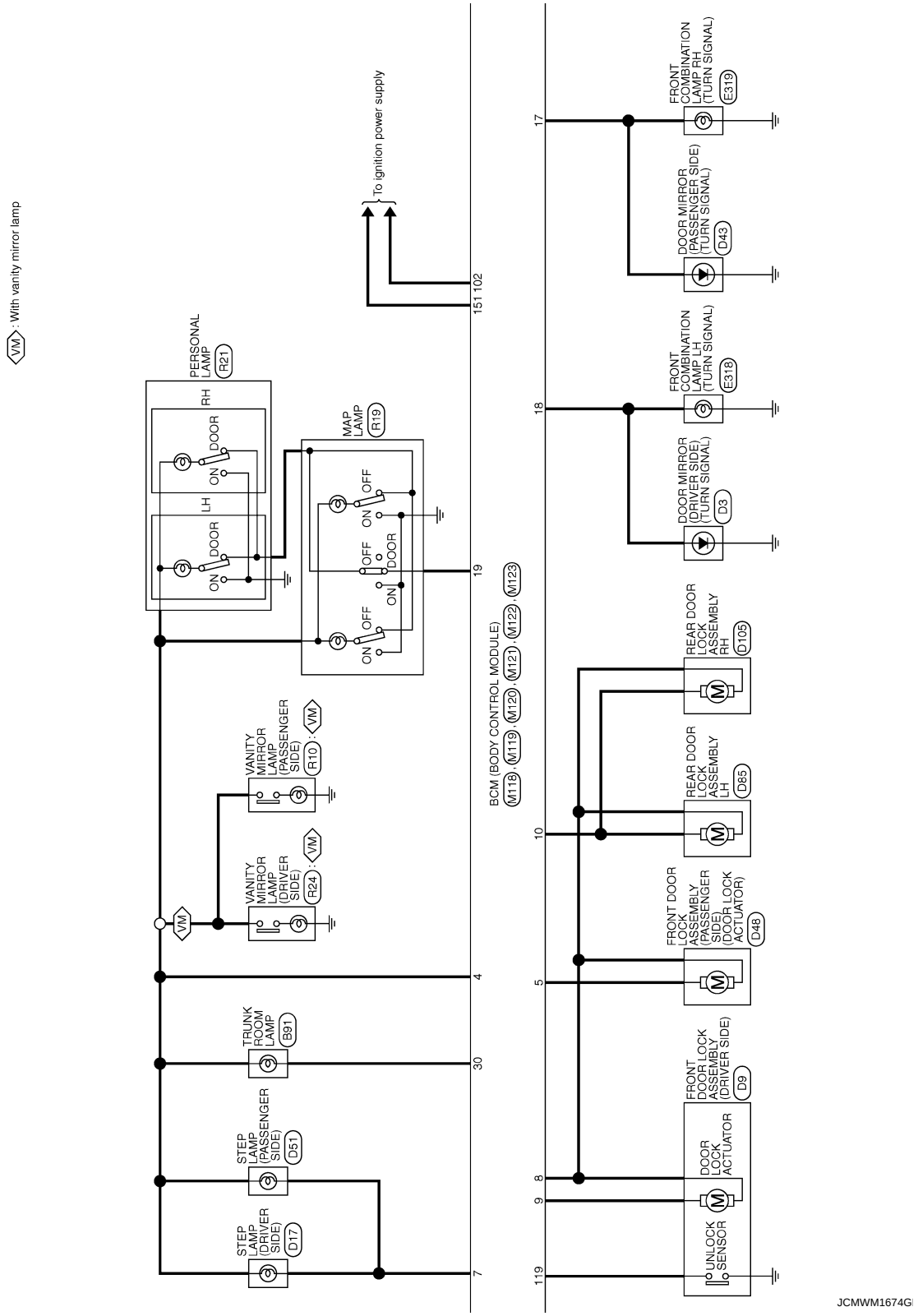
Wiring Diagram - BCM -

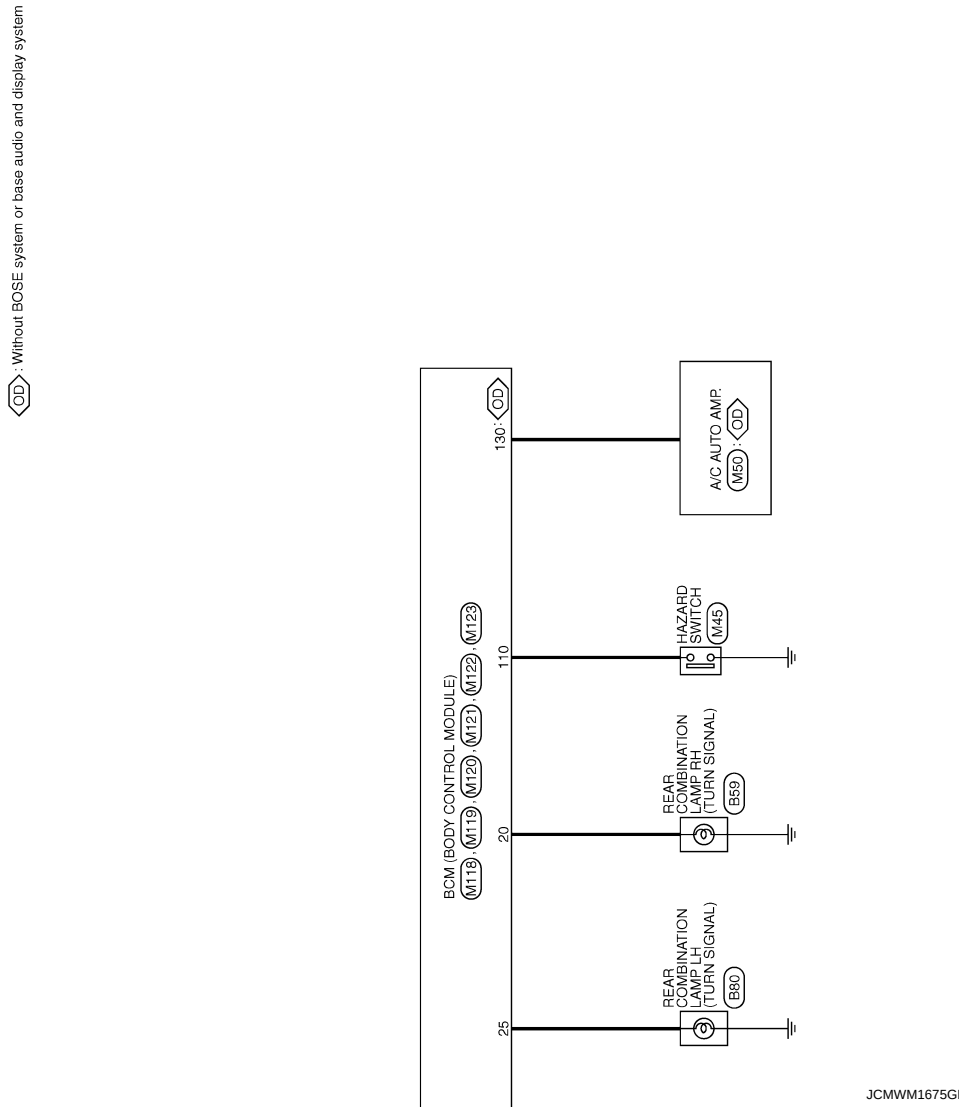
INFOID:0000000003959691




V3 : With VQ35 engine
V2 : With VQ25 engine
DATA LINK CONNECTOR M4
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) E10, E11, F12
To starting system
DATA LINE
DATA LINE
STARTER RELAY
CPU
STEERING LOCK RELAY
IGNITION RELAY
10A 48
10A 42
BCM (BODY CONTROL MODULE) M118, M119, M120, M121, M122, M123
52
90
91
47
140
98
97
111
106
TCM (TRANSMISSION CONTROL MODULE) F23
STEERING LOCK UNIT M12
PARK / NEUTRAL POSITION SWITCH F57
P R N D L
34
35
72
73
78
79
113
138
103
83
137
24
50
23
INSIDE KEY ANTENNA (TRUNK ROOM) B86
INSIDE KEY ANTENNA (CONSOLE) M262
INSIDE KEY ANTENNA (INSTRUMENT CENTER) M105
OPTICAL SENSOR M17
REMOTE KEYLESS ENTRY RECEIVER M78
REAR FOG LAMP B70
TRUNK LID LOCK ASSEMBLY T5
TRUNK ROOM LAMP SWITCH
TRUNK LID OPENER ACTUATOR
JCMWM1672G


WV : With VDC
OV : Without VDC
PM : With automatic drive positioner
SO : With power seat without automatic drive positioner
BD : With BOSE system or base audio and display system
SR : With sunroof
FV : With front ventilation seat
OF : Without front ventilation seat
*: This connector is not shown in "Harness Layout".
AIR BAG DIAGNOSIS SENSOR UNIT M59
115
To CAN system
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) E34 OV E36 WV
FRONT SEAT (DRIVER SIDE)
DRIVER SEAT CONTROL UNIT* B452 PM
PM
AV CONTROL UNIT M131 BD
BD
ECM E16
COMBINATION METER M34
141
BCM (BODY CONTROL MODULE) M118 M119 M120 M121 M122 M123
99
96
38
39
74
75
76
77
CONTROL DEVICE (DETENTION SWITCH) M57
OUTSIDE KEY ANTENNA (REAR BUMPER) B85
FRONT OUTSIDE HANDLE RH (OUTSIDE KEY ANTENNA) D52
FRONT OUTSIDE HANDLE LH (OUTSIDE KEY ANTENNA) D12
REAR POWER WINDOW SWITCH LH D83
REAR POWER WINDOW SWITCH RH D103
FRONT POWER WINDOW SWITCH (PASSENGER SIDE) D45
3
2
128 131
SO
SR
POWER WINDOW MAIN SWITCH D5 D6
SUNROOF MOTOR ASSEMBLY R101 SR
SUNSHADE MOTOR ASSEMBLY R102 SR
FRONT SEAT (PASSENGER SIDE)
POWER SEAT SWITCH (PASSENGER SIDE)* B434 OF B446 FV
FRONT SEAT (DRIVER SIDE)
POWER SEAT SWITCH (DRIVER SIDE)* B413 SO
JCMWM1673GB


VM : With vanity mirror lamp
To ignition power supply
151 102
PERSONAL LAMP R21
RH
DOOR
ON
LH
DOOR
ON
MAP LAMP R19
ON OFF
OFF ON DOOR
ON OFF
VANITY MIRROR LAMP (PASSENGER SIDE) R10 : VM
VANITY MIRROR LAMP (DRIVER SIDE) R24 : VM
VM
TRUNK ROOM LAMP B91
STEP LAMP (PASSENGER SIDE) D51
STEP LAMP (DRIVER SIDE) D17
4
30
7
19
BCM (BODY CONTROL MODULE)
M118, M119, M120, M121, M122, M123
10
5
8
9
11
9
17
18
FRONT COMBINATION LAMP RH (TURN SIGNAL) E319
DOOR MIRROR (PASSENGER SIDE) (TURN SIGNAL) D43
FRONT COMBINATION LAMP LH (TURN SIGNAL) E318
DOOR MIRROR (DRIVER SIDE) (TURN SIGNAL) D3
REAR DOOR LOCK ASSEMBLY RH D105
REAR DOOR LOCK ASSEMBLY LH D85
FRONT DOOR LOCK ASSEMBLY (PASSENGER SIDE) (DOOR LOCK ACTUATOR) D48
FRONT DOOR LOCK ASSEMBLY (DRIVER SIDE) D9
DOOR LOCK ACTUATOR
UNLOCK SENSOR
JCMWM1674G


OD : Without BOSE system or base audio and display system
BCM (BODY CONTROL MODULE)
M118, M119, M120, M121, M122, M123
130 : OD
110
20
25
A/C AUTO AMP.
M50
OD : OD
HAZARD SWITCH
M45
REAR COMBINATION LAMP RH (TURN SIGNAL)
B59
REAR COMBINATION LAMP LH (TURN SIGNAL)
B80
JCMWM1675GI

BCM (BODY CONTROL MODULE)

Connector No.	M103
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH

H.S.

1	2	3		4	5	6
7	8	9	10	11	12	13	14

Terminal No.	Color of Wire	Signal Name [Specification]
2	G/Y	OUTPUT 4
5	LG/R	OUTPUT 3
7	R/G	INPUT 3
8	LG/B	OUTPUT 5
9	R/B	INPUT 2
10	P/B	INPUT 4
11	R/W	INPUT 1
12	L/W	OUTPUT 1
13	R/Y	INPUT 5
14	G/B	OUTPUT 2

Connector No.	M120
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS12FW-CS

H.S.

20	21		22	23	24
25	26	27	28	29	30	31

Terminal No.	Color of Wire	Signal Name [Specification]
20	G/B	TURN SIGNAL RH (REAR)
23	R	TRUNK OPEN OUTPUT
24	G	REAR FOG LAMP OUTPUT
25	G/Y	TURN SIGNAL LH (REAR)
30	V/W	TRUNK LAMP OUTPUT

Connector No.	M118
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	M03FB-LC

H.S.

1	3
2	

Terminal No.	Color of Wire	Signal Name [Specification]
1	W/B	BAT (F/L)
2	R/Y	POWER WINDOW POWER SUPPLY (BAT)
3	L/W	POWER WINDOW POWER SUPPLY (IGN)

Connector No.	M121
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FGY-NH

H.S.

51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32
71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52

Terminal No.	Color of Wire	Signal Name [Specification]
34	B	TRUNK ANT 1 B
35	W	TRUNK ANT 1 A
38	L/O	RR BUMPER ANT B
39	BR/W	RR BUMPER ANT A
47	BR/W	IGN RELAY IPDM E/R CONT
50	W	TRUNK SW
52	R	IGN RELAY IPDM E/R CONT
61	G/R	TRUNK REQUEST SW
64	GR	REQUEST SW BUZZER
67	L/R	INTERIOR TRUNK SW
68	R/W	REAR RH DOOR SW

Connector No.	M119
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS16FW-CS

H.S.

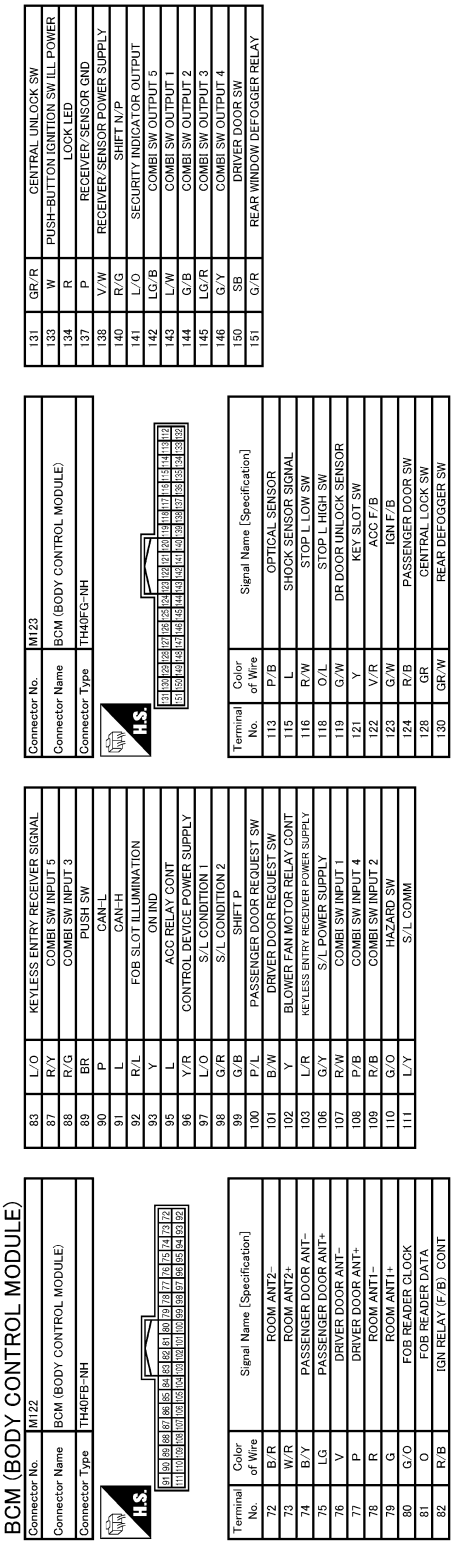
4	5	6	7		8	9	10
11	12	13	14	15	16	17	18	19

Terminal No.	Color of Wire	Signal Name [Specification]
4	P/W	INTERIOR ROOM LAMP POWER SUPPLY
5	G/Y	PASSENGER DOOR UNLOCK OUTPUT
7	R/W	STEP LAMP OUTPUT
8	V	ALL DOOR LOCK OUTPUT
9	G	DRIVER DOOR UNLOCK OUTPUT
10	G/Y	REAR DOOR UNLOCK OUTPUT
11	Y/R	BAT (FUSE)
13	B	GND
15	Y	ACC IND
17	G/B	TURN SIGNAL RH (FRONT, D/MIRROR)
18	G/Y	TURN SIGNAL LH (FRONT, D/MIRROR)

Terminal No.	Color of Wire	Signal Name [Specification]
19	Y	ROOM LAMP TIMER CONTROL

Terminal No.	Color of Wire	Signal Name [Specification]
69	R/B	REAR LH DOOR SW

JCMWM1676G



JCMWM1677GI

Fail-safe

INFOID:0000000003959692

FAIL-SAFE CONTROL BY DTC

BCM performs fail-safe control when any DTC is detected.

Display contents of CONSULT	Fail-safe	Cancellation
B2013: ID DISCORD BCM-S/L	Inhibit engine cranking	Erase DTC
B2014: CHAIN OF S/L-BCM	Inhibit engine cranking	Erase DTC
B2190: NATS ANTENNA AMP	Inhibit engine cranking	Erase DTC
B2191: DIFFERENCE OF KEY	Inhibit engine cranking	Erase DTC
B2192: ID DISCORD BCM-ECM	Inhibit engine cranking	Erase DTC
B2193: CHAIN OF BCM-ECM	Inhibit engine cranking	Erase DTC
B2557: VEHICLE SPEED	Inhibit steering lock	When normal vehicle speed signals have been received from ABS actuator and electric unit (control unit) for 500 ms
B2560: STARTER CONT RELAY	Inhibit engine cranking	500 ms after the following CAN signal communication status has become consistent • Starter control relay signal • Starter relay status signal
B2601: SHIFT POSITION	Inhibit steering lock	500 ms after the following signal reception status becomes consistent • Selector lever P position switch signal • P range signal (CAN)
B2602: SHIFT POSITION	Inhibit steering lock	5 seconds after the following BCM recognition conditions are fulfilled • Ignition switch is in the ON position • Selector lever P position switch signal: Except P position (battery voltage) • Vehicle speed: 4 km/h (2.5 MPH) or more
B2603: SHIFT POSI STATUS	Inhibit steering lock	500 ms after the following BCM recognition conditions are fulfilled • Ignition switch is in the ON position • Selector lever P position switch signal: Except P position (battery voltage) • Selector lever P/N position signal: Except P and N positions (0 V)
B2604: PNP SW	Inhibit steering lock	500 ms after any of the following BCM recognition conditions is fulfilled • Status 1 - Ignition switch is in the ON position - Selector lever P/N position signal: P and N position (battery voltage) - P range signal or N range signal (CAN): ON • Status 2 - Ignition switch is in the ON position - Selector lever P/N position signal: Except P and N positions (0 V) - P range signal and N range signal (CAN): OFF
B2605: PNP SW	Inhibit steering lock	500 ms after any of the following BCM recognition conditions is fulfilled • Ignition switch is in the ON position - Power position: IGN - Selector lever P/N position signal: Except P and N positions (0 V) - Interlock/PNP switch signal (CAN): OFF • Status 2 - Ignition switch is in the ON position - Selector lever P/N position signal: P or N position (battery voltage) - PNP switch signal (CAN): ON
B2606: S/L RELAY	Inhibit engine cranking	500 ms after the following CAN signal communication status has become consistent • Steering lock relay signal (Request signal) • Steering lock relay signal (Condition signal)
B2607: S/L RELAY	Inhibit engine cranking	500 ms after the following CAN signal communication status has become consistent • Steering lock relay signal (Request signal) • Steering lock relay signal (Condition signal)

Display contents of CONSULT	Fail-safe	Cancellation
B2608: STARTER RELAY	Inhibit engine cranking	500 ms after the following signal communication status becomes consistent • Starter motor relay control signal • Starter relay status signal (CAN)
B2609: S/L STATUS	• Inhibit engine cranking • Inhibit steering lock	When the following steering lock conditions agree • BCM steering lock control status • Steering lock condition No. 1 signal status • Steering lock condition No. 2 signal status
B260A: IGNITION RELAY	Inhibit engine cranking	500 ms after the following conditions are fulfilled • IGN relay (IPDM E/R) control signal: OFF (Battery voltage) • Ignition ON signal (CAN to IPDM E/R): OFF (Request signal) • Ignition ON signal (CAN from IPDM E/R): OFF (Condition signal)
B260F: ENG STATE SIG LOST	Maintains the power supply position attained at the time of DTC detection	When any of the following conditions is fulfilled • Power position changes to ACC • Receives engine status signal (CAN)
B2612: S/L STATUS	• Inhibit engine cranking • Inhibit steering lock	When any of the following conditions is fulfilled • Steering lock unit status signal (CAN) is received normally • The BCM steering lock control status matches the steering lock status recognized by the steering lock unit status signal (CAN from IPDM E/R)
B2617: STARTER RELAY CIRC	Inhibit engine cranking	1 second after the starter motor relay control inside BCM becomes normal
B2618: BCM	Inhibit engine cranking	1 second after the ignition relay (IPDM E/R) control inside BCM becomes normal
B2619: BCM	Inhibit engine cranking	1 second after the steering lock unit power supply output control inside BCM becomes normal
B261E: VEHICLE TYPE	Inhibit engine cranking	BCM initialization
B26E1: ENG STATE NO RES	Inhibit engine cranking	When any of the following conditions is fulfilled • Power position changes to ACC • Receives engine status signal (CAN)
B26E9: S/L STATUS	• Inhibit engine cranking • Inhibit steering lock	When BCM transmits the LOCK request signal to steering lock unit, and receives LOCK response signal from steering lock unit, the following conditions is fulfilled • Steering condition No. 1 signal: LOCK (0 V) • Steering condition No. 2 signal: LOCK (Battery voltage)

HIGH FLASHER OPERATION

BCM detects the turn signal lamp circuit status by the current value.
BCM increases the turn signal lamp blinking speed if the bulb or harness open is detected with the turn signal lamp operating.

NOTE:
The blinking speed is normal while activating the hazard warning lamp.

DTC Inspection Priority Chart

INFOID:0000000003959693

If some DTCs are displayed at the same time, perform inspections one by one based on the following priority chart.

Priority	DTC
1	B2562: LOW VOLTAGE
2	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
3	• B2190: NATS ANTENNA AMP • B2191: DIFFERENCE OF KEY • B2192: ID DISCORD BCM-ECM • B2193: CHAIN OF BCM-ECM

Priority	DTC
4	• B2013: ID DISCORD BCM-S/L • B2014: CHAIN OF S/L-BCM • B2553: IGNITION RELAY • B2555: STOP LAMP • B2556: PUSH-BTN IGN SW • B2557: VEHICLE SPEED • B2560: STARTER CONT RELAY • B2601: SHIFT POSITION • B2602: SHIFT POSITION • B2603: SHIFT POSI STATUS • B2604: PNP SW • B2605: PNP SW • B2606: S/L RELAY • B2607: S/L RELAY • B2608: STARTER RELAY • B2609: S/L STATUS • B260A: IGNITION RELAY • B260B: STEERING LOCK UNIT • B260C: STEERING LOCK UNIT • B260D: STEERING LOCK UNIT • B260F: ENG STATE SIG LOST • B2612: S/L STATUS • B2614: ACC RELAY CIRC • B2615: BLOWER RELAY CIRC • B2616: IGN RELAY CIRC • B2617: STARTER RELAY CIRC • B2618: BCM • B2619: BCM • B261A: PUSH-BTN IGN SW • B261E: VEHICLE TYPE • B26E1: ENG STATE NO RES • B26E9: S/L STATUS • B26EA: KEY REGISTRATION • U0415: VEHICLE SPEED SIG
5	• B2621: INSIDE ANTENNA • B2622: INSIDE ANTENNA • B2623: INSIDE ANTENNA

DTC Index

INFOID:0000000003959694

NOTE:
The details of time display are as follows.
- CRNT: A malfunction is detected now.
- PAST: A malfunction was detected in the past.

IGN counter is displayed on Freeze Frame Data. For details of Freeze Frame Data and IGN Counter, refer to BCS-16, "COMMON ITEM : CONSULT-III Function (BCM - COMMON ITEM)".

CONSULT display	Fail-safe	Freeze Frame Data	Intelligent Key warning lamp ON	Reference page
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	—	—	—	BCS-33
U1010: CONTROL UNIT (CAN)	—	—	—	BCS-34
U0415: VEHICLE SPEED SIG	—	—	—	BCS-35
B2013: ID DISCORD BCM-S/L	×	×	—	SEC-46
B2014: CHAIN OF S/L-BCM	×	×	—	SEC-47
B2190: NATS ANTENNA AMP	×	—	—	SEC-39
B2191: DIFFERENCE OF KEY	×	—	—	SEC-42

CONSULT display	Fail-safe	Freeze Frame Data	Intelligent Key warning lamp ON	Reference page
B2192: ID DISCORD BCM-ECM	×	—	—	SEC-43
B2193: CHAIN OF BCM-ECM	×	—	—	SEC-45
B2553: IGNITION RELAY	—	×	—	PCS-49
B2555: STOP LAMP	—	×	—	SEC-50
B2556: PUSH-BTN IGN SW	—	×	×	SEC-52
B2557: VEHICLE SPEED	×	×	×	SEC-54
B2560: STARTER CONT RELAY	×	×	×	SEC-55
B2562: LOW VOLTAGE	—	×	—	BCS-36
B2601: SHIFT POSITION	×	×	×	SEC-56
B2602: SHIFT POSITION	×	×	×	SEC-59
B2603: SHIFT POSI STATUS	×	×	×	SEC-61
B2604: PNP SW	×	×	×	SEC-64
B2605: PNP SW	×	×	×	SEC-67
B2606: S/L RELAY	×	×	×	SEC-69
B2607: S/L RELAY	×	×	×	SEC-70
B2608: STARTER RELAY	×	×	×	SEC-72
B2609: S/L STATUS	×	×	×	SEC-74
B260A: IGNITION RELAY	×	×	×	PCS-51
B260B: STEERING LOCK UNIT	—	×	×	SEC-78
B260C: STEERING LOCK UNIT	—	×	×	SEC-79
B260D: STEERING LOCK UNIT	—	×	×	SEC-80
B260F: ENG STATE SIG LOST	×	×	×	SEC-81
B2612: S/L STATUS	×	×	×	SEC-85
B2614: ACC RELAY CIRC	—	×	×	PCS-53
B2615: BLOWER RELAY CIRC	—	×	×	PCS-55
B2616: IGN RELAY CIRC	—	×	×	PCS-57
B2617: STARTER RELAY CIRC	×	×	×	SEC-89
B2618: BCM	×	×	×	PCS-59
B2619: BCM	×	×	×	SEC-91
B261A: PUSH-BTN IGN SW	—	×	×	SEC-92
B261E: VEHICLE TYPE	×	×	× (Turn ON for 15 seconds)	SEC-95
B2621: INSIDE ANTENNA	—	×	—	DLK-50
B2622: INSIDE ANTENNA	—	×	—	DLK-52
B2623: INSIDE ANTENNA	—	×	—	DLK-54
B26E1: ENG STATE NO RES	×	×	×	SEC-82
B26E9: S/L STATUS	×	×	× (Turn ON for 15 seconds)	SEC-83
B26EA: KEY REGISTRATION	—	×	× (Turn ON for 15 seconds)	SEC-84

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

Reference Value

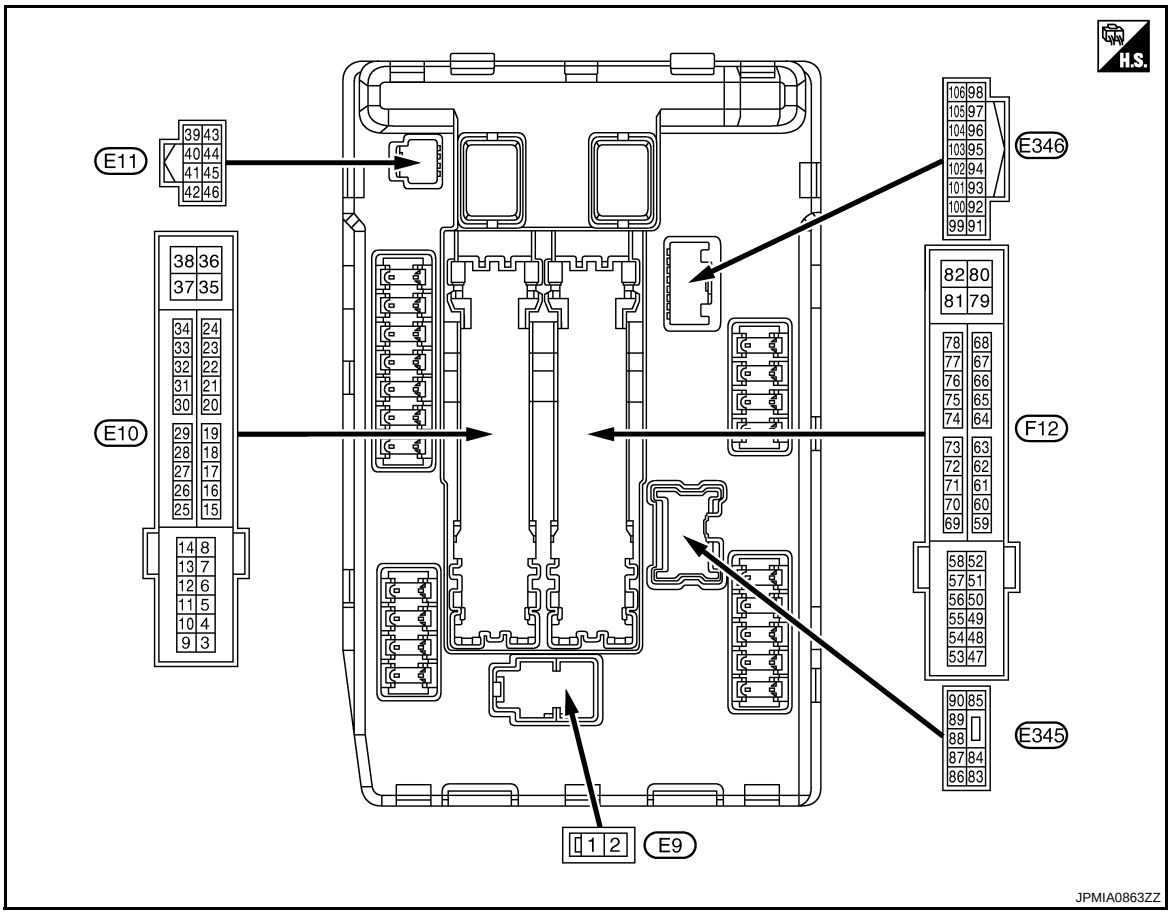
INFOID:0000000003894273

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition		Value/Status
MOTOR FAN REQ	Engine idle speed	Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc.	1/2/3/4
AC COMP REQ	Engine running	A/C switch OFF	Off
		A/C switch ON (Compressor is operating)	On
TAIL&CLR REQ	Lighting switch OFF		Off
	Lighting switch 1ST, 2ND, HI or AUTO (Light is illuminated)		On
HL LO REQ	Lighting switch OFF		Off
	Lighting switch 2ND HI or AUTO (Light is illuminated)		On
HL HI REQ	Lighting switch OFF		Off
	Lighting switch HI		On
FR FOG REQ	Lighting switch 2ND or AUTO (Light is illuminated)	Front fog lamp switch OFF	Off
		Front fog lamp switch ON	On
FR WIP REQ	Ignition switch ON	Front wiper switch OFF	Stop
		Front wiper switch INT	1LOW
		Front wiper switch LO	Low
		Front wiper switch HI	Hi
WIP AUTO STOP	Ignition switch ON	Front wiper stop position	STOP P
		Any position other than front wiper stop position	ACT P
WIP PROT	Ignition switch ON	Front wiper operates normally	Off
		Front wiper stops at fail-safe operation	BLOCK
IGN RLY1 -REQ	Ignition switch OFF or ACC		Off
	Ignition switch ON		On
IGN RLY	Ignition switch OFF or ACC		Off
	Ignition switch ON		On
PUSH SW	Release the push-button ignition switch		Off
	Press the push-button ignition switch		On
INTER/NP SW	Ignition switch ON	Selector lever in any position other than P or N	Off
		Selector lever in P or N position	On
ST RLY CONT	Ignition switch ON		Off
	At engine cranking		On
IHBT RLY -REQ	Ignition switch ON		Off
	At engine cranking		On

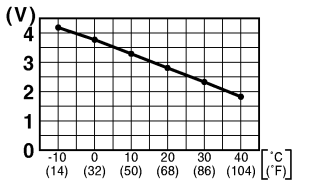
Monitor Item	Condition		Value/Status
ST/INHI RLY	Ignition switch ON		Off
	At engine cranking		INHI → ST
	The status of starter relay or starter control relay cannot be recognized by the battery voltage malfunction, etc. when the starter relay is ON and the starter control relay is OFF		UNKWN
DETENT SW	Ignition switch ON	• Press the selector button with selector lever in P position • Selector lever in any position other than P	Off
	Release the selector button with selector lever in P position		On
S/L RLY -REQ	None of the conditions below are present		Off
	• Open the driver door after the ignition switch is turned OFF (for a few seconds) • Press the push-button ignition switch when the steering lock is activated		On
S/L STATE	Steering lock is activated		LOCK
	Steering lock is deactivated		UNLOCK
	[DTC: B210A] is detected		UNKWN
DTRL REQ	**NOTE:** The item is indicated, but not monitored.		Off
OIL P SW	Ignition switch OFF, ACC or engine running		Open
	Ignition switch ON		Close
HOOD SW	Close the hood		Off
	Open the hood		On
HL WASHER REQ	Not operating		Off
	Headlamp washer operating		On
THFT HRN REQ	Not operating		Off
	Horn is activated with vehicle security (theft warning) system		On
HORN CHIRP	Not operating		Off
	• Door locking with Intelligent Key (horn chirp mode) • Door locking with key fob (horn chirp mode)		On
CRNRNG LMP REQ	**NOTE:** The item is indicated, but not monitored.		Off

TERMINAL LAYOUT



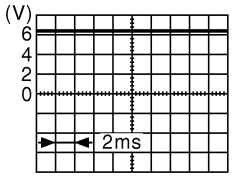
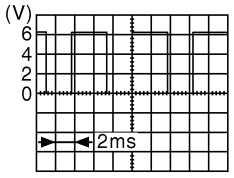
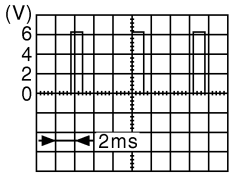
PHYSICAL VALUES

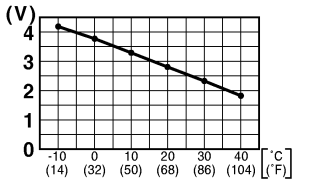
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
1 (R)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
2 (L)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
4 (LG)	Ground	Front wiper LO	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch LO	Battery voltage
5 (Y)	Ground	Front wiper HI	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch HI	Battery voltage
7 (GR)	Ground	Tail, license plate lamps & illuminations	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 1ST	Battery voltage
10 (BR)	Ground	ECM relay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		0 V
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning ignition switch OFF)		Battery voltage

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
11 (P)	Ground	Steering lock unit power supply	Output	Ignition switch OFF	A few seconds after opening the driver door	Battery voltage
				Ignition switch LOCK	Press the push-button ignition switch	Battery voltage
				Ignition switch ACC or ON		0 V
12 (B/W)	Ground	Ground	—	Ignition switch ON		0 V
13 (SB)	Ground	Fuel pump power supply	Output	Approximately 1 second or more after turning the ignition switch ON		0 V
				• Approximately 1 second after turning the ignition switch ON • Engine running		Battery voltage
15 (W)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
16 (R)	Ground	Front wiper auto stop	Input	Ignition switch ON	Front wiper stop position	0 V
					Any position other than front wiper stop position	Battery voltage
17 (V)	Ground	Headlamp washer relay control	Input	Ignition switch ON	Headlamp washer deactivated	Battery voltage
					Headlamp washer activated	0 V
19 (Y)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
20 (B)	Ground	Ambient sensor ground	Output	Ignition switch ON		0 V
21 (O)	Ground	Ambient sensor	Input	Ignition switch ON **NOTE:** Changes depending to ambient temperature		 JSNIA0014GB
22 (SB)	Ground	Refrigerant pressure sensor ground	Output	Engine running	• Warm-up condition • Idle speed	0 V
23 (GR)	Ground	Refrigerant pressure sensor	Output	Engine running	• Warm-up condition • Both A/C switch and blower fan motor switch ON (Compressor operates)	1.0 - 4.0 V
24 (G)	Ground	Refrigerant pressure sensor power supply	Input	Ignition switch OFF		0 V
				Ignition switch ON		5.0 V
25 (GR)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
27 (W)	Ground	Ignition relay monitor	Input	Ignition switch OFF or ACC		Battery voltage
				Ignition switch ON		0 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
28 (SB)	Ground	Push-button ignition switch	Input	Press the push-button ignition switch		0 V
				Release the push-button ignition switch		Battery voltage
30 (BR)	Ground	Starter relay control	Input	Ignition switch ON	Selector lever in any position other than P or N	0 V
					Selector lever P or N	Battery voltage
32 (V)	Ground	Steering lock unit condition-1	Input	Steering lock is activated		0 V
				Steering lock is deactivated		Battery voltage
33 (G)	Ground	Steering lock unit condition-2	Input	Steering lock is activated		Battery voltage
				Steering lock is deactivated		0 V
34 (O)	Ground	Cooling fan relay-3 control	Input	Cooling fan stopped		Battery voltage
				Cooling fan at HI operation		0 V
35 (P)	Ground	Cooling fan relay-1 power supply	Input	Cooling fan stopped		Battery voltage
				Cooling fan at LO operation		6.0 V
36 (G)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
38 (GR)	Ground	Cooling fan relay-1 power supply	Output	Cooling fan not operating		0 V
				Cooling fan at LO operation		6.0 V
39 (P)	—	CAN-L	Input/ Output	—		—
40 (L)	—	CAN-H	Input/ Output	—		—
41 (B)	Ground	Ground	—	Ignition switch ON		0 V
42 (SB)	Ground	Cooling fan relay-2 control	Input	Cooling fan stopped		Battery voltage
				• Cooling fan MID operating • Cooling fan HI operating		0 V
43 (Y)	Ground	Control device (Detention switch)	Input	Ignition switch ON	Press the selector button (selector lever P)	Battery voltage
					• Selector lever in any position other than P • Release the selector button (selector lever P)	0 V
44 (G)	Ground	Horn relay control	Input	The horn is deactivated		Battery voltage
				The horn is activated		0 V
45 (O)	Ground	Horn switch	Input	The horn is deactivated		Battery voltage
				The horn is activated		0 V
46 (BR)	Ground	Starter relay control	Input	Ignition switch ON	Selector lever in any position other than P or N	0 V
					Selector lever P or N	Battery voltage
48 (Y/R)	Ground	A/C relay power supply	Output	Engine running	A/C switch OFF	0 V
					A/C switch ON (A/C compressor is operating)	Battery voltage

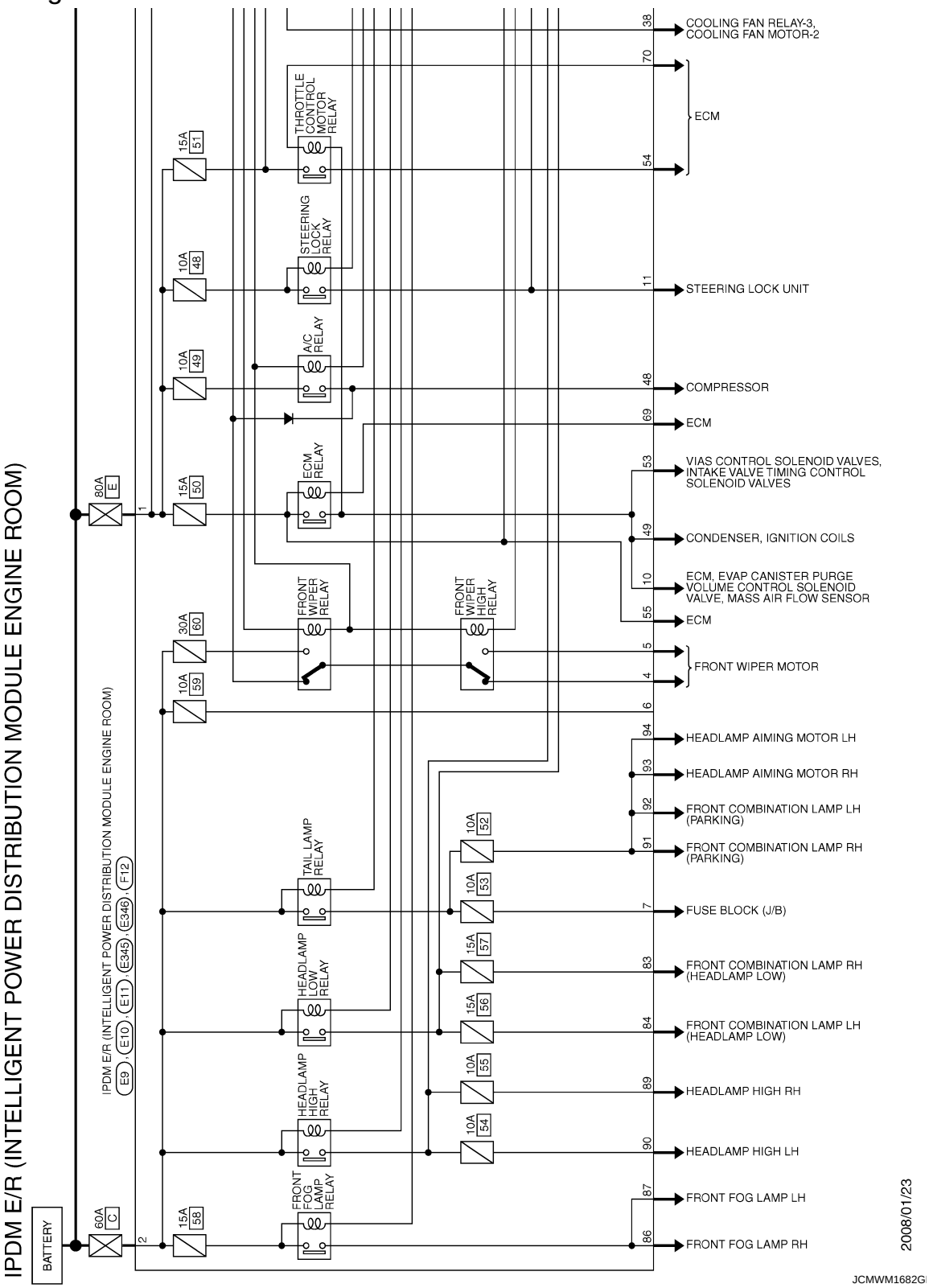
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
49 (R/B)	Ground	ECM relay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		0 V
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning ignition switch OFF)		Battery voltage
51 (LG)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
52 (Y/G)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
53 (R/W)	Ground	ECM relay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		0 V
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning ignition switch OFF)		Battery voltage
54 (G/W)	Ground	Throttle control motor relay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		0 V
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning ignition switch OFF)		Battery voltage
55 (W/L)	Ground	ECM power supply	Output	Ignition switch OFF		Battery voltage
56 (R/Y)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
57 (O)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
58 (Y)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
69 (W/B)	Ground	ECM relay control	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		Battery voltage
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning ignition switch OFF)		0 - 1.5 V
70 (O)	Ground	Throttle control motor relay control	Output	Ignition switch ON → OFF		0 -1.0 V ↓ Battery voltage ↓ 0 V
				Ignition switch ON		0 - 1.0 V
72 (R/B)	Ground	Starter relay control	Input	Ignition switch ON	Selector lever in any position other than P or N	0 V
					Selector lever P or N	Battery voltage
74 (Y)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage

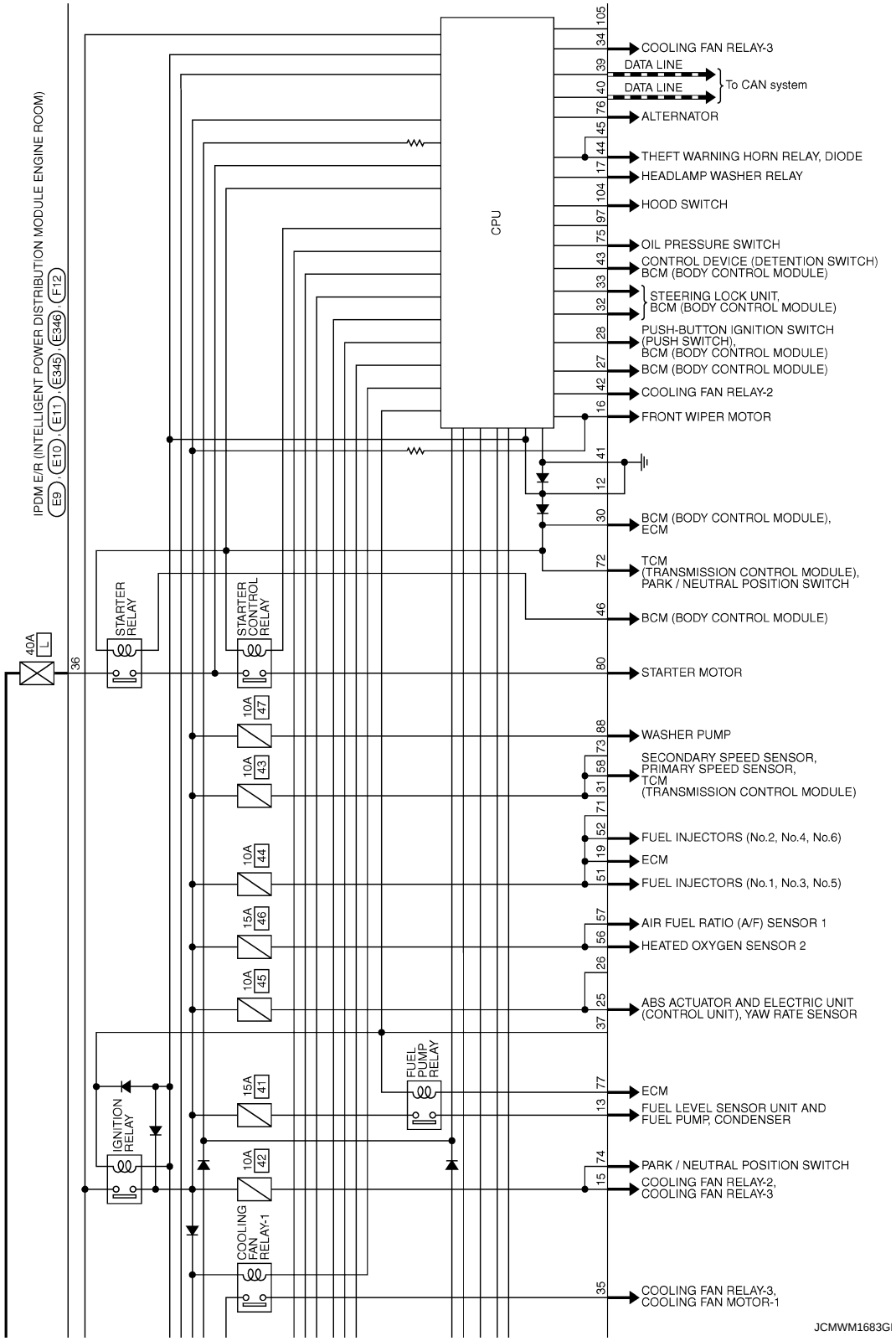
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
75 (P/L)	Ground	Oil pressure switch	Input	Ignition switch ON	Engine stopped	0 V
					Engine running	Battery voltage
76 (SB)	Ground	Power generation command signal	Output	Ignition switch ON		 JPMIA0001GB 6.3 V
				40% is set on “ACTIVE TEST”, “ALTERNATOR DUTY” of “ENGINE”		 JPMIA0002GB 3.8 V
				80% is set on “ACTIVE TEST”, “ALTERNATOR DUTY” of “ENGINE”		 JPMIA0003GB 1.4 V
77 (GR)	Ground	Fuel pump relay control	Output	• Approximately 1 second after turning the ignition switch ON • Engine running		0 - 1.5 V
				Approximately 1 second or more after turning the ignition switch ON		Battery voltage
80 (B/W)	Ground	Starter motor	Output	At engine cranking		Battery voltage
83 (Y)	Ground	Headlamp LO (RH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 2ND	Battery voltage
84 (SB)	Ground	Headlamp LO (LH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 2ND	Battery voltage
86 (L)	Ground	Front fog lamp (RH)	Output	Lighting switch 2ND	• Front fog lamp switch ON • Daytime running light activated (Only for Canada)	Battery voltage
					Front fog lamp switch OFF	0 V
87 (R)	Ground	Front fog lamp (LH)	Output	Lighting switch 2ND	• Front fog lamp switch ON • Daytime running light activated (Only for Canada)	Battery voltage
					Front fog lamp switch OFF	0 V

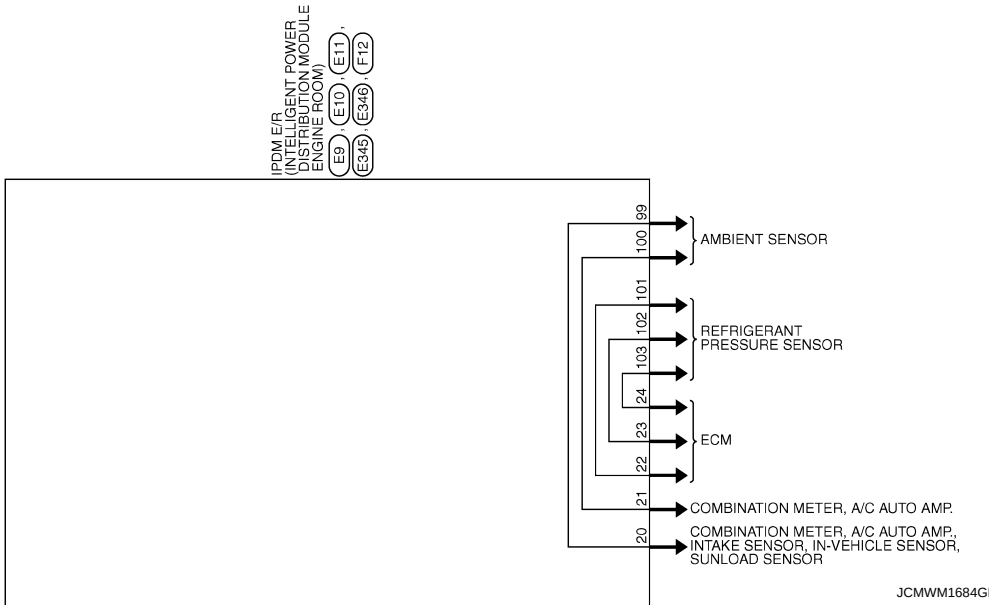
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
88 (P)	Ground	Washer pump power supply	Output	Ignition switch ON		Battery voltage
89 (W)	Ground	Headlamp HI (RH)	Output	Ignition switch ON	• Lighting switch HI • Lighting switch PASS	Battery voltage
					Lighting switch OFF	0 V
90 (O)	Ground	Headlamp HI (LH)	Output	Ignition switch ON	• Lighting switch HI • Lighting switch PASS	Battery voltage
					Lighting switch OFF	0 V
91 (O)	Ground	Parking lamp (RH)	Output	Ignition switch ON	Lighting switch 1ST	Battery voltage
					Lighting switch OFF	0 V
92 (L)	Ground	Parking lamp (LH)	Output	Ignition switch ON	Lighting switch 1ST	Battery voltage
					Lighting switch OFF	0 V
93 (BR)	Ground	Headlamp aiming motor (RH)	Output	Ignition switch ON	Lighting switch 1ST	Battery voltage
					Lighting switch OFF	0 V
94 (Y)	Ground	Headlamp aiming motor (LH)	Output	Ignition switch ON	Lighting switch 1ST	Battery voltage
					Lighting switch OFF	0 V
99 (W)	Ground	Ambient sensor ground	Input	Ignition switch ON		0 V
100 (SB)	Ground	Ambient sensor	Output	Ignition switch ON **NOTE:** Changes depending to ambient temperature		 JSNIA0014GB
101 (GR)	Ground	Refrigerant pressure sensor ground	Input	Engine running	• Warm-up condition • Idle speed	0 V
102 (R)	Ground	Refrigerant pressure sensor	Input	Engine running	• Warm-up condition • Both A/C switch and blower fan motor switch ON (Compressor operates)	1.0 - 4.0 V
103 (P)	Ground	Refrigerant pressure sensor power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		5.0 V
104 (LG)	Ground	Hood switch	Output	Close the hood		Battery voltage
				Open the hood		0 V

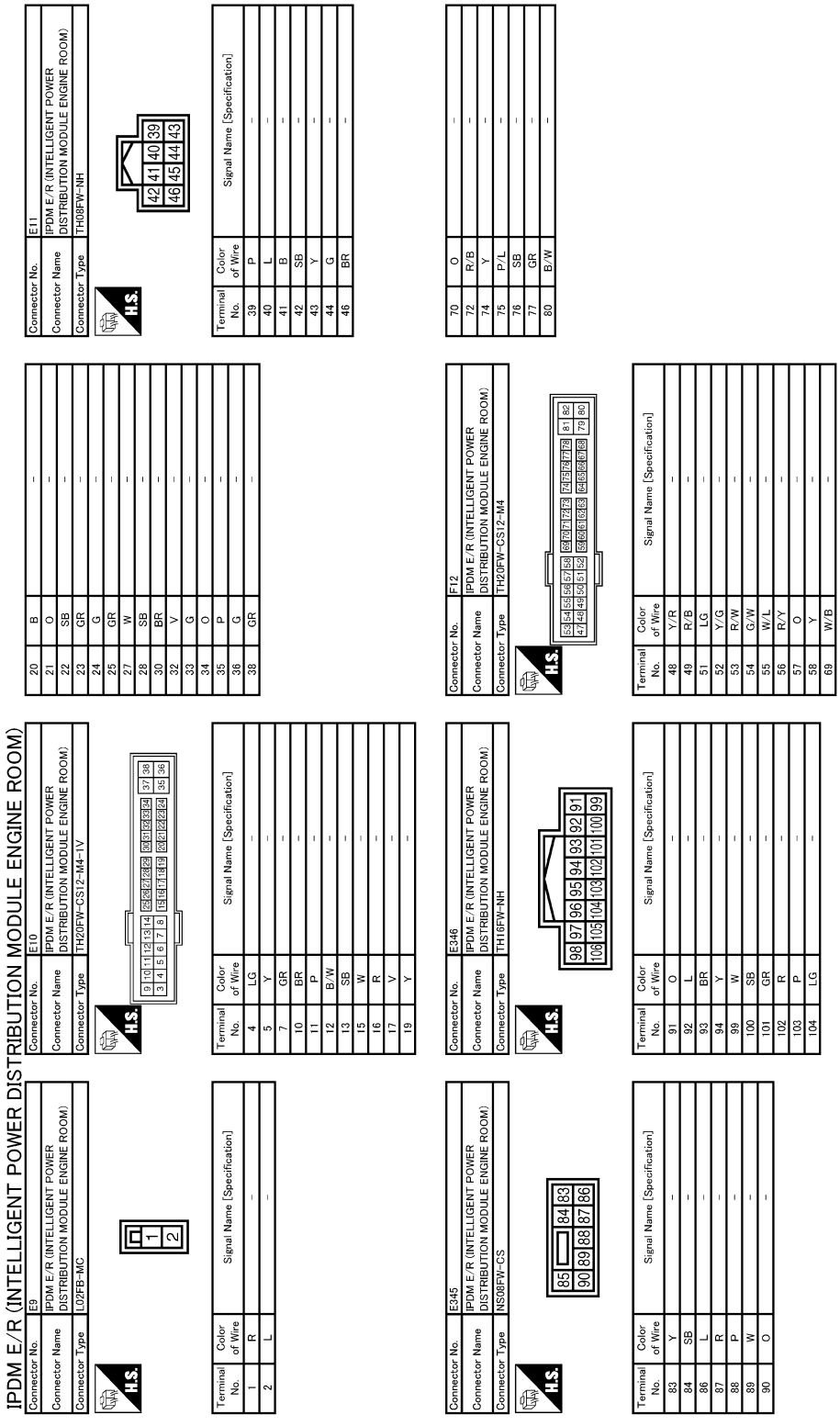
Wiring Diagram - IPDM E/R -

INFOID:0000000003894274




IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E9, E10, E11, E345, E346, F12
CPU
105
34
COOLING FAN RELAY-3
39
DATA LINE
40
DATA LINE
To CAN system
76
ALTERNATOR
45
44
THEFT WARNING HORN RELAY, DIODE
17
HEADLAMP WASHER RELAY
104
HOOD SWITCH
97
75
OIL PRESSURE SWITCH
43
CONTROL DEVICE (DETENTION SWITCH)
BCM (BODY CONTROL MODULE)
33
32
STEERING LOCK UNIT,
BCM (BODY CONTROL MODULE)
28
PUSH-BUTTON IGNITION SWITCH
(PUSH SWITCH),
BCM (BODY CONTROL MODULE)
27
BCM (BODY CONTROL MODULE)
42
COOLING FAN RELAY-2
16
FRONT WIPER MOTOR
41
12
30
BCM (BODY CONTROL MODULE),
ECM
72
TCM
(TRANSMISSION CONTROL MODULE),
PARK / NEUTRAL POSITION SWITCH
46
BCM (BODY CONTROL MODULE)
40A
L
36
STARTER RELAY
STARTER CONTROL RELAY
80
STARTER MOTOR
10A 47
88
WASHER PUMP
10A 43
73
58
31
71
SECONDARY SPEED SENSOR,
PRIMARY SPEED SENSOR,
TCM
(TRANSMISSION CONTROL MODULE)
52
FUEL INJECTORS (No.2, No.4, No.6)
19
ECM
10A 44
51
FUEL INJECTORS (No.1, No.3, No.5)
15A 46
57
AIR FUEL RATIO (A/F) SENSOR 1
56
HEATED OXYGEN SENSOR 2
26
10A 45
25
ABS ACTUATOR AND ELECTRIC UNIT
(CONTROL UNIT), YAW RATE SENSOR
37
FUEL PUMP RELAY
15A 41
77
ECM
13
FUEL LEVEL SENSOR UNIT AND
FUEL PUMP, CONDENSER
IGNITION RELAY
10A 42
74
PARK / NEUTRAL POSITION SWITCH
15
COOLING FAN RELAY-2,
COOLING FAN RELAY-3
COOLING FAN RELAY-1
35
COOLING FAN RELAY-3,
COOLING FAN MOTOR-1
JCMWM1683GI


IPDM E/R
(INTELLIGENT POWER
DISTRIBUTION MODULE
ENGINE ROOM)
E9
E10
E11
E345
E346
F12
99
100
AMBIENT SENSOR
101
102
103
REFRIGERANT
PRESSURE SENSOR
24
23
22
ECM
21
COMBINATION METER, A/C AUTO AMP.
20
COMBINATION METER, A/C AUTO AMP.,
INTAKE SENSOR, IN-VEHICLE SENSOR,
SUNLOAD SENSOR
JCMWM1684G



JCMWM1685GI

Fail-safe

INFOID:0000000003894275

CAN COMMUNICATION CONTROL

When CAN communication with ECM and BCM is impossible, IPDM E/R performs fail-safe control. After CAN communication recovers normally, it also returns to normal control.

If No CAN Communication Is Available With ECM

Control part	Fail-safe operation
Cooling fan	• Turns ON the cooling fan relay-2 and the cooling fan relay-3 when ignition switch is turned ON (Cooling fan operates at HI) • Turns OFF the cooling fan relay-1, the cooling fan relay-2 and the cooling fan relay-3 when the ignition switch is turned OFF (Cooling fan does not operate)
A/C compressor	A/C relay OFF
Alternator	Outputs the power generation command signal (PWM signal) 0%

If No CAN Communication Is Available With BCM

Control part	Fail-safe operation
Headlamp	• Turns ON the headlamp low relay when the ignition switch is turned ON • Turns OFF the headlamp low relay when the ignition switch is turned OFF • Headlamp high relay OFF
• Parking lamps • License plate lamps • Illuminations • Tail lamps	• Turns ON the tail lamp relay when the ignition switch is turned ON • Turns OFF the tail lamp relay when the ignition switch is turned OFF
Front wiper	• The status just before activation of fail-safe control is maintained until the ignition switch is turned OFF while the front wiper is operating at LO or HI speed. • The wiper is operated at LO speed until the ignition switch is turned OFF if the fail-safe control is activated while the front wiper is set in the INT mode and the front wiper motor is operating.
Front fog lamps	Front fog lamp relay OFF
Horn	Horn OFF
Ignition relay	The status just before activation of fail-safe is maintained.
Starter motor	Starter control relay OFF
Steering lock unit	Steering lock relay OFF
Headlamp washer relay	Headlamp washer relay OFF

IGNITION RELAY MALFUNCTION DETECTION FUNCTION

- IPDM E/R monitors the voltage at the contact circuit and excitation coil circuit of the ignition relay inside it.
- IPDM E/R judges the ignition relay error if the voltage differs between the contact circuit and the excitation coil circuit.
- If the ignition relay cannot turn OFF due to contact seizure, it activates the tail lamp relay for 10 minutes to alert the user to the ignition relay malfunction when the ignition switch is turned OFF.

Voltage judgment		IPDM E/R judgment	Operation
Ignition relay contact side	Ignition relay excitation coil side		
ON	ON	Ignition relay ON normal	—
OFF	OFF	Ignition relay OFF normal	—
ON	OFF	Ignition relay ON stuck	• Detects DTC “B2098: IGN RELAY ON” • Turns ON the tail lamp relay for 10 minutes
OFF	ON	Ignition relay OFF stuck	Detects DTC “B2099: IGN RELAY OFF”

FRONT WIPER CONTROL

IPDM E/R detects front wiper stop position by a front wiper auto stop signal.
When a front wiper auto stop signal is in the conditions listed below, IPDM E/R stops power supply to wiper after repeating a front wiper 10 seconds activation and 20 seconds stop five times.

Ignition switch	Front wiper switch	Front wiper auto stop signal
ON	OFF	The front wiper auto stop signal (stop position) cannot be input for 10 seconds.
	ON	The front wiper auto stop signal does not change for 10 seconds.

NOTE:
This operation status can be confirmed on the IPDM E/R “Data Monitor” that displays “BLOCK” for the item “WIP PROT” while the wiper is stopped.

STARTER MOTOR PROTECTION FUNCTION

IPDM E/R turns OFF the starter control relay to protect the starter motor when the starter control relay remains active for 90 seconds.

DTC Index

INFOID:0000000003894276

NOTE:
- The details of time display are as follows.
- CRNT: A malfunction is detected now
- PAST: A malfunction was detected in the past.
- IGN counter is displayed on FFD (Freeze Frame data).
- The number is 0 when is detected now
- The number increases like 1 → 2 ··· 38 → 39 after returning to the normal condition whenever IGN OFF → ON.
- The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.

×: Applicable

CONSULT display	Fail-safe	Refer to
No DTC is detected. further testing may be required.	—	—
U1000: CAN COMM CIRCUIT	×	PCS-16
B2098: IGN RELAY ON	×	PCS-17
B2099: IGN RELAY OFF	—	PCS-18
B2108: STRG LCK RELAY ON	—	SEC-96
B2109: STRG LCK RELAY OFF	—	SEC-97
B210A: STRG LCK STATE SW	—	SEC-98
B210B: START CONT RLY ON	—	SEC-102
B210C: START CONT RLY OFF	—	SEC-103
B210D: STARTER RELAY ON	—	SEC-104
B210E: STARTER RELAY OFF	—	SEC-105
B210F: INTRLCK/PNP SW ON	—	SEC-107
B2110: INTRLCK/PNP SW OFF	—	SEC-109

AUTO LEVELIZER CONTROL UNIT

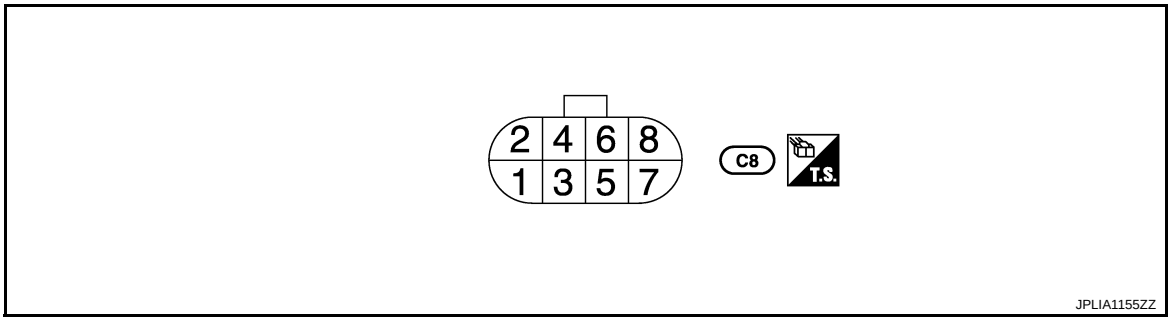
Reference Value

INFOID:0000000003805622

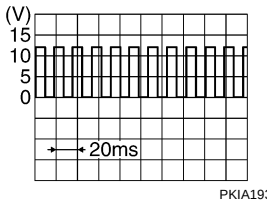
VALUES ON THE DIAGNOSIS TOOL

Monitor item	Operating condition		Display item (Approx.)
INT SEN VALUE	Rear vehicle height	Detection upper limit	100 %
		Detection lower limit	0 %
ACT OUTPUT	Headlamp light axis	Control upper limit	69.8 %
		Control lower limit	14.5 %
ACT MEASURED	Headlamp light axis	Detection upper limit	69.8 %
		Detection lower limit	14.5 %
SPEED SIG	Vehicle running at approx. 40 km/h (25 MPH)		40 km/h (25 MPH)
LIGHT SIGNAL	Tail lamp	ON	Battery voltage
		OFF	2 V or less
INT SEN VOLT	Ignition switch	ON	Battery voltage
		Other than ON	0 V
EXT SEN VOLT	—		—
EXT SEN SIG	—		—

TERMINAL LAYOUT



PHYSICAL VALUES

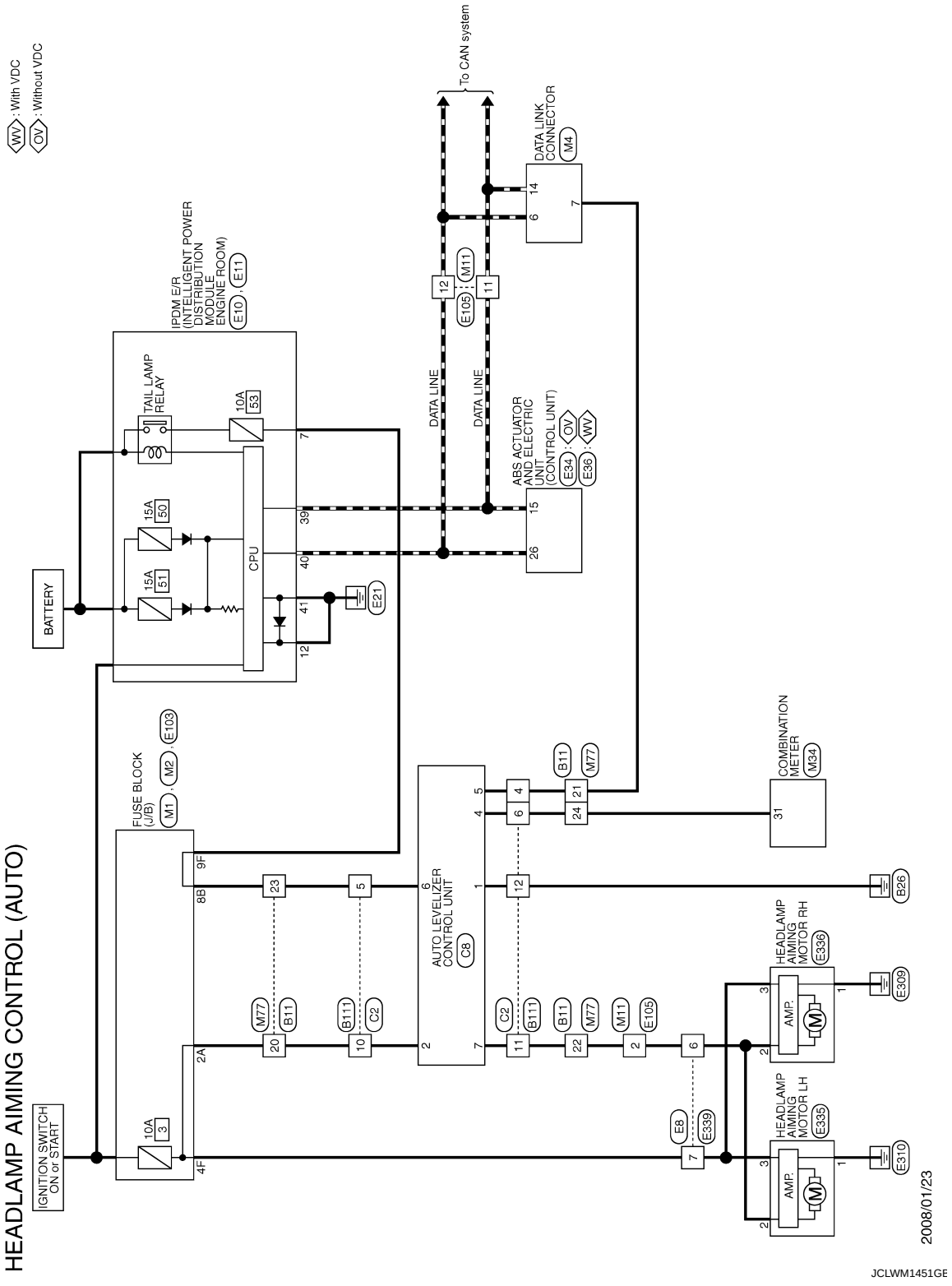
Terminal No. (Wire color)		Description		Operating condition		Standard (Approx.)
+	-	Signal name	Input/ Output			
1 (B)	Ground	Ground	—	—		0 V
2 (G)	Ground	Ignition power supply	Input	Ignition switch	ON	Battery voltage
					OFF	0 V
4 (P/W)	Ground	Vehicle speed signal (8-pulse)	Input	Vehicle running at approx. 40 km/h (25 MPH)		

Terminal No. (Wire color)		Description		Operating condition		Standard (Approx.)
+	-	Signal name	Input/ Output			
5 (O)	Ground	K-LINE	—	—		—
6 (R/L)	Ground	Tail lamp signal	Input	Tail lamp	ON	Battery voltage
					OFF	2 V or less*
7 (G/Y)	Ground	Headlamp aiming motor drive signal	Output	Headlamp aiming	Under unladen conditions	8.7 V
					At aiming operation lower limit	1.8 V

*: Auto levelizer control unit always outputs the voltage to detect the DTC.

Wiring Diagram — HEADLAMP AIMING CONTROL SYSTEM —

INFOID:0000000003805623



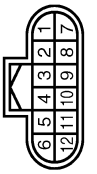
HEADLAMP AIMING CONTROL (AUTO)

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS19



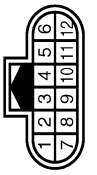
Terminal No.	Color of Wire	Signal Name [Specification]
20	G	–
21	GR	–
22	Y	–
23	B	–
24	W	–

Connector No.	B111
Connector Name	WIRE TO WIRE
Connector Type	RH12FB



Terminal No.	Color of Wire	Signal Name [Specification]
4	GR	–
5	B	–
6	W	–
10	G	–
11	Y	–
12	B	–

Connector No.	C2
Connector Name	WIRE TO WIRE
Connector Type	RH12MB



Terminal No.	Color of Wire	Signal Name [Specification]
4	O	–
5	R/L	–
6	P/W	–
10	G	–
11	G/Y	–
12	B	–

Connector No.	C8
Connector Name	AUTO LEVELIZER CONTROL UNIT
Connector Type	AEX08FB



Terminal No.	Color of Wire	Signal Name [Specification]
1	B	–
2	G	–
4	P/W	–
5	O	–
6	R/L	–
7	G/Y	–

Connector No.	E8
Connector Name	WIRE TO WIRE
Connector Type	NS12MBR-CS

Terminal No.	Color of Wire	Signal Name [Specification]
6	SB	–
7	LG	–

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH20FW-CS12-M4-1V

Terminal No.	Color of Wire	Signal Name [Specification]
7	GR	–
12	B/W	–

Connector No.	E11
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH08FW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
39	P	–
40	L	–
41	B	–

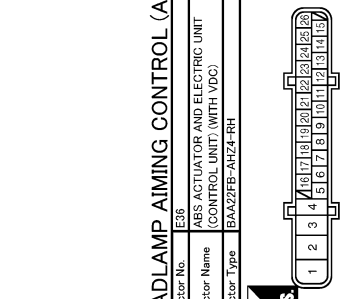
Connector No.	E34
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) (WITHOUT VDC)
Connector Type	BAA22FB-AH24-RH

Terminal No.	Color of Wire	Signal Name [Specification]
15	P	CAN(–)
26	L	CAN(+)

JCLWM1452GE

HEADLAMP AIMING CONTROL (AUTO)

Connector No.	E36
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) (WITH VDC)
Connector Type	BAA22FB-AH24-RH



Terminal No.	Color of Wire	Signal Name [Specification]
15	P	CAN-L(YRS)
26	L	CAN-H(YRS)

Connector No.	E103
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
4F	BR	–
9F	GR	–

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH70MW-CS10-M3



Terminal No.	Color of Wire	Signal Name [Specification]
2	SB	–
11	P	–
12	L	–

Connector No.	E335
Connector Name	HEADLAMP AIMING MOTOR LH
Connector Type	HS03FGY



Terminal No.	Color of Wire	Signal Name [Specification]
1	B	–
2	V	–
3	BR	–[With headlamp auto aiming]

Connector No.	E336
Connector Name	HEADLAMP AIMING MOTOR RH
Connector Type	HS03FGY

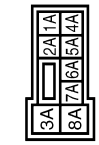
Terminal No.	Color of Wire	Signal Name [Specification]
1	B	–
2	V	–
3	BR	–

Connector No.	E339
Connector Name	WIRE TO WIRE
Connector Type	NS12FBR-CS



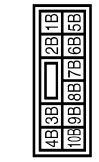
Terminal No.	Color of Wire	Signal Name [Specification]
6	V	–
7	BR	–

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS06FW-M2



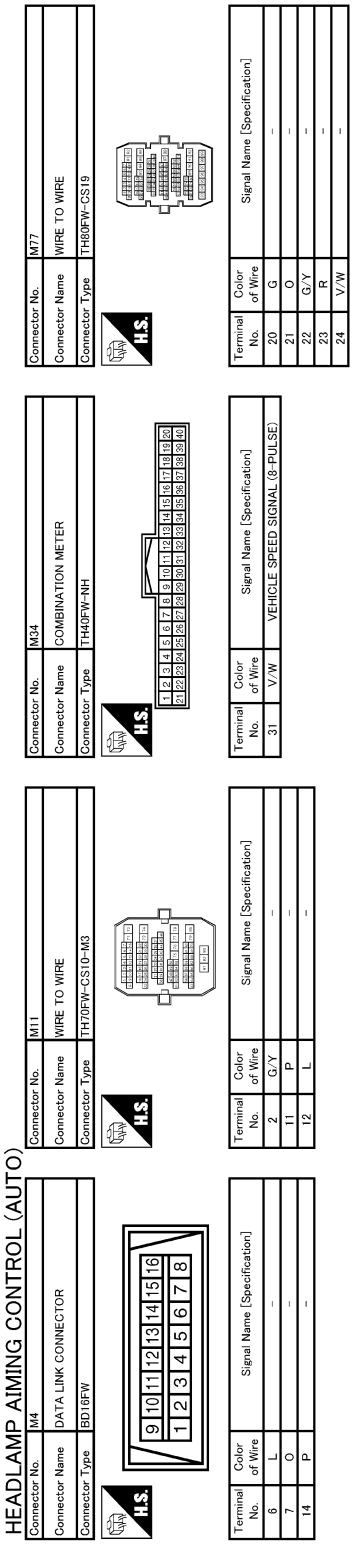
Terminal No.	Color of Wire	Signal Name [Specification]
2A	G/O	–

Connector No.	M2
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS10FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
8B	R/W	–

JCLWM1453GE



JCLWM1454GE

Fail-safe

INFOID:0000000003805624

DTC	Fail-safe	Cancellation
B2080: ECU TROUBLE	Fix aiming motor drive signal to approximately 0 V	Ignition switch OFF
B2081: INITIAL NOT DONE	Fix with the light axis facing downward	When sensor initialization is completed

DTC	Fail-safe		Cancellation
B2082: SENSOR OUT OF RANGE	After engine start [Less than 5 seconds after ignition switch ON and vehicle speed less than 4 km/h (2.5 MPH)]	Fix with the light axis facing downward	When sensor signal returns to normal range
	While driving [5 seconds or more after ignition switch ON or vehicle speed 4 km/h (2.5 MPH) or more]	Maintain the light axis at the time of DTC detection	
B2083: SEN SIG NOT PLAUSIBLE	• Maintain the aiming motor drive signal output at the time of DTC detection • Maintain the light axis at the time of DTC detection		Ignition switch OFF
B2084: VOLTAGE UNDER LIMIT	After engine start [Less than 5 seconds after ignition switch ON and vehicle speed less than 4 km/h (2.5 MPH)]	Fix with the light axis facing downward	Ignition switch OFF
	While driving [5 seconds or more after ignition switch ON or vehicle speed 4 km/h (2.5 MPH) or more]	Maintain the light axis at the time of DTC detection	
B2085: LOWBEAM SIG OPEN LINE	After engine start [Less than 5 seconds after ignition switch ON and vehicle speed less than 4 km/h (2.5 MPH)]	Fix with the light axis facing downward	Ignition switch OFF
	While driving [5 seconds or more after ignition switch ON or vehicle speed 4 km/h (2.5 MPH) or more]	Maintain the light axis at the time of DTC detection	
B2086: FRQ. OVER LIMIT	After engine start [Less than 5 seconds after ignition switch ON and vehicle speed less than 4 km/h (2.5 MPH)]	Fix with the light axis facing downward	Ignition switch OFF
	While driving [5 seconds or more after ignition switch ON or vehicle speed 4 km/h (2.5 MPH) or more]	Maintain the light axis at the time of DTC detection	
B2087: SHORT TO GROUND	Maintain the light axis at the time of DTC detection		Ignition switch OFF
B2088: SHORT TO BATTERY	Maintain the light axis at the time of DTC detection		Ignition switch OFF
B208A: PARA NOT PROG	Fix aiming motor drive signal output to approximately 0 V		Write configuration is completed

DTC Inspection Priority Chart

INFOID:0000000003805625

If some DTCs are displayed at the same time, perform inspections one by one based on the following priority chart.

Priority	DTC
1	• B2080: ECU TROUBLE • B208A: PARA NOT PROG

Priority	DTC
2	• B2081: INITIAL NOT DONE
3	• B2082: SENSOR OUT OF RANGE • B2083: SEN SIG NOT PLAUSIBLE • B2084: VOLTAGE UNDER LIMIT • B2085: LOWBEAM SIG OPEN LINE • B2086: FRQ. OVER LIMIT • B2087: SHORT TO GROUND • B2088: SHORT TO BATTERY

DTC Index

INFOID:0000000003805626

DTC	Fail-safe	Refer to
B2080: ECU TROUBLE	×	EXL-38, "Description"
B2081: INITIAL NOT DONE	×	EXL-39, "DTC Logic"
B2082: SENSOR OUT OF RANGE	×	EXL-40, "DTC Logic"
B2083: SEN SIG NOT PLAUSIBLE	×	EXL-41, "DTC Logic"
B2084: VOLTAGE UNDER LIMIT	×	EXL-42, "DTC Logic"
B2085: LOWBEAM SIG OPEN LINE	×	EXL-43, "Description"
B2086: FRQ. OVER LIMIT	×	EXL-45, "Description"
B2087: SHORT TO GROUND	×	EXL-47, "DTC Logic"
B2088: SHORT TO BATTERY	×	EXL-48, "DTC Logic"
B208A: PARA NOT PROG	×	EXL-49, "DTC Logic"

SYMPTOM DIAGNOSIS

EXTERIOR LIGHTING SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000003774367

CAUTION:
Perform the self-diagnosis with CONSULT-III before the symptom diagnosis. Perform the trouble diagnosis if any DTC is detected.

Symptom		Possible cause	Inspection item
Headlamp (HI) is not turned ON.	One side	• Fuse • Halogen bulb (HI) • Harness between IPDM E/R and the headlamp high • IPDM E/R	Headlamp (HI) circuit Refer to EXL-54.
	Both sides	**Symptom diagnosis** "BOTH SIDE HEADLAMPS (HI) ARE NOT TURNED ON" Refer to EXL-168.	
Headlamp (HI) is not turned OFF.	When ignition switch is turned ON.		
	When ignition switch is turned OFF.	IPDM E/R	—
High beam indicator lamp is not turned ON. [Headlamp (HI) is turned ON.]		Combination meter	• Combination meter Data monitor "HI-BEAM IND" • BCM (HEAD LAMP) Active test "HEADLAMP"
Headlamp (LO) is not turned ON.	One side	• Fuse • Xenon bulb (LO) • Harness between IPDM E/R and the front combination lamp • IPDM E/R	Headlamp (LO) circuit Refer to EXL-56.
	Both sides	**Symptom diagnosis** "BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON" Refer to EXL-169.	
Headlamp (LO) is not turned OFF.	When ignition switch is turned ON.		
	When ignition switch is turned OFF.	IPDM E/R	—
Each lamps are not turned ON/OFF with lighting switch AUTO.		• Combination switch • Harness between the combination switch and BCM • BCM	Combination switch Refer to BCS-76.
		• Optical sensor • Harness between the optical sensor and BCM • BCM	Optical sensor circuit Refer to EXL-69.
Front fog lamp is not turned ON.	One side	• Front fog lamp bulb • Harness between IPDM E/R and the front fog lamp • Front fog lamp • IPDM E/R	Front fog lamp circuit Refer to EXL-62.
	Both sides	**Symptom diagnosis** "BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON" Refer to EXL-171.	
Front fog lamp is not turned ON.			
Front fog lamp indicator is not turned ON. (Front fog lamp is turned ON.)		Combination meter	• Combination meter Data monitor "FR FOG IND" • BCM (HEAD LAMP) Active test "FR FOG LAMP"

Symptom		Possible cause	Inspection item
Parking lamp is not turned ON.		• Parking lamp bulb • Harness between IPDM E/R and the front combination lamp • Front combination lamp • IPDM E/R	Parking lamp circuit Refer to EXL-64.
Tail lamp is not turned ON.		• Harness between IPDM E/R and the rear combination lamp • Rear combination lamp	Tail lamp circuit Refer to EXL-74.
License plate lamp is not turned ON.		• License plate lamp bulb • Harness between IPDM E/R and the license plate lamp • License plate lamp	License plate lamp circuit Refer to EXL-76.
Tail lamp and the license plate lamp are not turned ON.		• Fuse • Harness between IPDM E/R and the rear combination lamp • IPDM E/R	License plate lamp circuit Refer to EXL-76.
• Parking lamp, the tail lamp and the license plate lamp are not turned ON. • Parking lamp, the tail lamp and the license plate lamp are not turned OFF. (Each illumination is turned ON/OFF.)		**Symptom diagnosis** “PARKING, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON” Refer to EXL-170.	
Tail lamp indicator is not turned ON. (Parking, tail lamps are turned ON.)		Combination meter	• Combination meter Data monitor “LIGHT IND” • BCM (HEAD LAMP) Active test “TAIL LAMP”
Turn signal lamp does not blink.	Indicator lamp is normal. (Applicable side performs the high flasher activation.)	• Harness between BCM and each turn signal lamp • Turn signal lamp bulb	Turn signal circuit Refer to EXL-66.
	Indicator lamp is included.	• Combination switch • Harness between the combination switch and BCM • BCM	Combination switch Refer to BCS-76.
Turn signal indicator lamp does not blink. (Turn signal indicator lamp is normal.)	One side	Combination meter	—
	Both sides (Always)	• Turn signal indicator lamp signal - BCM • Combination meter	• Combination meter Data monitor “TURN IND” • BCM (FLASHER) Active test “FLASHER”
	Both sides (Only when activating hazard warning lamp with the ignition switch OFF)	• Combination meter power supply and the ground circuit • Combination meter	Combination meter Power supply and the ground circuit Refer to MWI-42.
• Hazard warning lamp does not activate. • Hazard warning lamp continues activating. (Turn signal is normal.)		• Hazard switch • Harness between the hazard switch and BCM • BCM	Hazard switch Refer to EXL-72.
Rear fog lamp is not turned ON.	Rear fog lamp indicator lamp is normal.	• Harness between BCM and the rear fog lamp • Rear fog lamp bulb • BCM	Rear fog lamp circuit Refer to EXL-77.
	Rear fog lamp indicator lamp is included.	• Combination switch • Harness between the combination switch and BCM • BCM	Combination switch Refer to BCS-76.

Symptom	Possible cause	Inspection item
Rear fog lamp indicator lamp is not turn ON. (Rear fog lamp turns ON)	• Rear fog lamp status signal - BCM • Combination meter	• Combination meter Data monitor “RR FOG IND” • BCM (HEAD LAMP) Active test “RR FOG LAMP”
Headlamp auto aiming does not activate.	• Harness between the auto levelizer control unit and the aiming motor. • Front combination lamp (Aiming motor) • Auto levelizer control unit	Headlamp levelizer circuit Refer to EXL-60.

NORMAL OPERATING CONDITION

Description

INFOID:0000000003774368

XENON HEADLAMP

- Brightness and the color of light may change slightly immediately after turning the headlamp ON until the xenon bulb becomes stable. This is normal.
- Illumination time lag may occur between right and left. This is normal.

AUTO LIGHT SYSTEM

The headlamp may not be turned ON/OFF immediately after passing dark area or bright area (short tunnel, sky bridge, shadowed area etc.) while using the auto light system. This causes for the control difference. This is normal.

BOTH SIDE HEADLAMPS (HI) ARE NOT TURNED ON

Description

INFOID:0000000003774369

Both side headlamps (HI) are not turned ON when setting to the lighting switch HI or PASS.

Diagnosis Procedure

INFOID:0000000003774370

1.COMBINATION SWITCH INSPECTION

Check the combination switch. Refer to BCS-76, "Symptom Table".

Is the combination switch normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning part.

2.CHECK HEADLAMP (HI) REQUEST SIGNAL INPUT

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

Monitor item	Condition		Monitor status
HL HI REQ	Lighting switch (2ND)	HI or PASS	On
		LO	Off

Is the item status normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-78, "Exploded View".

3.HEADLAMP (HI) CIRCUIT INSPECTION

Check the headlamp (HI) circuit. Refer to EXL-54, "Component Function Check".

Is the headlamp (HI) circuit normal?

YES >> Replace IPDM E/R.
NO >> Repair or replace the malfunctioning part.

BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON

Description

INFOID:0000000003774371

Both side headlamps (LO) are not turned ON in any condition.

Diagnosis Procedure

INFOID:0000000003774372

1.CHECK COMBINATION SWITCH

Check the combination switch. Refer to BCS-76, "Symptom Table".

Is the combination switch normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning part.

2.CHECK HEADLAMP (LO) REQUEST SIGNAL INPUT

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.

Monitor item	Condition		Monitor status
HL LO REQ	Lighting switch	2ND	On
		OFF	Off

Is the item status normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-78, "Exploded View".

3.HEADLAMP (LO) CIRCUIT INSPECTION

Check the headlamp (LO) circuit. Refer to EXL-56, "Component Function Check".

Is the headlamp (LO) circuit normal?

YES >> Replace IPDM E/R.
NO >> Repair or replace the malfunctioning part.

PARKING, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON

Description

INFOID:0000000003773608

The parking, license plate, tail lamps and each illumination are not turned ON in any condition.

Diagnosis Procedure

INFOID:0000000003773609

1.CHECK FUSE

Check that the following fuse is fusing.

Unit	Location	Fuse No.	Capacity
Parking lamp	IPDM E/R	#52	10 A
• Tail lamp • License plate lamp		#53	10 A

Is the fuse fusing?

YES >> Repair the applicable circuit. And then replace the fuse.
NO >> GO TO 2.

2.COMBINATION SWITCH INSPECTION

Check the combination switch. Refer to BCS-76, "Symptom Table".

Is the combination switch normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunctioning part.

3.CHECK TAIL LAMP RELAY REQUEST SIGNAL INPUT

CONSULT-III DATA MONITOR

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

Monitor item	Condition		Monitor status
TAIL & CLR REQ	Lighting switch	1ST	On
		OFF	Off

Is the item status normal?

YES >> GO TO 4.
NO >> Replace BCM. Refer to BCS-78, "Exploded View".

4.TAIL LAMP CIRCUIT INSPECTION

Check the tail lamp circuit. Refer to EXL-74, "Component Function Check".

Is the tail lamp circuit normal?

YES >> Replace IPDM E/R.
NO >> Repair or replace the malfunctioning part.

BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON

Description

INFOID:0000000003773610

The front fog lamps are not turned ON in any condition.

Diagnosis Procedure

INFOID:0000000003773611

1.CHECK FUSE

Check that the following fuse is fusing.

Unit	Location	Fuse No.	Capacity
Front fog lamp	IPDM E/R	#58	15 A

Is the fuse fusing?

YES >> Repair the applicable circuit. And then replace the fuse.
NO >> GO TO 2.

2.COMBINATION SWITCH INSPECTION

Check the combination switch. Refer to BCS-76, "Symptom Table".

Is the combination switch normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunctioning part.

3.CHECK FRONT FOG LAMP REQUEST SIGNAL INPUT

CONSULT-III DATA MONITOR
1. Select “FR FOG REQ” of IPDM E/R data monitor item.
2. With operating the front fog lamp switch, check the monitor status.

Monitor item	Condition		Monitor status
FR FOG REQ	Front fog lamp switch (With lighting switch 1ST)	ON	On
		OFF	Off

Is the item status normal?

YES >> GO TO 4.
NO >> Replace BCM. Refer to BCS-78, "Exploded View".

4.FRONT FOG LAMP CIRCUIT INSPECTION

Check the front fog lamp circuit. Refer to EXL-62, "Component Function Check".

Is the front fog lamp circuit normal?

YES >> Replace IPDM E/R.
NO >> Repair or replace the malfunctioning part.

PRECAUTION

PRECAUTIONS

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

INFOID:0000000003813382

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the “SRS AIRBAG” and “SEAT BELT” of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the “SRS AIRBAG”.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

Precautions For Xenon Headlamp Service

INFOID:0000000003773614

WARNING:

Comply with the following warnings to prevent any serious accident.

- **Disconnect the battery cable (negative terminal) or the power supply fuse before installing, removing, or touching the xenon headlamp (bulb included). The xenon headlamp contains high-voltage generated parts.**
- **Never work with wet hands.**
- **Check the xenon headlamp ON-OFF status after assembling it to the vehicle. Never turn the xenon headlamp ON in other conditions. Connect the power supply to the vehicle-side connector. (Turning it ON outside the lamp case may cause fire or visual impairments.)**
- **Never touch the bulb glass immediately after turning it OFF. It is extremely hot.**

CAUTION:

Comply with the following cautions to prevent any error and malfunction.

- **Install the xenon bulb securely. (Insufficient bulb socket installation may melt the bulb, the connector, the housing, etc. by high-voltage leakage or corona discharge.)**
- **Never perform HID circuit inspection with a tester.**
- **Never touch the xenon bulb glass with hands. Never put oil and grease on it.**
- **Dispose of the used xenon bulb after packing it in thick vinyl without breaking it.**
- **Never wipe out dirt and contamination with organic solvent (thinner, gasoline, etc.).**

ON-VEHICLE MAINTENANCE

HEADLAMP AIMING ADJUSTMENT

Description

INFOID:0000000003774534

PREPARATION BEFORE ADJUSTING

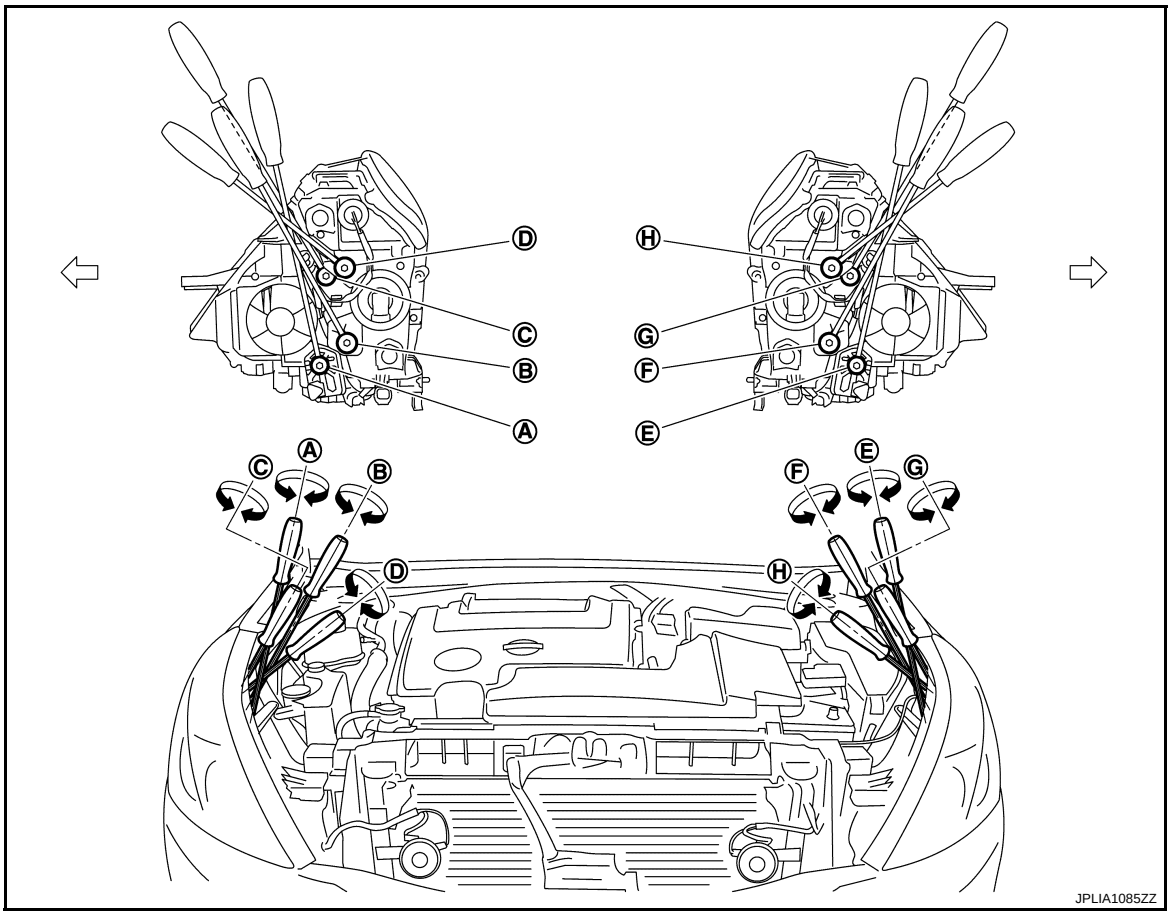
NOTE:

- For details, refer to the regulations in your own country.
- Perform aiming if the vehicle front body has been repaired and/or the headlamp assembly has been replaced.

Before performing aiming adjustment, check the following.

- Adjust the tire pressure to the specification.
- Fill with fuel, engine coolant and each oil.
- Maintain the unloaded vehicle condition. (Remove luggage from the passenger compartment and the trunk room.)
  NOTE:
  Do not remove the temporary tire, jack and on-vehicle tool.
- Wipe out dirt on the headlamp.
  CAUTION:
  Never use organic solvent (thinner, gasoline etc.)
- Ride alone on the driver seat.

AIMING ADJUSTMENT SCREW



A. Headlamp (LO) RH (UP/DOWN) adjustment screw
B. Headlamp (HI) RH (UP/DOWN) adjustment screw
C. Headlamp (LO) RH (UP-OUTSIDE/DOWN-INSIDE) adjustment screw
D. Headlamp (HI) RH (UP-INSIDE/DOWN-OUTSIDE) adjustment screw
E. Headlamp (LO) LH (UP/DOWN) adjustment screw
F. Headlamp (HI) LH (UP/DOWN) adjustment screw
G. Headlamp (LO) LH (UP-OUTSIDE/DOWN-INSIDE) adjustment screw
H. Headlamp (HI) LH (UP-INSIDE/DOWN-OUTSIDE) adjustment screw

⇦: Vehicle center

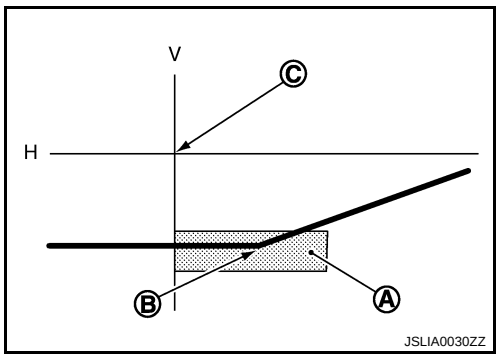
Adjustment screw		Screw driver rotation	Facing direction
A	Headlamp (LO) RH (UP/DOWN)	Clockwise	UP
		Counterclockwise	DOWN
B	Headlamp (HI) RH (UP/DOWN)	Clockwise	UP
		Counterclockwise	DOWN
C	Headlamp (LO) RH (UP-OUTSIDE/DOWN-INSIDE)	Clockwise	DOWN-INSIDE
		Counterclockwise	UP-OUTSIDE
D	Headlamp (HI) RH (UP-INSIDE/DOWN-OUTSIDE)	Clockwise	DOWN-OUTSIDE
		Counterclockwise	UP-INSIDE
E	Headlamp (LO) LH (UP/DOWN)	Clockwise	UP
		Counterclockwise	DOWN
F	Headlamp (HI) LH (UP/DOWN)	Clockwise	UP
		Counterclockwise	DOWN
G	Headlamp (LO) LH (UP-OUTSIDE/DOWN-INSIDE)	Clockwise	DOWN-INSIDE
		Counterclockwise	UP-OUTSIDE
H	Headlamp (HI) LH (UP-INSIDE/DOWN-OUTSIDE)	Clockwise	DOWN-OUTSIDE
		Counterclockwise	UP-INSIDE

Aiming Adjustment Procedure (Low Beam)

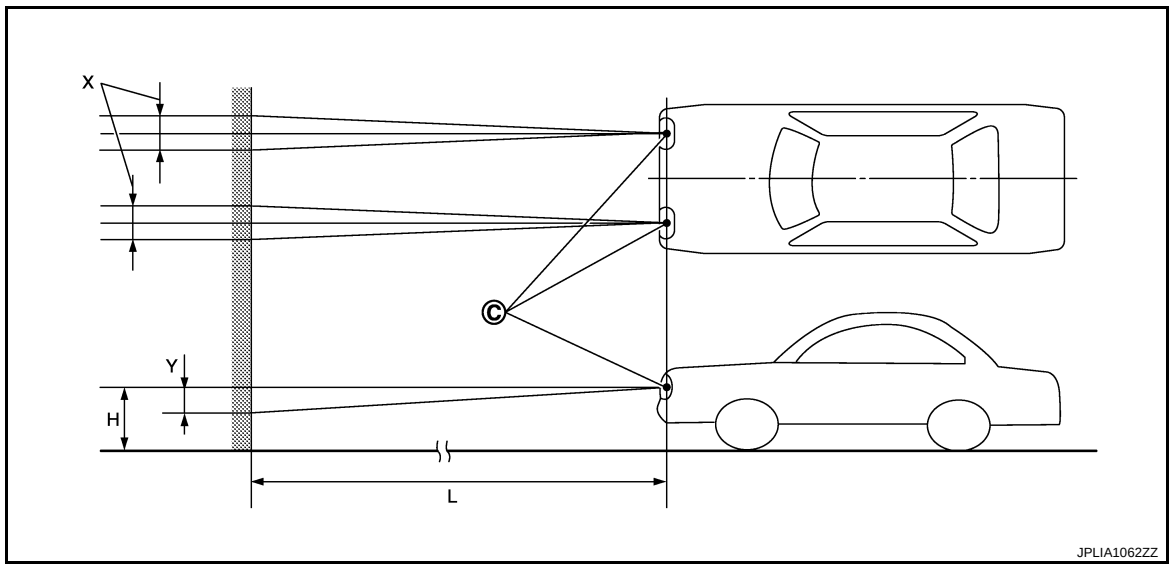
INFOID:0000000003774533

1. Place the screen.
   NOTE:
   • Stop the vehicle at the perpendicular angle to the wall.
   • Set the screen so that it is perpendicular to a level load surface.
2. Face the vehicle squarely toward the screen and make the distance between the headlamp center and the screen 10 m (32.8 ft).
3. Start the engine and illuminate the headlamp (LO).
   NOTE:
   Block light from the headlamp that is not being adjusted with a thick fabric or another object, so that it does not reach the adjustment screen.
   CAUTION:
   Do not cover lens surface with tape, etc. because it is made from plastic.
4. Use the aiming adjustment screw to adjust the elbow point projected by the low beams on the screen, so that it is within the aiming adjustment area.

Low beam distribution on the screen



A. Aiming adjustment area
B. Elbow point
C. Headlamp center
H. Horizontal center line of headlamp
V. Vertical center line of headlamp



C. Vertical center line of headlamp
H. Horizontal center line of headlamp
L. Distance from headlamp center to screen
X. Aiming adjustment area (lateral)
Y. Aiming adjustment area (Vertical)

Distance from headlamp center to screen (L) : 10m (32.8 ft)

Unit: mm (in)

Aiming adjustment area		
Vertical direction (Y) (Lower side from headlamp center height)		Lateral direction (X) (Right and left side from headlamp centerline)
Highest light axis	100 (3.94)	0-100 (3.94)
Target light axis	120 (4.72)	
Lowest light axis	150 (5.91)	

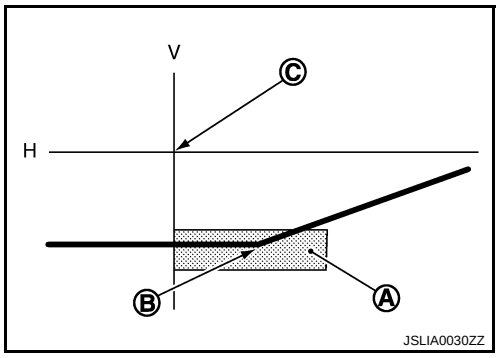
Aiming Adjustment Procedure (High Beam)

INFOID:0000000003827917

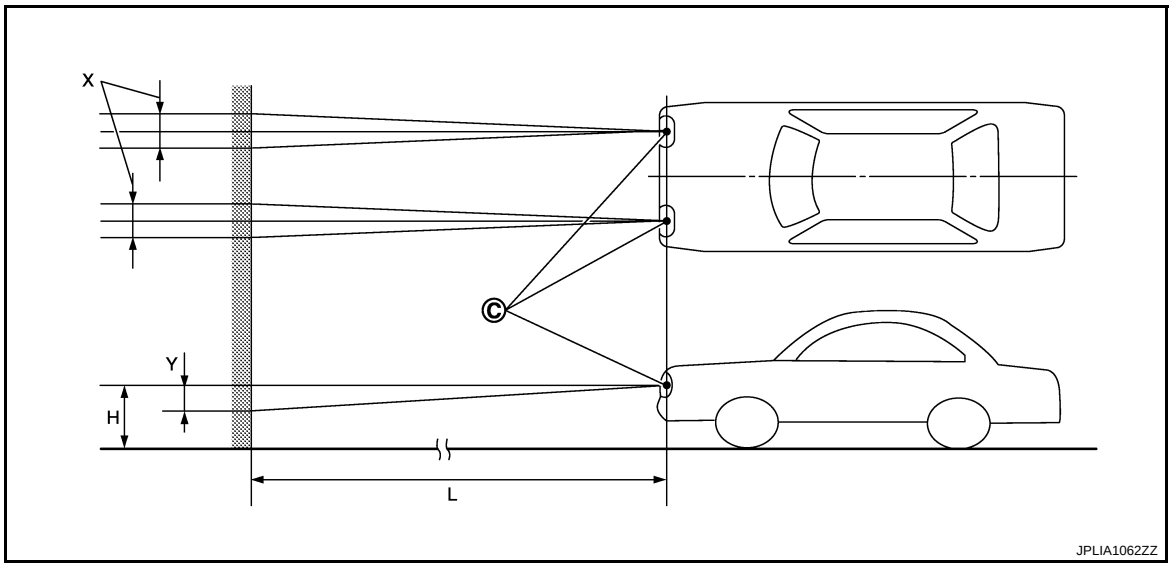
1. Place the screen.
NOTE:
- Stop the vehicle at the perpendicular angle to the wall.
- Set the screen so that it is perpendicular to a level load surface.

2. Face the vehicle squarely toward the screen and make the distance between the headlamp center and the screen 10 m (32.8 ft).
3. Start the engine and illuminate the headlamp (HI).
   NOTE:
   Block light from the headlamp that is not being adjusted with a thick fabric or another object, so that it does not reach the adjustment screen.
   CAUTION:
   Do not cover lens surface with tape, etc. because it is made from plastic.
4. Use the aiming adjustment screw to adjust the elbow point projected by the low beams on the screen, so that it is within the aiming adjustment area.

High beam distribution on the screen



A. Aiming adjustment area
B. Elbow point
C. Headlamp center
H. Horizontal center line of headlamp
V. Vertical center line of headlamp



C. Vertical center line of headlamp
H. Horizontal center line of headlamp
L. Distance from headlamp center to screen
X. Aiming adjustment area (lateral)
Y. Aiming adjustment area (Vertical)

Distance from headlamp center to screen (L) : 10m (32.8 ft)

Unit: mm (in)

Aiming adjustment area		
Vertical direction (Y) (Lower side from headlamp center height)		Lateral direction (X) (Right and left side from headlamp centerline)
Highest light axis	106 (4.17)	0-100 (3.94)
Target light axis	120 (4.72)	
Lowest light axis	164 (6.46)	

FRONT FOG LAMP AIMING ADJUSTMENT

Description

INFOID:0000000003773617

PREPARATION BEFORE ADJUSTING

NOTE:

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

Before performing aiming adjustment, check the following.

- Adjust the tire pressure to the specification.
- Fill with fuel, engine coolant and each oil.
- Maintain the unloaded vehicle condition. (Remove luggage from the passenger compartment and the luggage room.)
  NOTE:
  Do not remove the temporary tire, jack and on-vehicle tool.
- Wipe out dirt on the headlamp.
  CAUTION:
  Never use organic solvent (thinner, gasoline etc.)
- Ride alone on the driver seat.

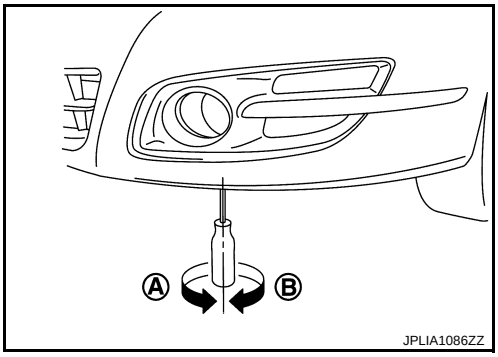
AIMING ADJUSTMENT SCREW

- Turn the aiming adjusting screw for adjustment.

  A: UP

  B: DOWN

- For the position and direction of the adjusting screw, refer to the figure.
  NOTE:
  A screwdriver or hexagonal wrench [6 mm (0.24 in)] can be used for adjustment.

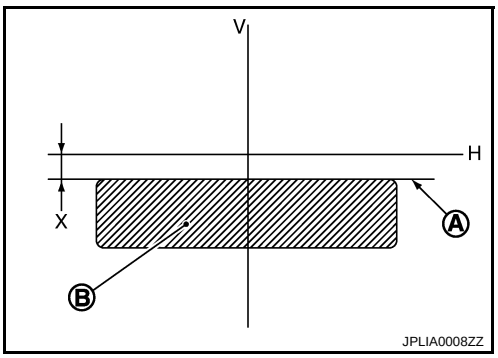


Aiming Adjustment Procedure

INFOID:0000000003773618

1. Place the screen.
   NOTE:
   - Stop the vehicle facing the wall.
   - Place the board on a plain road vertically.
2. Face the vehicle with the screen. Maintain 10 m (32.8 ft) between the front fog lamp center and the screen.
3. Start the engine. Illuminate the front fog lamp.
   CAUTION:
   Never cover the lens surface with a tape etc. The lens is made of resin.
   NOTE:
   Shut off the headlamp light with the board to prevent from illuminating the adjustment screen.
4. Adjust the cutoff line height (A) with the aiming adjustment screw so that the distance (X) between the horizontal center line of front fog lamp (H) and (A) becomes 200 mm (7.87 in).

Front fog lamp light distribution on the screen



A : Cutoff line
B : High illuminance area
H : Horizontal center line of front fog lamp
V : Vertical center line of front fog lamp
X : Cutoff line height

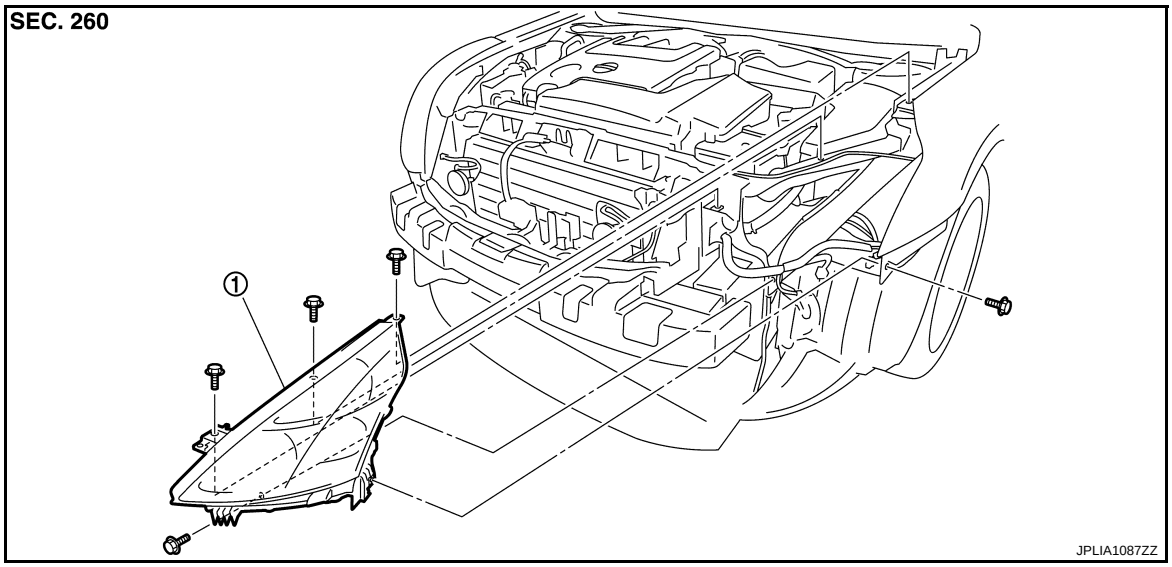
ON-VEHICLE REPAIR

FRONT COMBINATION LAMP

Exploded View

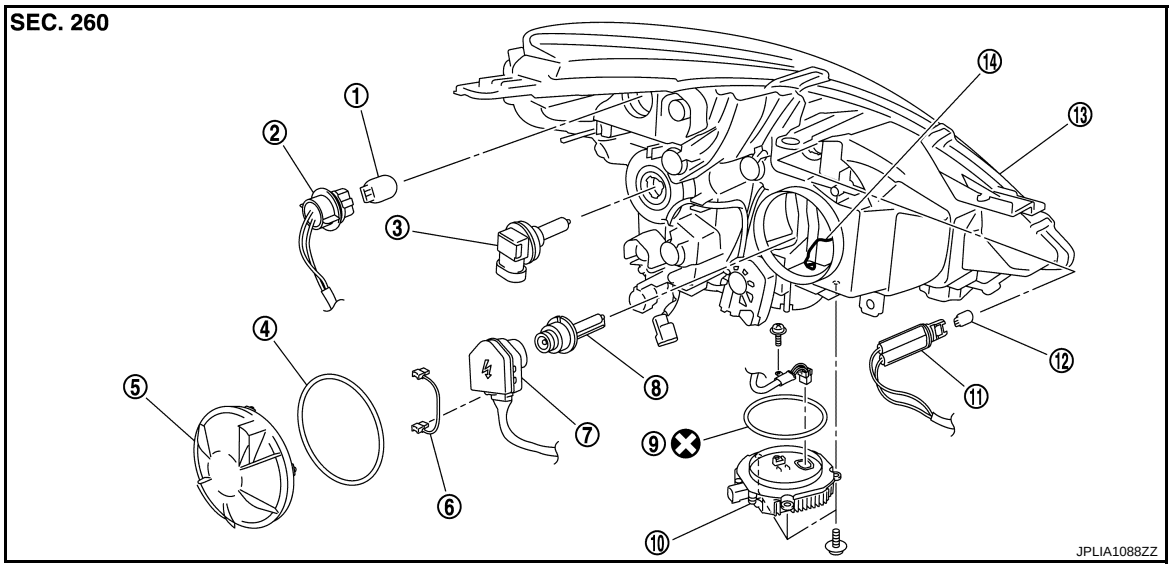
INFOID:0000000003773619

REMOVAL



1. Front combination lamp

DISASSEMBLY



1. Front turn signal lamp bulb
2. Front turn signal lamp bulb socket
3. Halogen bulb (HI)
4. Seal packing
5. Resin cap
6. Ground line
7. Xenon bulb socket (Starter)
8. Xenon bulb (LO)
9. Seal packing
10. HID control unit (Inverter)
11. Parking lamp bulb socket
12. Parking lamp bulb
13. Headlamp housing assembly
14. Retaining spring

Refer to GI-4, "Components" for symbols in the figure.

Removal and Installation

INFOID:0000000003773620

REMOVAL

CAUTION:
Disconnect the battery negative terminal or remove the fuse.

1. Remove the front bumper fascia. Refer to EXT-11, "Exploded View".
2. Remove the headlamp mounting bolts.
3. Remove the harness clips from the headlamp housing.
4. Pull out the headlamp assembly forward the vehicle.
5. Disconnect the connector before removing the headlamp assembly.

INSTALLATION

Install in the reverse order of removal.

NOTE:
After installation, perform aiming adjustment. Refer to EXL-173, "Description".

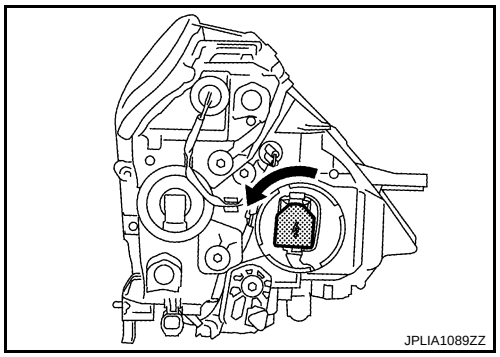
Replacement

INFOID:0000000003773621

CAUTION:
- **Disconnect the battery negative terminal or remove the fuse.**
- **After installing the bulb, install the resin cap and the bulb socket securely for watertightness.**
- **Never touch the glass of bulb directly by hand. Keep grease and other oily matters away from it. Never touch bulb by hand while it is lit or right after being turned off.**
- **Never leave bulb out of lamp reflector for a long time because dust, moisture smoke, etc. may affect the performance of lamp. When replacing bulb, be sure to replace it with new one.**

HEADLAMP BULB (LO)

1. Remove the fender protector. Keep a service area. Refer to EXT-22, "FENDER PROTECTOR : Exploded View".
2. Rotate the resin cap counterclockwise and unlock it.
3. Disconnect the bulb socket ground line.
4. Rotate the bulb socket counterclockwise and unlock it.
5. Unlock the retaining spring. And then remove the bulb from the headlamp housing.
   CAUTION:
   Never break the xenon bulb ceramic tube when replacing the bulb.



HEADLAMP BULB (HI)

1. Remove the fender protector. Keep a service area. Refer to EXT-22, "FENDER PROTECTOR : Exploded View".
2. Disconnect the headlamp (HI) connector.
3. Rotate the bulb counterclockwise and unlock it.
4. Remove the bulb from the headlamp housing.

PARKING LAMP BULB

1. Remove the fender protector. Keep a service area. Refer to EXT-22, "FENDER PROTECTOR : Exploded View".
2. Rotate the bulb socket counterclockwise and unlock it.
3. Remove the bulb from the parking lamp bulb socket.

FRONT TURN SIGNAL LAMP BULB

1. Remove the relay box cover*. Refer to PCS-34, "Exploded View".
   *: When replace a left
2. Rotate the bulb socket counterclockwise and unlock it.
3. Remove the bulb from the front turn signal lamp bulb socket.

Disassembly and Assembly

INFOID:0000000003773622

DISASSEMBLY

1. Rotate the resin cap counterclockwise and unlock it.
2. Disconnect the xenon bulb socket ground line.
3. Rotate the xenon bulb socket counterclockwise and unlock it.
4. Unlock the retaining spring. And then remove the xenon bulb from the headlamp housing.
5. Rotate the halogen bulb (HI) socket counterclockwise and unlock it.
6. Remove the halogen bulb (HI) from the headlamp housing.
7. Remove the HID control unit installation screw.
8. Remove the screw. And then disconnect the connector from HID control unit.
9. Remove the xenon bulb socket from the headlamp housing.
10. Rotate the parking lamp bulb socket counterclockwise and unlock it.
11. Remove the bulb from the parking lamp bulb socket.
12. Rotate the front turn signal lamp bulb socket counterclockwise and unlock it.
13. Remove the bulb from the front turn signal lamp bulb socket.

ASSEMBLY

Assemble in the reverse order of disassembly.

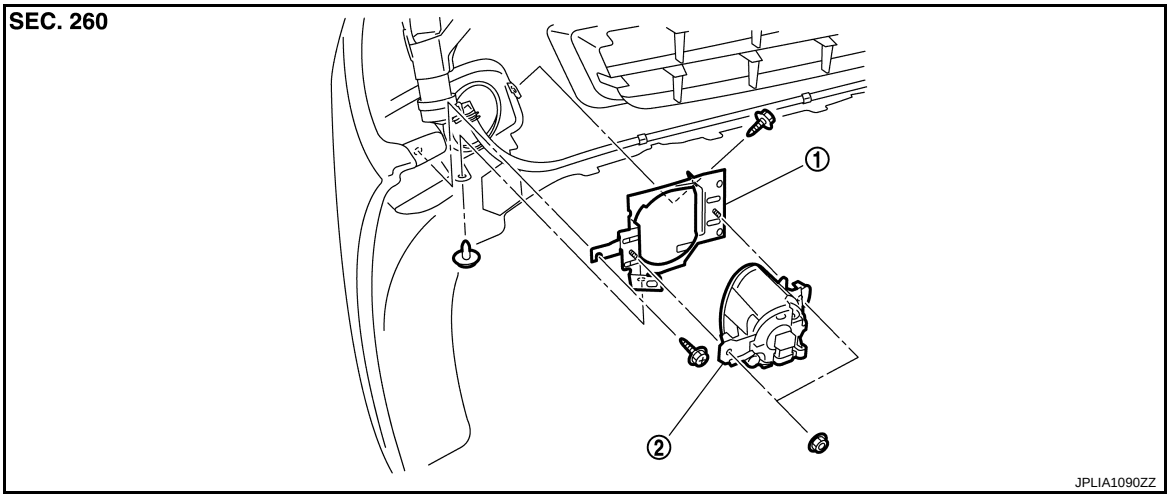
CAUTION:

- **Install HID control unit securely.**
- **After installing the bulb, install the resin cap and the bulb socket securely for watertightness.**

FRONT FOG LAMP

Exploded View

INFOID:0000000003773623



1. Front fog lamp bracket
2. Front fog lamp

Removal and Installation

INFOID:0000000003773624

CAUTION:
Disconnect the battery negative terminal or remove the fuse.

REMOVAL

1. Remove the front fender protector. Keep a service area. Refer to EXT-22, "FENDER PROTECTOR : Exploded View".
2. Remove the front fog lamp connector.
3. Remove the mounting nuts. And then remove the front fog lamp.

NOTE:
Never remove a front fog lamp bracket, when the front fog lamp is replaced.

INSTALLATION

Installation is the reverse order of removal.
NOTE:
After installation, perform aiming adjustment. Refer to EXL-178, "Description".

Replacement

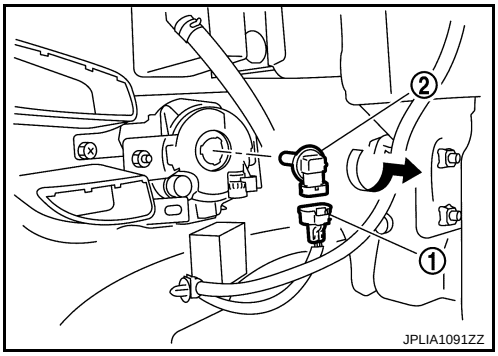
INFOID:0000000003773625

CAUTION:
- **Disconnect the battery negative terminal or remove the fuse.**
- **Never touch the glass of bulb directly by hand. Keep grease and other oily matters away from it. Never touch bulb by hand while it is lit or right after being turned off.**
- **Never leave bulb out of lamp reflector for a long time because dust, moisture smoke, etc. may affect the performance of lamp. When replacing bulb, be sure to replace it with new one.**

FRONT FOG LAMP BULB

1. Remove the front fender protector. Keep a service area. Refer to EXT-22, "FENDER PROTECTOR : Exploded View".

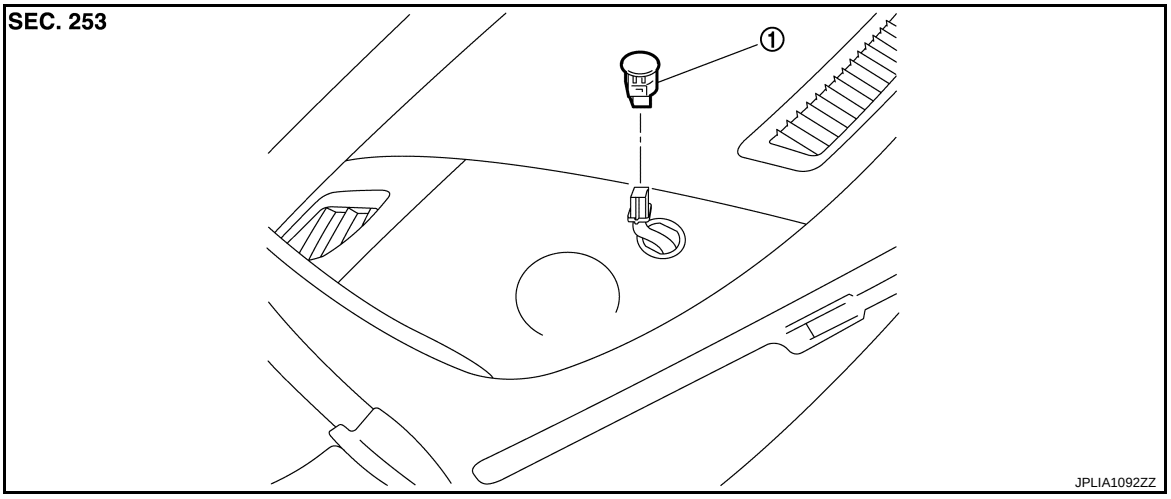
2. Remove the front fog lamp bulb connector (1).
3. Rotate the bulb (2) counterclockwise and unlock it.



OPTICAL SENSOR

Exploded View

INFOID:0000000003773626



1. Optical sensor

Removal and Installation

INFOID:0000000003773627

REMOVAL

1. Insert an appropriate tool between the optical sensor and the speaker grille (RH). Pull out the optical sensor upward.
2. Disconnect the optical sensor connector. And then remove the optical sensor.

INSTALLATION

Install in the reverse order of removal.

LIGHTING & TURN SIGNAL SWITCH

Exploded View

INFOID:0000000003773628

Removal and Installation

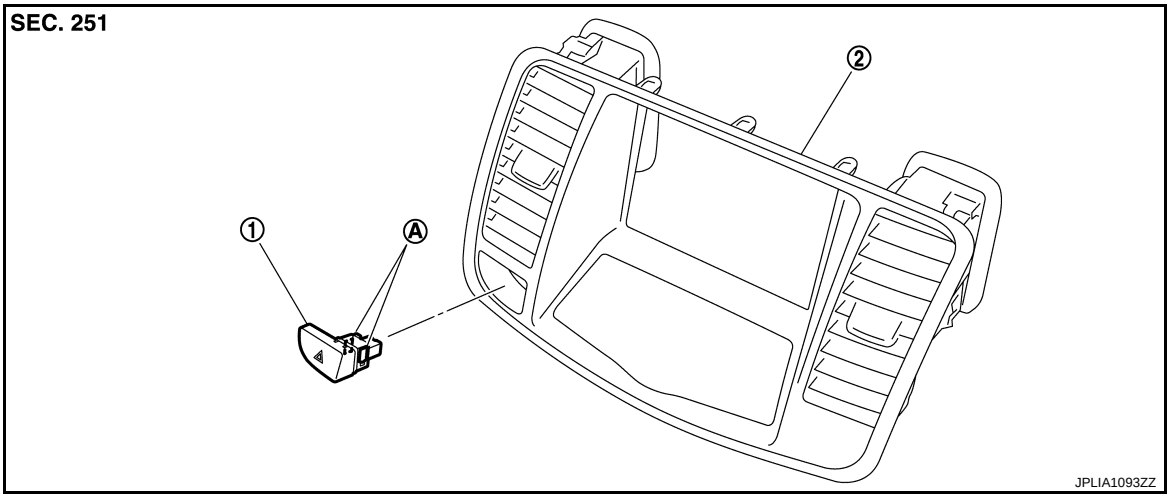
INFOID:0000000003773629

Lighting & turn signal switch is integrated in the combination switch. Refer to BCS-79, "Exploded View".

HAZARD SWITCH

Exploded View

INFOID:0000000003773630



1. Hazard switch
2. Cluster lid D

A. Pawls

Removal and Installation

INFOID:0000000003773631

REMOVAL

1. Remove the cluster lid D. Refer to IP-11, "Exploded View".
2. Disengage the pawls. And then remove the hazard switch.

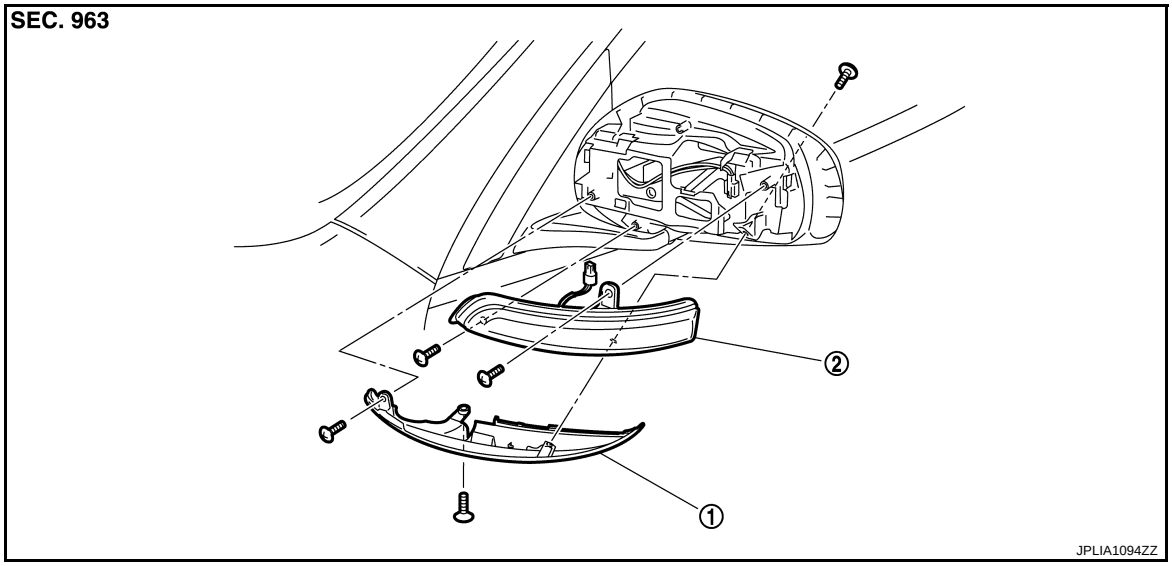
INSTALLATION

Install in the reverse order of removal.

SIDE TURN SIGNAL LAMP

Exploded View

INFOID:0000000003816250



1. Side turn signal lamp
2. Door mirror under cover

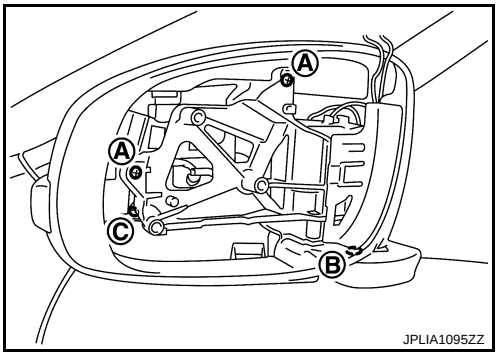
Removal and Installation

INFOID:0000000003816251

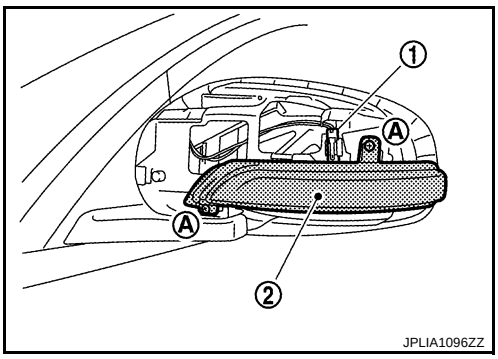
CAUTION:
Disconnect battery negative terminal or remove the fuse.

REMOVAL

1. Remove the door mirror glass. Refer to MIR-18, "GLASS MIRROR : Exploded View".
2. Remove the door mirror outer cover. Refer to MIR-19, "DOOR MIRROR COVER : Exploded View".
3. Remove the door mirror actuator mounting screws (A) and (B). And then remove the side turn signal lamp mounting screw (C).



4. Remove the door mirror under cover. Refer to MIR-19, "DOOR MIRROR COVER : Exploded View".
5. Remove the screws (A) and connector (1). And then remove the side turn signal lamp (2).



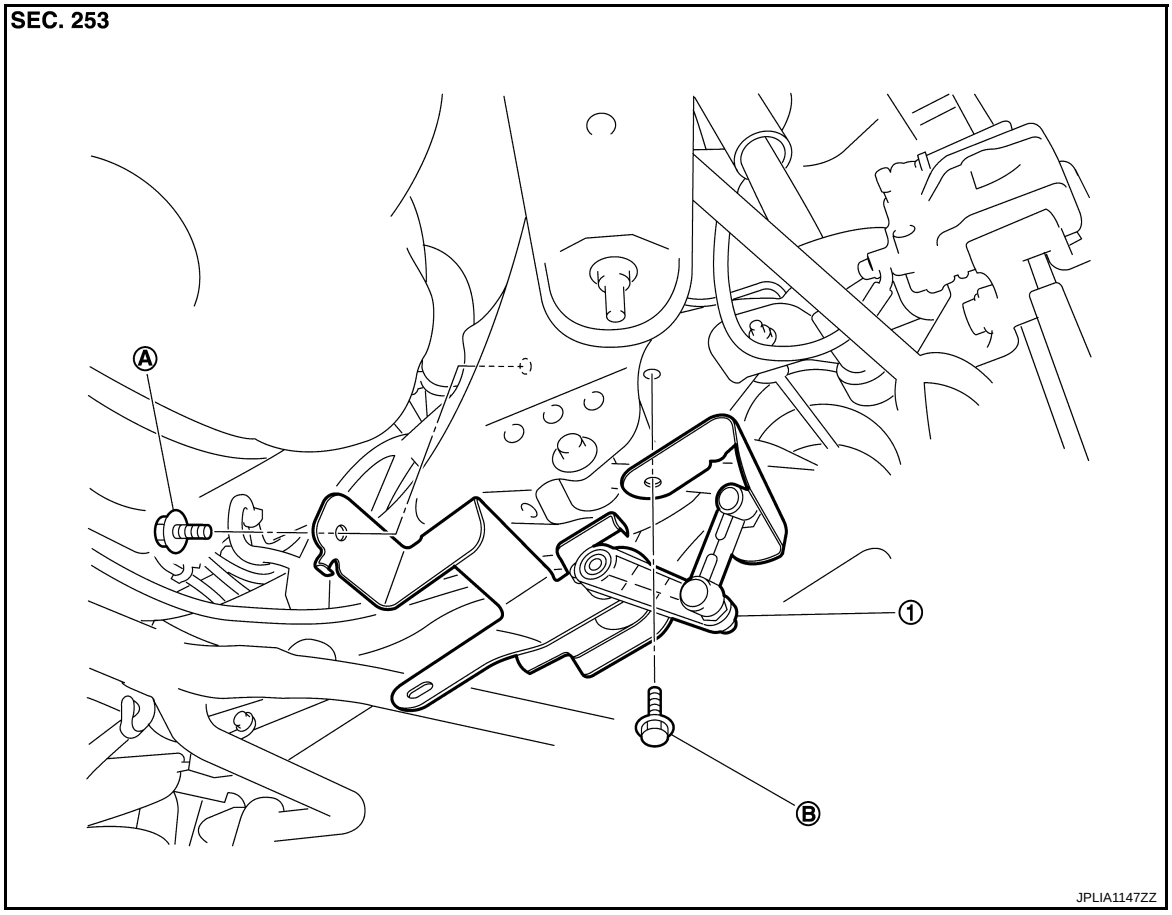
INSTALLATION

Install in the reverse order of removal.

AUTO LEVELIZER CONTROL UNIT

Exploded View

INFOID:0000000003774377



1. Auto levelizer control unit
A. Auto levelizer control unit bolt B. Sensor lever link bracket bolt

Removal and Installation

INFOID:0000000003774378

Removal

1. Remove the auto levelizer control unit bolt.
2. Remove the sensor lever link bracket bolt.
3. Disconnect the auto levelizer control unit connector.
4. Remove the auto levelizer control unit.

Installation

Install in the reverse order of removal.

CAUTION:

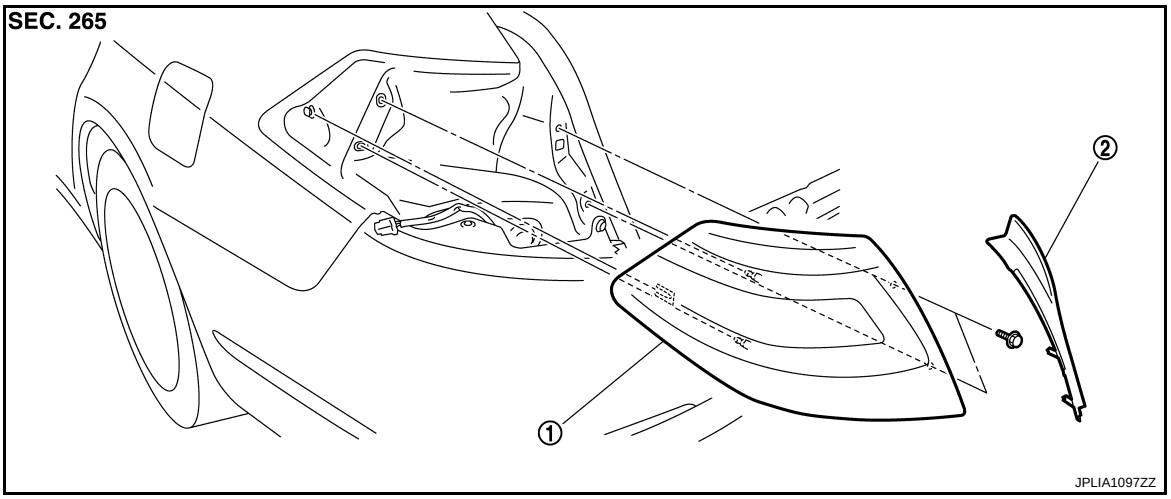
- **Be sure to perform sensor initialization if auto levelizer control unit is removed. Refer to EXL-10, "SENSOR INITIALIZE : Special Repair Requirement (HEADLAMP AIMING CONTROL SYSTEM)".**
- **Be sure to perform “WRITE CONFIGURATION” with CONSULT-III when replacing the auto levelizer control unit. Refer to EXL-9, "CONFIGURATION (HEADLAMP LEVELIZER) : Special Repair Requirement".**

REAR COMBINATION LAMP

Exploded View

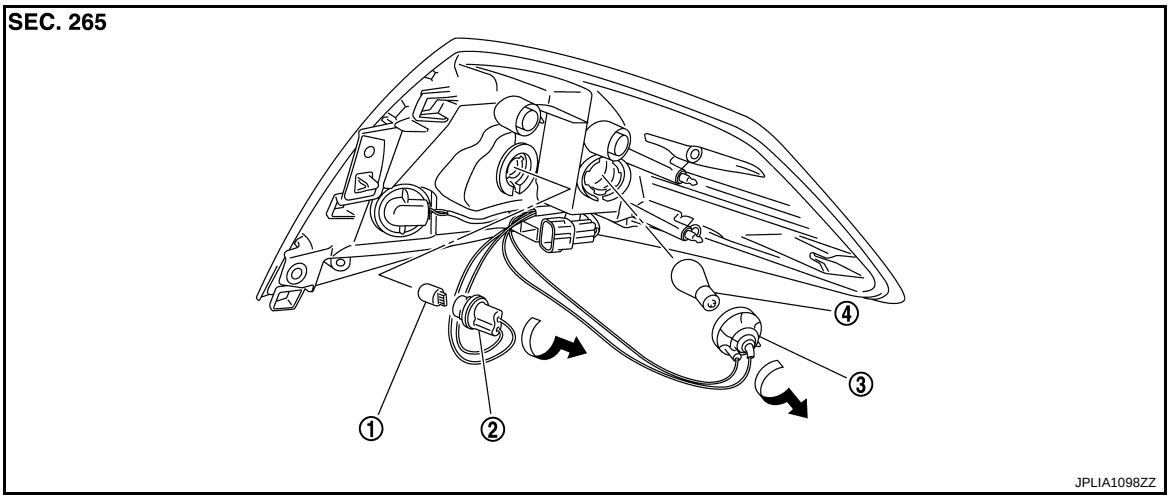
INFOID:0000000003773634

REMOVAL



1. Rear combination lamp
2. Rear combination lamp finisher

DISASSEMBLY



1. Back-up lamp bulb
2. Back-up lamp bulb socket
3. Rear turn signal lamp bulb socket
4. Rear turn signal lamp bulb

Removal and Installation

INFOID:0000000003773635

CAUTION:
Disconnect the battery negative terminal or remove the fuse.

REMOVAL

1. Remove the rear combination lamp finisher.
2. Remove the rear combination lamp mounting bolts.
3. Pull the rear combination lamp toward outside of the vehicle. And then remove the rear combination lamp.
4. Disconnect the rear combination lamp connector.

INSTALLATION

Install in the reverse order of removal.

Replacement

INFOID:0000000003773636

CAUTION:

- **Disconnect the battery negative terminal or remove the fuse.**
- **Never touch the glass of bulb directly by hand. Keep grease and other oily matters away from it. Never touch bulb by hand while it is lit or right after being turned off.**
- **Never leave bulb out of lamp reflector for a long time because dust, moisture smoke, etc. may affect the performance of lamp. When replacing bulb, be sure to replace it with new one.**

STOP/TAIL LAMP

Replacement integral with rear combination lamp. Refer to EXL-191, "Exploded View".

REAR TURN SIGNAL LAMP BULB

1. Remove the rear combination lamp. Refer to EXL-191, "Exploded View".
2. Rotate the rear turn signal lamp bulb socket counterclockwise, and unlock it.
3. Remove the bulb from the rear turn signal lamp bulb socket.

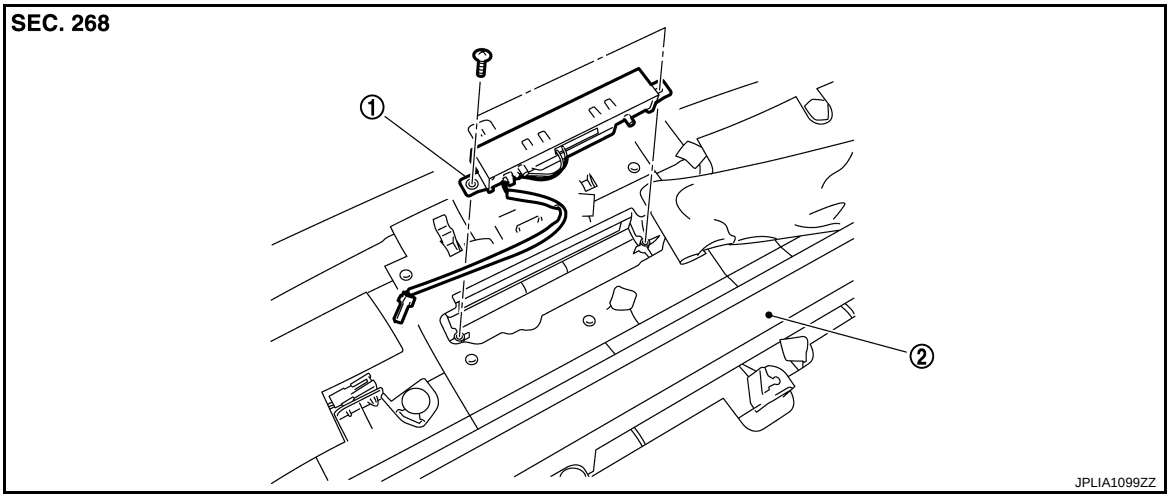
BACK-UP LAMP BULB

1. Remove the rear combination lamp. Refer to EXL-191, "Exploded View".
2. Rotate the back-up lamp bulb socket counterclockwise, and unlock it.
3. Remove the bulb from the back-up lamp bulb socket.

HIGH-MOUNTED STOP LAMP

Exploded View

INFOID:0000000003773637



1. High-mounted stop lamp
2. Rear parcel shelf finisher

Removal and Installation

INFOID:0000000003773638

CAUTION:
Disconnect battery negative terminal or remove the fuse.

REMOVAL

1. Remove the rear parcel shelf finisher. Refer to INT-43, "Exploded View".
2. Remove the screw. And then disconnect the connector.
3. Remove the high-mounted stop lamp.

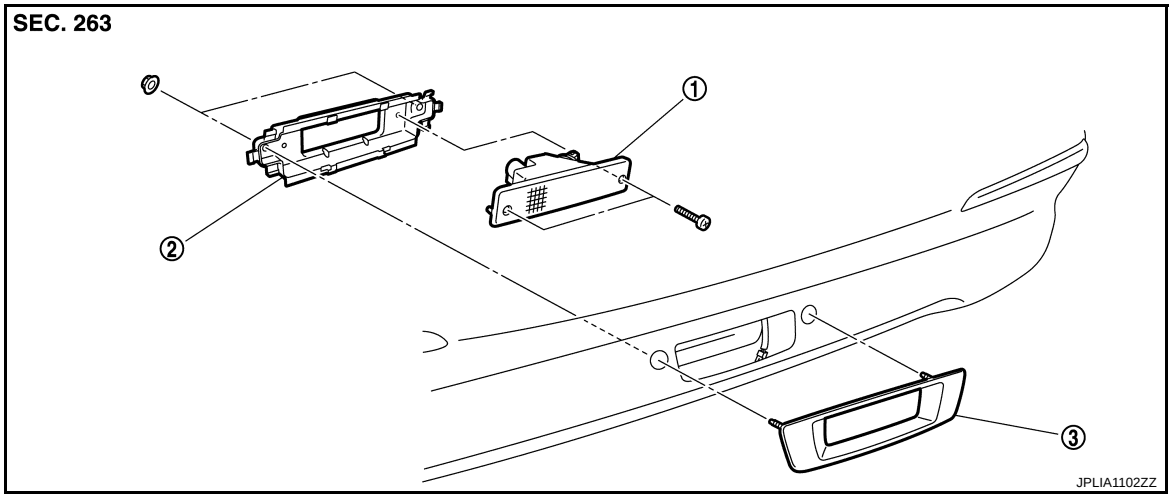
INSTALLATION

Install in the reverse order of removal.

REAR FOG LAMP

Exploded View

INFOID:0000000003774379



1. Rear fog lamp
2. Rear fog lamp bracket
3. Rear fog lamp finisher

Removal and Installation

INFOID:0000000003774380

CAUTION:
Disconnect battery negative terminal or remove the fuse.

REMOVAL

1. Disconnect the rear fog lamp connector.
2. Remove the nuts. And then remove the rear fog lamp rim.
3. Remove the screw. And then remove the rear fog lamp from the rear fog lamp rim.

INSTALLATION

Installation is the reverse order of removal.

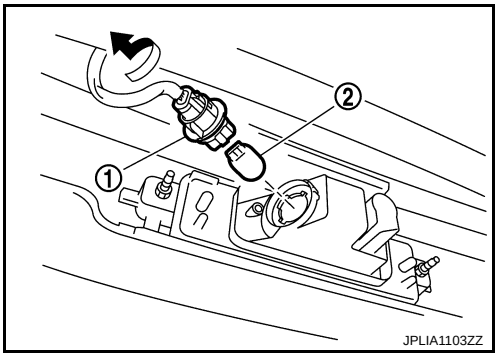
Replacement

INFOID:0000000003774381

CAUTION:
- **Disconnect the battery negative terminal or remove the fuse.**
- **Never touch the glass of bulb directly by hand. Keep grease and other oily matters away from it. Never touch bulb by hand while it is lit or right after being turned off.**
- **Never leave bulb out of lamp reflector for a long time because dust, moisture smoke, etc. may affect the performance of lamp. When replacing bulb, be sure to replace it with new one.**

REAR FOG LAMP BULB

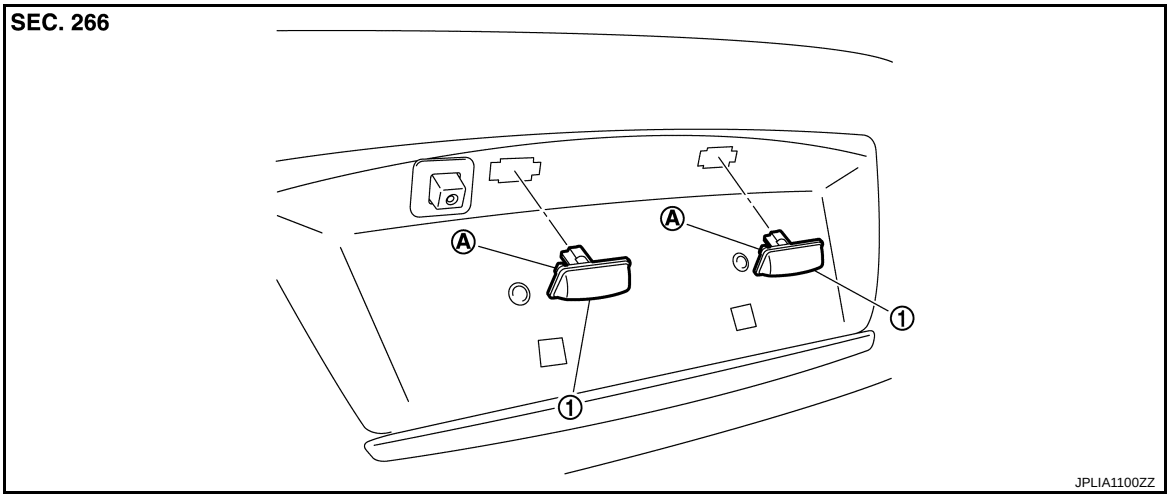
1. Turn the bulb socket (1) counterclockwise and unlock it.
2. Remove the bulb (2) from the rear fog lamp bulb socket.



LICENSE PLATE LAMP

Exploded View

INFOID:0000000003773642



1. License plate lamp
A. Resin clip

Removal and Installation

INFOID:0000000003773643

CAUTION:
Disconnect the battery negative terminal or remove the fuse.

REMOVAL

1. Remove the trunk lid finisher inner. Refer to INT-59, "Exploded View".
2. Remove the trunk lid finisher outer. Refer to INT-59, "Exploded View".
3. Remove the license plate lamp while pushing a resin clip.
4. Disconnect the license plate lamp connector.

INSTALLATION

Install in the reverse order of removal.

Replacement

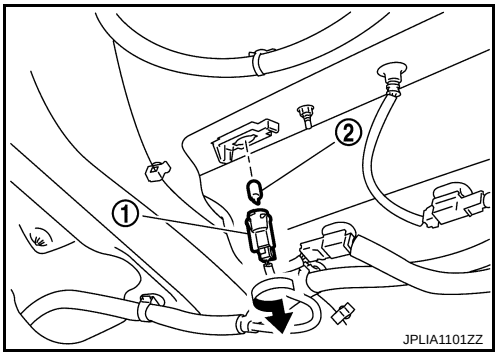
INFOID:0000000003773644

CAUTION:
- **Disconnect the battery negative terminal or remove the fuse.**
- **Never touch the glass of bulb directly by hand. Keep grease and other oily matters away from it. Never touch bulb by hand while it is lit or right after being turned off.**
- **Never leave bulb out of lamp reflector for a long time because dust, moisture smoke, etc. may affect the performance of lamp. When replacing bulb, be sure to replace it with new one.**

LICENSE PLATE LAMP BULB

1. Remove the trunk lid finisher inner. Refer to INT-59, "Exploded View".

2. Turn the license plate lamp bulb socket (1) counterclockwise and unlock it.
3. Remove the bulb (2) from the license plate lamp bulb socket.



SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Bulb Specifications

INFOID:0000000003774382

Item		Type	Wattage (W)
Front combination lamp	Headlamp (HI)	H9	65
	Headlamp (LO)	D2R	35
	Parking Lamp	W5W	5
	Front turn signal	WY21W (Amber)	21
Front fog lamp		H11	55
Front side turn signal lamp (integrated into the door mirror)		LED	—
Rear combination lamp	Stop/tail lamp	LED	—
	Rear turn signal lamp	S25 (Amber)	21
	Back-up lamp	W16W	16
License plate lamp		W5W	5
High-mounted stop lamp		LED	—
Rear fog lamp		W21W	21

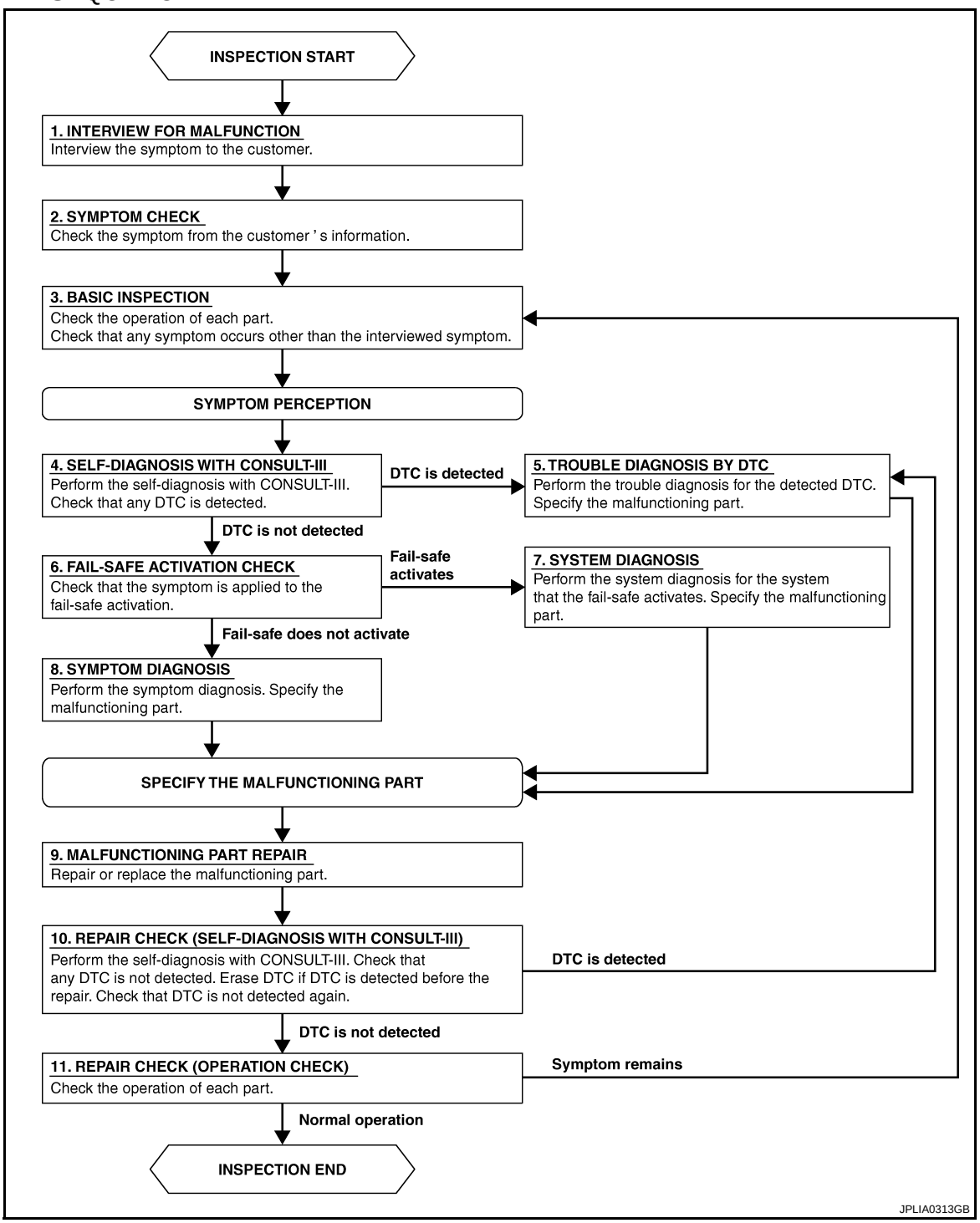
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000003773646

OVERALL SEQUENCE



DETAILED FLOW

1.INTERVIEW FOR MALFUNCTION

Interview the symptom to the customer.

>> GO TO 2.

2.SYMPTOM CHECK

Check the symptom from the customer's information.

>> GO TO 3.

3.BASIC INSPECTION

Check the operation of each part. Check that any symptom occurs other than the interviewed symptom.

>> GO TO 4.

4.SELF-DIAGNOSIS WITH CONSULT-III

Perform the self-diagnosis with CONSULT-III. Check that any DTC is detected.

Is any DTC detected?

YES >> GO TO 5.
NO >> GO TO 6.

5.TROUBLE DIAGNOSIS BY DTC

Perform the trouble diagnosis for the detected DTC. Specify the malfunctioning part.

>> GO TO 9.

6.FAIL-SAFE ACTIVATION CHECK

Check that the symptom is applied to the fail-safe activation.

Does the fail-safe activate?

YES >> GO TO 7.
NO >> GO TO 8.

7.SYSTEM DIAGNOSIS

Perform the system diagnosis for the system that the fail-safe activates. Specify the malfunctioning part.

>> GO TO 9.

8.SYMPTOM DIAGNOSIS

Perform the symptom diagnosis. Specify the malfunctioning part.

>> GO TO 9.

9.MALFUNCTION PART REPAIR

Repair or replace the malfunctioning part.

>> GO TO 10.

10.REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT-III)

Perform the self-diagnosis with CONSULT-III. Check that any DTC is not detected. Erase DTC if DTC is detected before the repair. Check that DTC is not detected again.

Is any DTC detected?

YES >> GO TO 5.
NO >> GO TO 11.

11.REPAIR CHECK (OPERATION CHECK)

Check the operation of each part.

Does it operate normally?

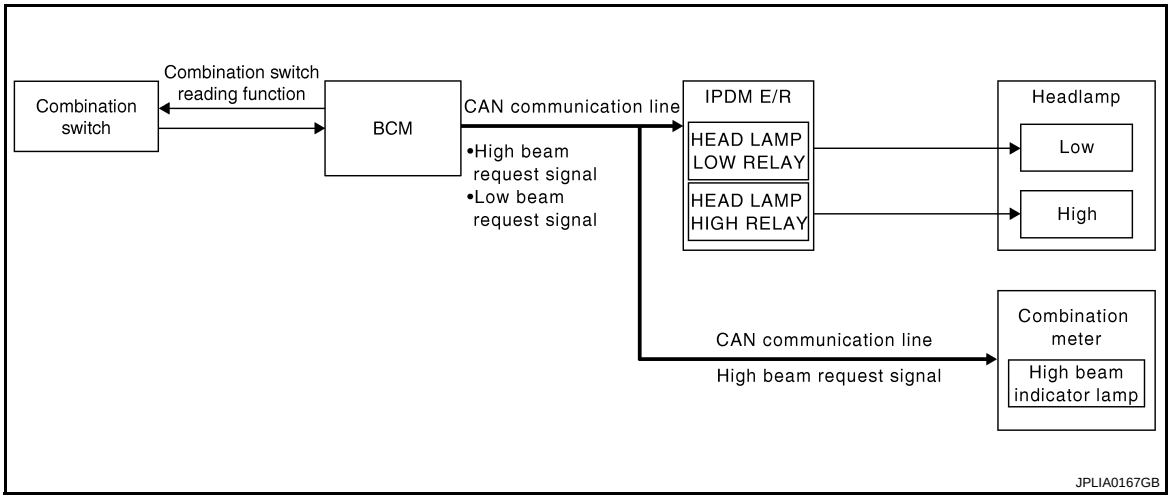
YES >> INSPECTION END
NO >> GO TO 3.

FUNCTION DIAGNOSIS

HEADLAMP SYSTEM

System Diagram

INFOID:0000000003773647



System Description

INFOID:0000000003773648

OUTLINE

Headlamp is controlled by combination switch reading function and headlamp control function of BCM, and relay control function of IPDM E/R.

HEADLAMP (LO) OPERATION

- BCM detects the combination switch condition with the combination switch reading function.
- BCM transmits the low beam request signal to IPDM E/R with CAN communication according to the headlamp (LO) ON condition.

Headlamp (LO) ON condition

- Lighting switch 2ND
- Lighting switch AUTO, and the auto light function ON judgment (With auto light function ON judgment)

- IPDM E/R turns the integrated headlamp low relay ON, and turns the headlamp ON according to the low beam request signal.

HEADLAMP (HI) OPERATION

- BCM transmits the high beam request signal to IPDM E/R and the combination meter with CAN communication according to the headlamp (HI) ON condition.

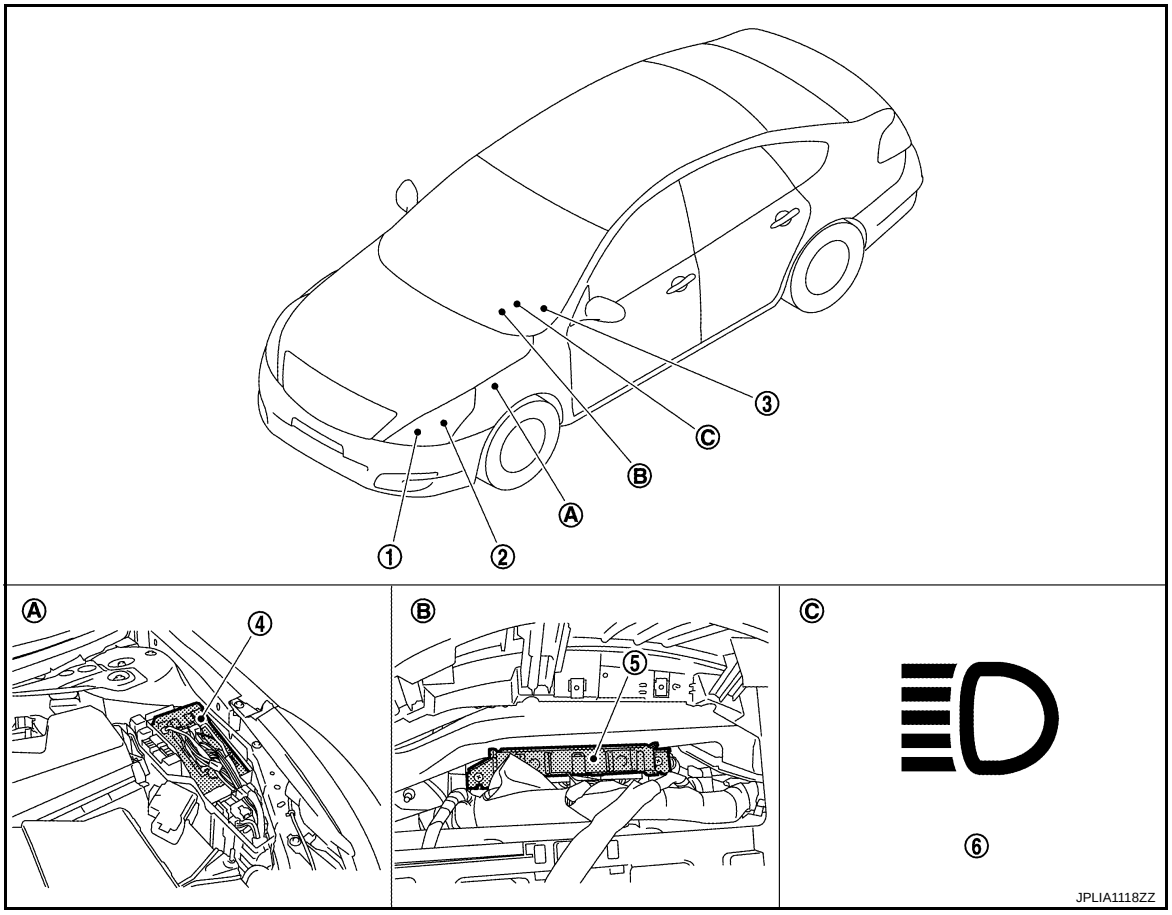
Headlamp (HI) ON condition

- Lighting switch HI with the lighting switch 2ND or AUTO (auto light function ON judgment)
- Lighting switch PASS

- Combination meter turns the high beam indicator lamp ON according to the high beam request signal.
- IPDM E/R turns the integrated headlamp high relay ON, and turns the headlamp ON according to the high beam request signal.

Component Parts Location

INFOID:0000000003773649



1. Headlamp (HI)
2. Headlamp (LO)
3. Combination switch
4. IPDM E/R
5. BCM
6. High beam indicator lamp
A. Engine room (LH)
B. Behind the combination meter
C. On the combination meter

Component Description

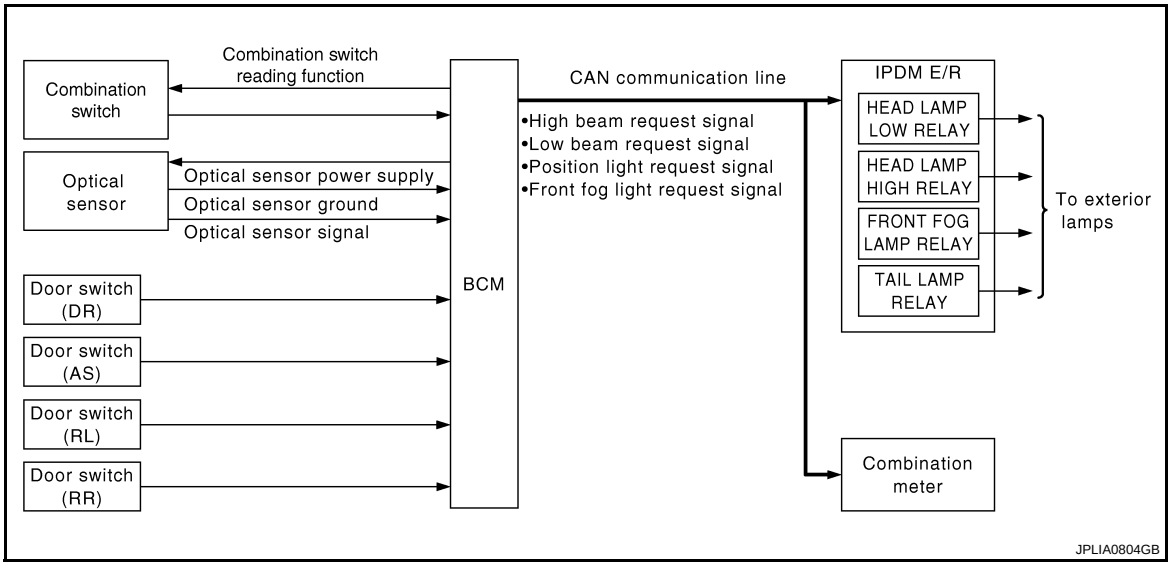
INFOID:0000000003773650

Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Judges that the headlamp is turned ON according to the vehicle condition. - Requests the headlamp relay (HI/LO) ON to IPDM E/R (with CAN communication). - Requests the high beam indicator lamp ON to the combination meter (with CAN communication).
IPDM E/R	Controls the integrated relay, and supplies voltage to the load according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-8, "System Diagram".
Combination meter (High beam indicator lamp)	Turns the high beam indicator lamp ON according to the request from BCM (with CAN communication).

AUTO LIGHT SYSTEM

System Diagram

INFOID:0000000003894281



System Description

INFOID:0000000003894282

OUTLINE

- Auto light system is controlled by each function of BCM and IPDM E/R.

Control by BCM

- Combination switch reading function
- Headlamp control function
- Auto light function
- Delay timer function

Control by IPDM E/R

- Relay control function

- Auto light system has the auto light function and the delay timer function.
- Auto light function turns the exterior lamps* and each illumination ON/OFF automatically according to the outside brightness.
- When auto light system turns the exterior lamps ON with the ignition switch OFF, delay timer function turns the exterior lamps OFF depending on the vehicle condition with the auto light function after a certain period of time.

*: Headlamp (LO/HI), parking lamp, tail lamp and front fog lamp (Headlamp HI and front fog lamp depend on the combination switch condition.)

AUTO LIGHT FUNCTION

- BCM detects the combination switch condition with the combination switch reading function.
- BCM supplies voltage to optical sensor when the ignition switch is turned ON or ACC.
- Optical sensor converts outside brightness (lux) to voltage and transmits the optical sensor signal to BCM.
- BCM judges outside brightness from the optical sensor signal and judges ON/OFF condition of the exterior lamp and each illumination according to the outside brightness.
- BCM transmits each request signal to IPDM E/R with CAN communication according to ON/OFF condition by the auto light function.

NOTE:

ON/OFF timing differs based on the sensitivity from the setting. The setting can be set by CONSULT-III. Refer to EXL-215, "HEADLAMP : CONSULT-III Function (BCM - HEAD LAMP)".

DELAY TIMER FUNCTION

BCM turns the exterior lamp OFF depending on the vehicle condition with the auto light function when the ignition switch is turned OFF.

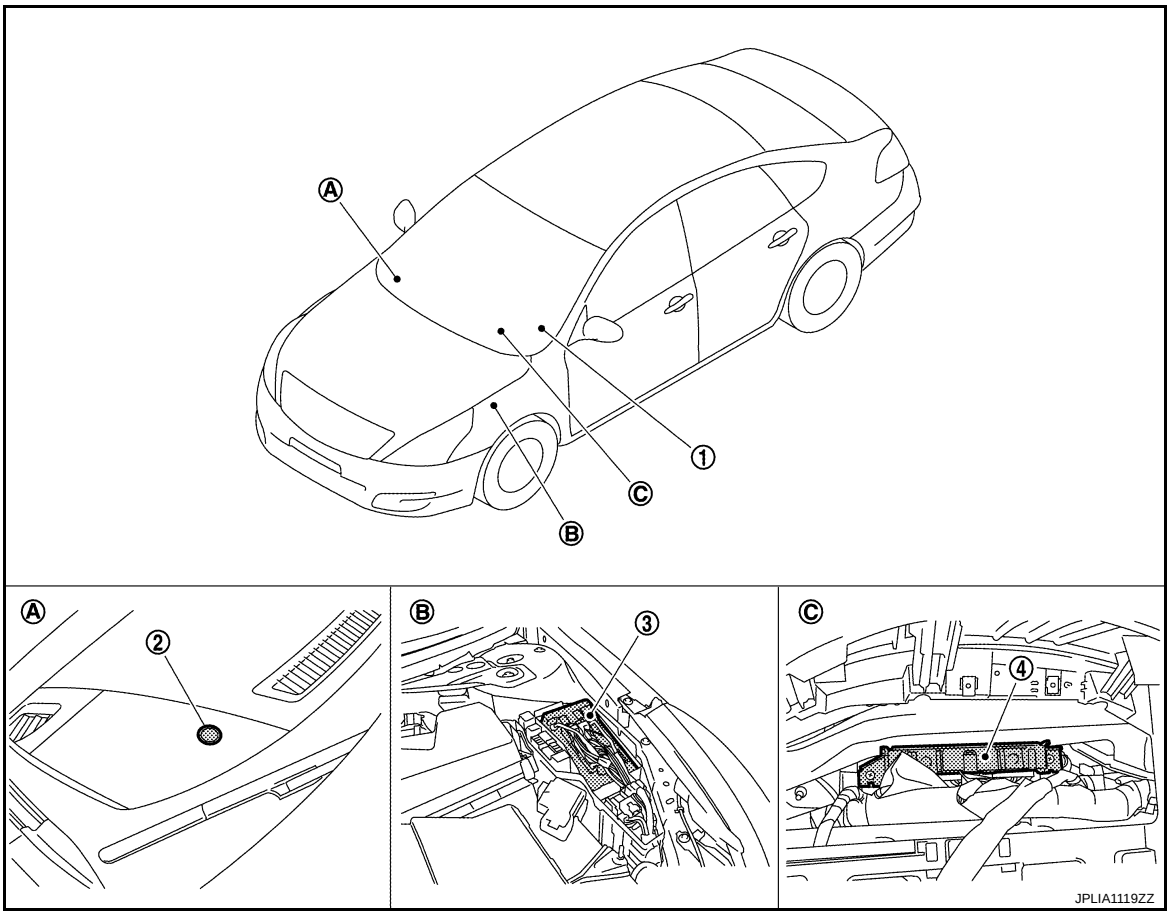
- Turns the exterior lamp OFF 5 minutes after detecting that any door opens (Door switch ON).
- Turns the exterior lamp OFF a certain period of time* after closing all doors (Door switch ON→OFF).

• Turns the exterior lamp OFF with the ignition switch ACC or the light switch OFF.
*: The preset time is 45 seconds. The timer operating time can be set by CONSULT-III. Refer to EXL-215, "HEADLAMP : CONSULT-III Function (BCM - HEAD LAMP)".

NOTE:
When any position other than the light switch AUTO is set, the auto light system function switches to the exterior lamp battery saver function.

Component Parts Location

INFOID:0000000003894283



1. Combination switch
2. Optical sensor
3. IPDM E/R
4. BCM
A. Instrument upper panel (RH)
B. Engine room (LH)
C. Behind the combination meter

Component Description

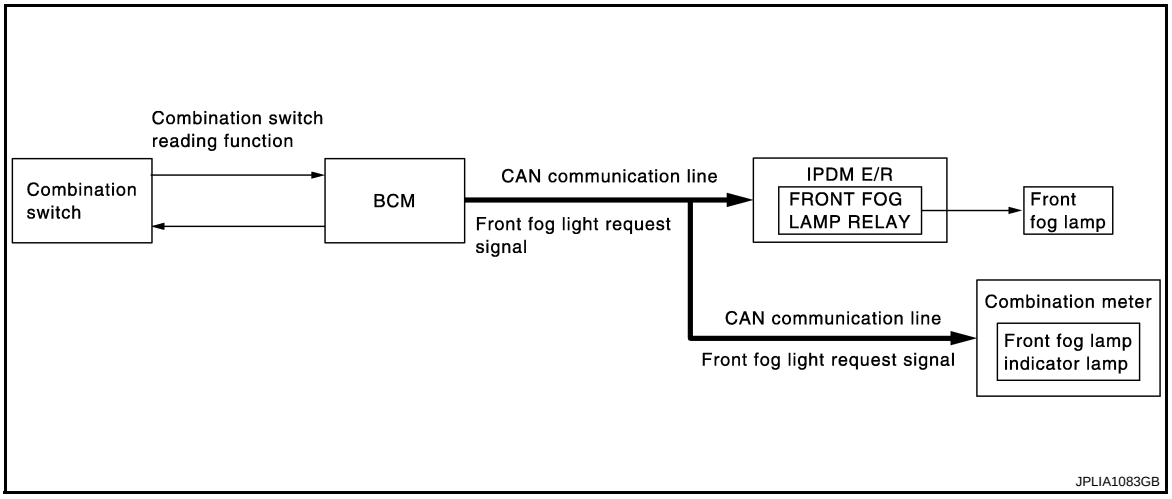
INFOID:0000000003894284

Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Judges the outside brightness from the optical sensor signal. • Judges the OFF timing according to the vehicle condition. • Judges the ON/OFF status of the exterior lamp and each illumination according to the outside brightness and the vehicle condition. Requests ON/OFF of each relay to IPDM E/R (with CAN communication).
IPDM E/R	Controls the integrated relay, and supplies voltage to the load according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-8, "System Diagram".
Optical sensor	Refer to EXL-238, "Description".

FRONT FOG LAMP SYSTEM

System Diagram

INFOID:0000000003894285



System Description

INFOID:0000000003894286

OUTLINE

Front fog lamp is controlled by combination switch reading function and front fog lamp control function of BCM, and relay control function of IPDM E/R.

FRONT FOG LAMP OPERATION

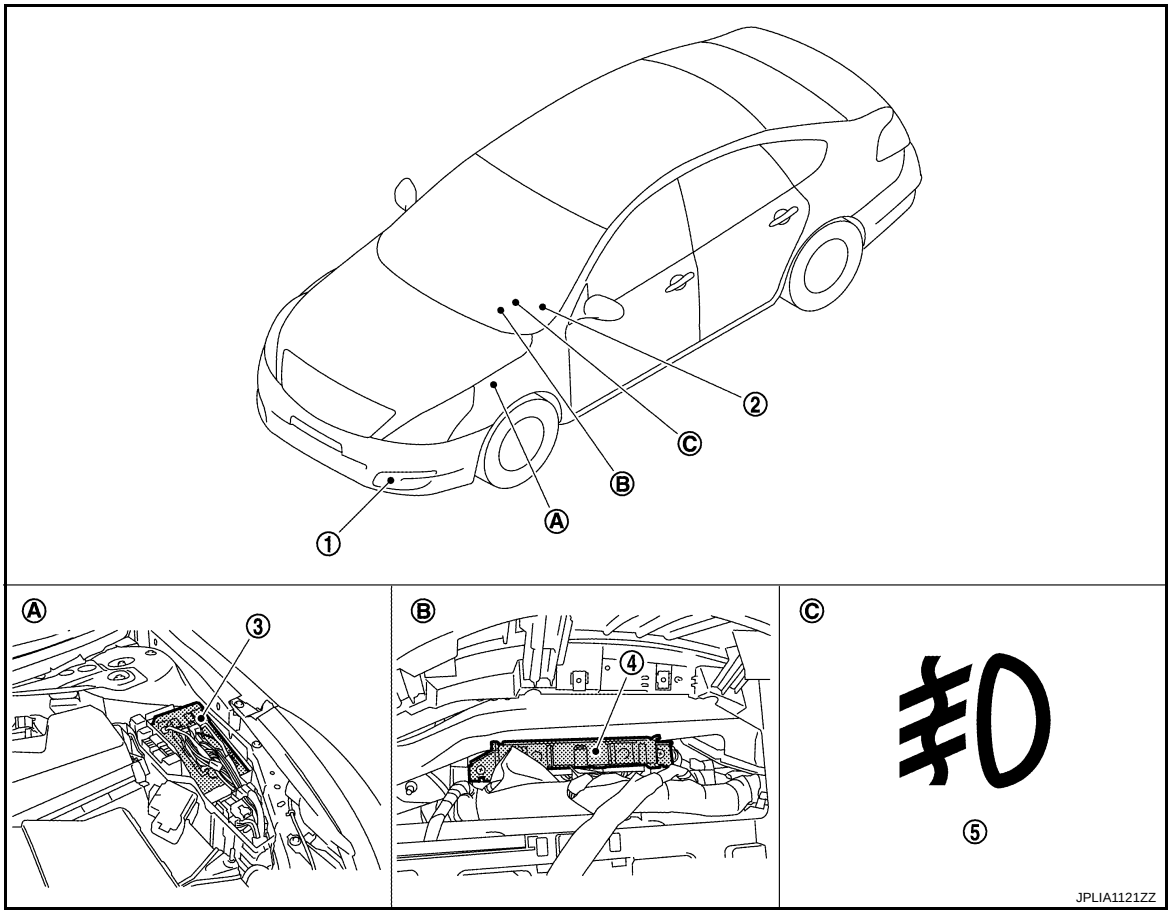
- BCM detects the combination switch condition by the combination switch reading function.
- BCM transmits the front fog light request signal to IPDM E/R with CAN communication according to the front fog lamp ON condition.

Front fog lamp ON condition
- Front fog lamp switch ON
- Lighting switch 1ST, 2ND or AUTO (auto light function ON judgment)

- IPDM E/R turns the integrated front fog lamp relay ON, and turns the front fog lamp ON according to the front fog light request signal.
- Combination meter turns the front fog lamp indicator lamp ON according to the front fog light request signal.

Component Parts Location

INFOID:0000000003894287



1. Front fog lamp
2. Combination switch
3. IPDM E/R
4. BCM
5. Front fog lamp indicator lamp

A. Engine room (LH)
B. Behind the combination meter
C. On the combination meter

Component Description

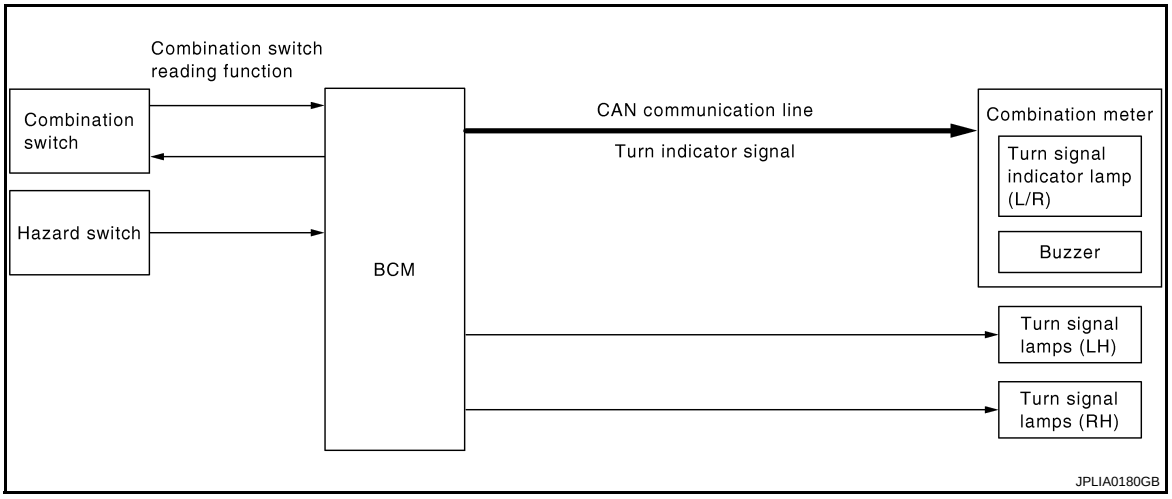
INFOID:0000000003894288

Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Judges the front fog lamp ON/OFF status according to the vehicle condition. - Requests the front fog lamp relay ON to IPDM E/R (with CAN communication).
IPDM E/R	Controls the integrated relay and supplies voltage to the load according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-8, "System Diagram".
Combination meter (Front fog lamp indicator lamp)	Turn the front fog lamp indicator lamp ON according to the request from BCM (with CAN communication).

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM

System Diagram

INFOID:0000000003894289



System Description

INFOID:0000000003894290

OUTLINE

Turn signal lamp and the hazard warning lamp is controlled by combination switch reading function and the flasher control function of BCM.

TURN SIGNAL LAMP OPERATION

- BCM detects the combination switch condition by the combination switch reading function.
- BCM supplies voltage to the right (left) turn signal lamp circuit when the ignition switch is turned ON and the turn signal switch is in the right (left) position. BCM blinks the turn signal lamp.

HAZARD WARNING LAMP OPERATION

BCM supplies voltage to both turn signal lamp circuit when the hazard switch is turned ON. BCM blinks the hazard warning lamp.

TURN SIGNAL INDICATOR LAMP AND TURN SIGNAL SOUND OPERATION

- BCM transmits the turn indicator signal to the combination meter with CAN communication while the turn signal lamp and the hazard warning lamp are operating.
- Combination meter outputs the turn signal sound with the integrated buzzer while blinking the turn signal indicator lamp according to the turn indicator signal.

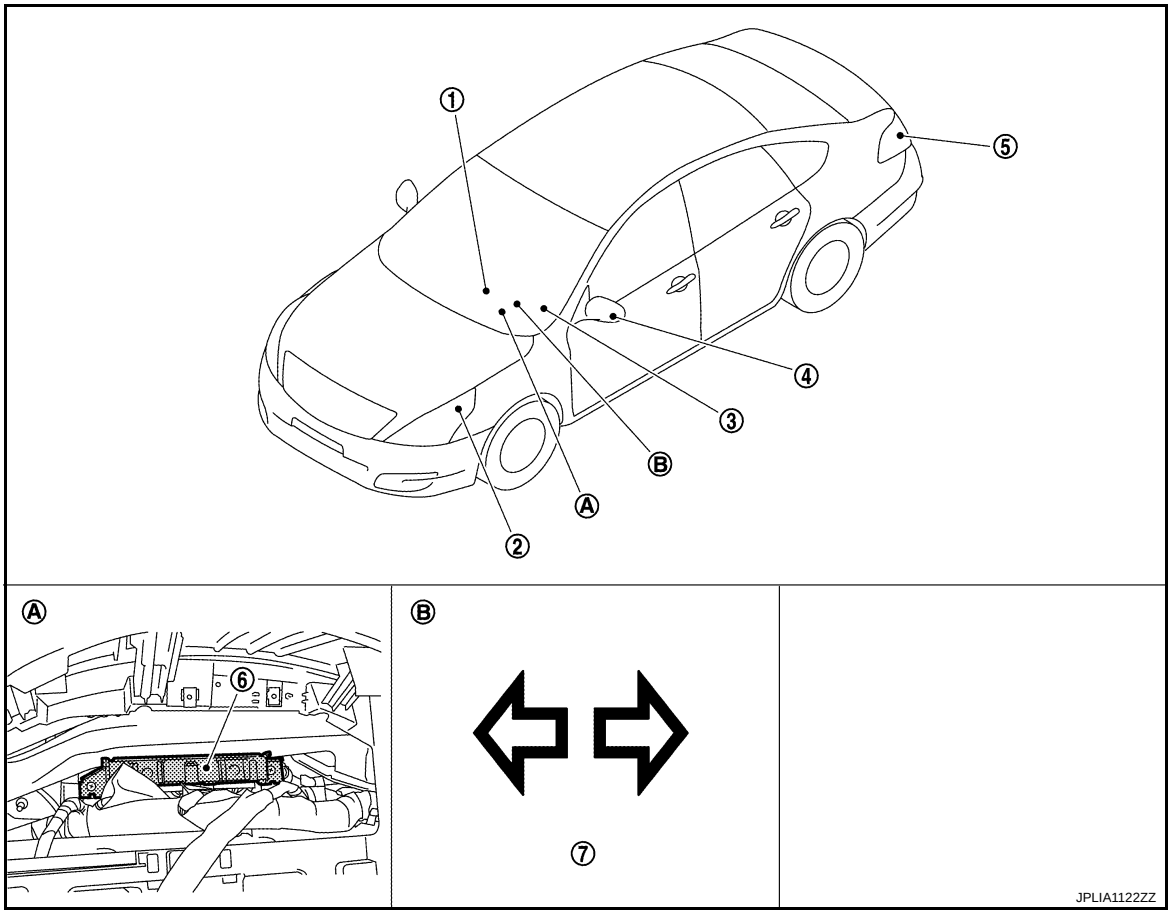
HIGH FLASHER OPERATION (FAIL-SAFE)

- BCM detects the turn signal lamp circuit status by the terminal current value.
- BCM increases the turn signal lamp blinking speed if the bulb or harness open is detected with the turn signal lamp operating.

NOTE:
The blinking speed is normal while operating the hazard warning lamp.

Component Parts Location

INFOID:0000000003894291



1. Hazard switch
2. Front turn signal lamp
3. Combination switch
4. Side turn signal lamp
5. Rear turn signal lamp
6. BCM
7. Turn signal indicator lamp

A. Behind the combination meter
B. On the combination meter

Component Description

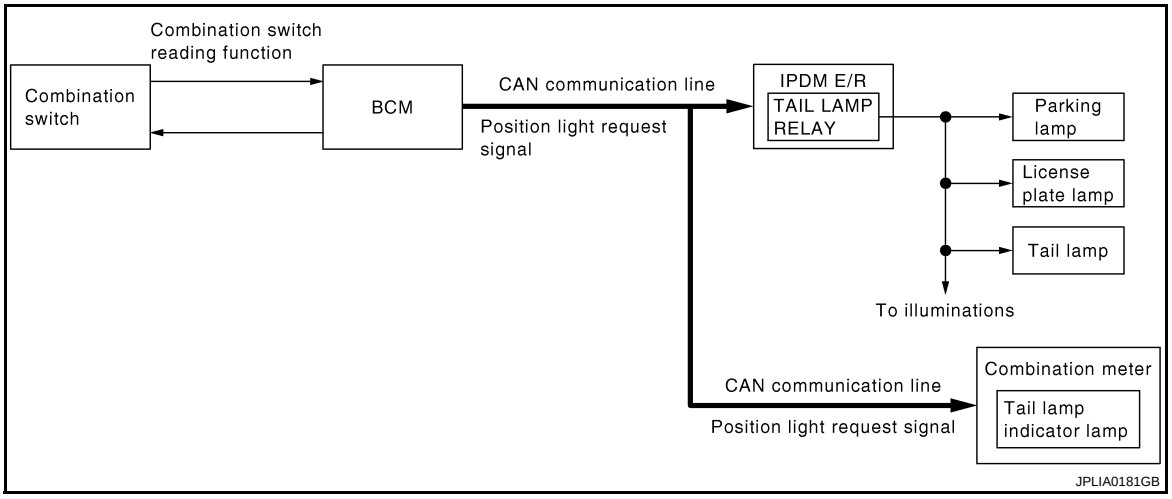
INFOID:0000000003894292

Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Judges the blinks of the turn signal lamp and the hazard warning lamp from each switch status. The applicable turn signal lamp blinks. • Requests the turn signal indicator lamp blink to the combination meter (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-8, "System Diagram".
Hazard switch	Inputs the hazard switch ON/OFF signal to BCM.
Combination meter (Turn signal indicator lamp & buzzer)	Blinks the turn signal indicator lamp and outputs the turn signal operating sound with integrated buzzer according to the request from BCM (with CAN communication).

PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM

System Diagram

INFOID:0000000003894293



System Description

INFOID:0000000003894294

OUTLINE

Parking, license plate and tail lamps are controlled by combination switch reading function and headlamp control function of BCM, and relay control function of IPDM E/R.

PARKING, LICENSE PLATE AND TAIL LAMPS OPERATION

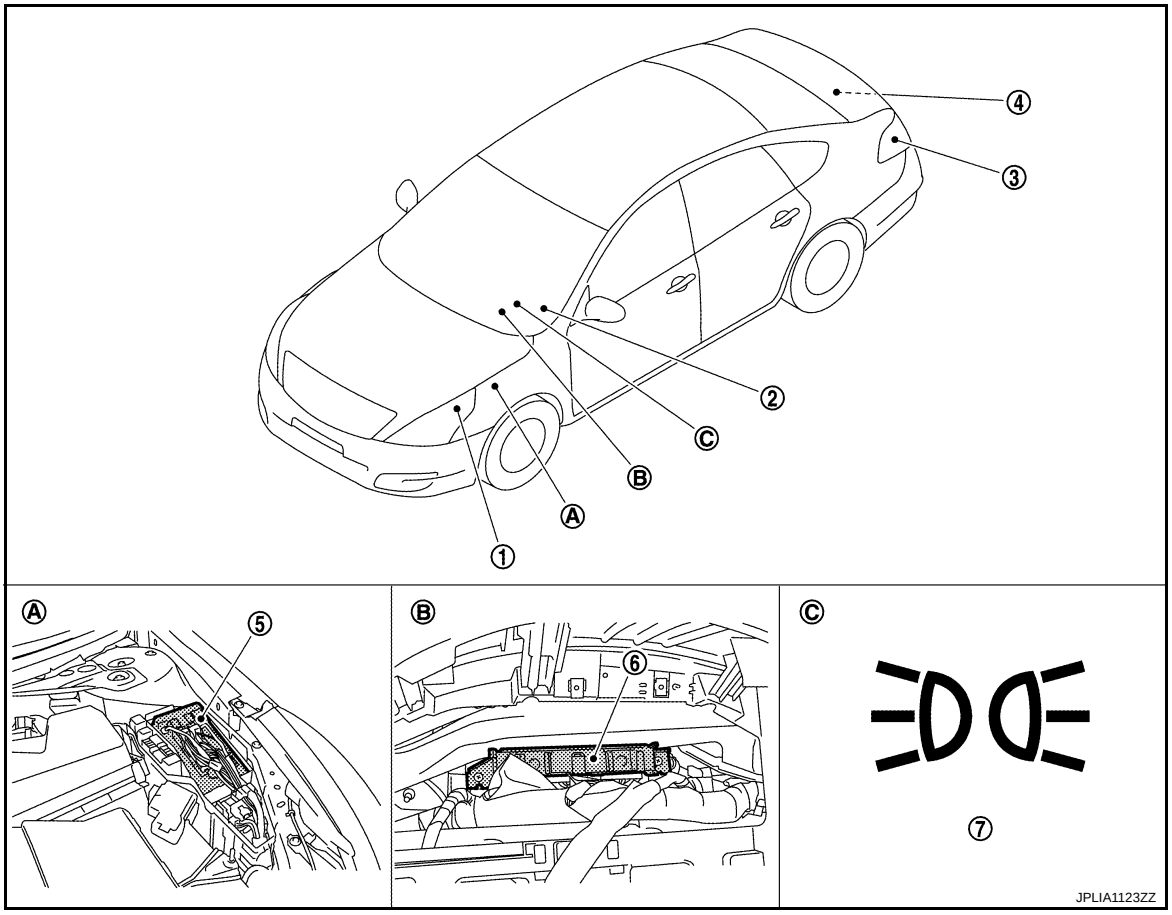
- BCM detects the combination switch condition by the combination switch reading function.
- BCM transmits the position light request signal to IPDM E/R and the combination meter with CAN communication according to the ON/OFF condition of the parking, license plate and tail lamps.

Parking, license plate and tail lamps ON condition
- Lighting switch 1ST
- Lighting switch 2ND
- Lighting switch AUTO (auto light function ON judgment)

- IPDM E/R turns the integrated tail lamp relay ON and turns the parking lamp, license plate and tail lamps ON according to the position light request signal.
- Combination meter turns the tail lamp indicator lamp ON according to the position light request signal.

Component Parts Location

INFOID:0000000003894295



1. Parking lamp
2. Combination switch
3. Tail lamp
4. License plate lamp
5. IPDM E/R
6. BCM
7. Tail lamp indicator lamp

A. Engine room (LH)
B. Behind the combination meter
C. On the combination meter

Component Description

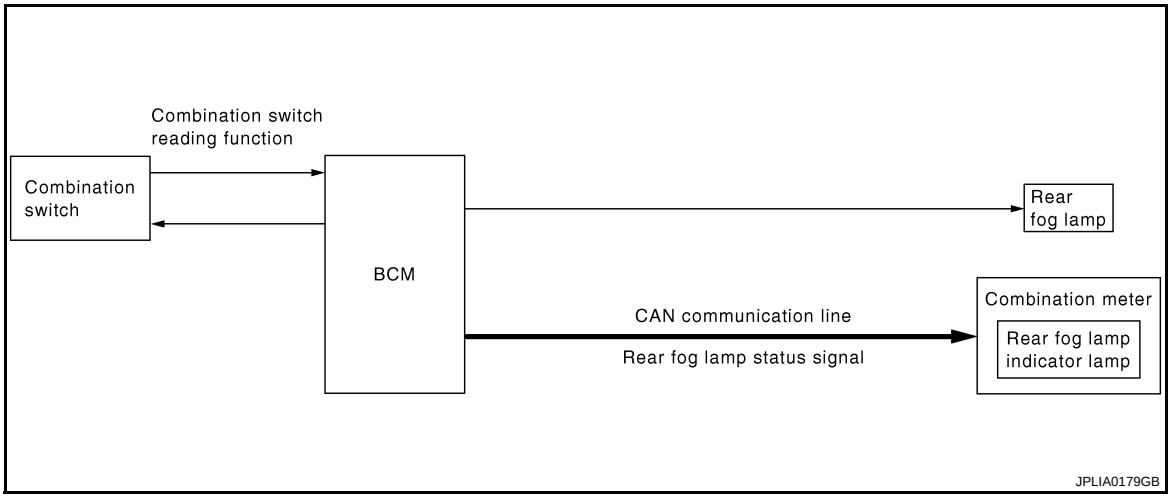
INFOID:0000000003894296

Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Judges the ON/OFF status of the parking, license plate and tail lamps according to the vehicle condition. - Requests the tail lamp relay ON to IPDM E/R (with CAN communication). - Requests the tail lamp indicator lamp ON to the combination meter (with CAN communication).
IPDM E/R	Controls the integrated relay and supplies voltage to the load according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-8, "System Diagram".
Combination meter (Tail lamp indicator lamp)	Turns the tail lamp indicator lamp ON according to the request from BCM (with CAN communication).

REAR FOG LAMP SYSTEM

System Diagram

INFOID:0000000003894297



System Description

INFOID:0000000003894298

OUTLINE

Rear fog lamp is controlled with the combination switch reading function and the rear fog lamp control function of BCM.

REAR FOG LAMP OPERATION

- BCM detects the condition of the combination switch by the combination switch reading function.
- BCM supplies voltage to rear fog lamp according to the rear fog lamp ON condition.

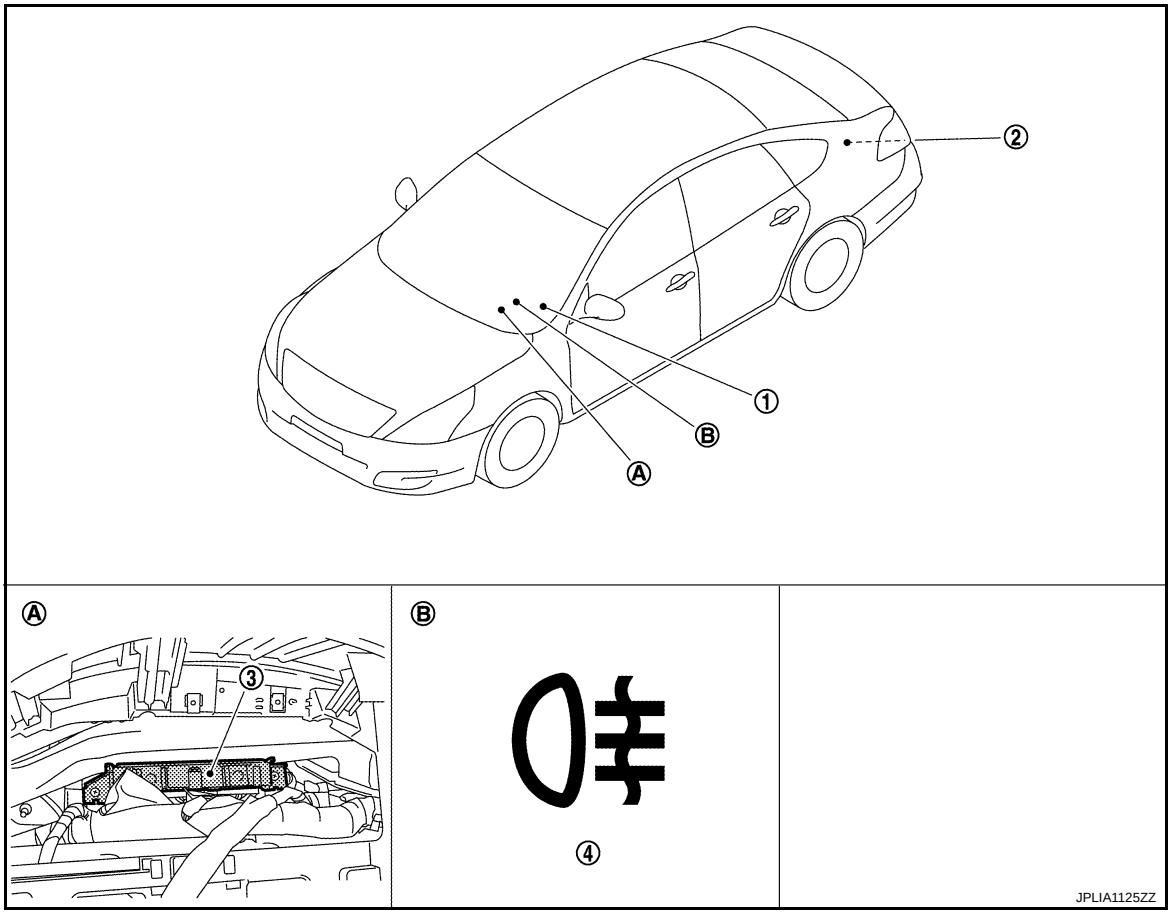
Rear fog lamp ON condition
- Rear fog lamp switch signal is input with front fog lamp ON and rear fog lamp OFF

Rear fog lamp switch ON with any of following condition.
- Lighting switch 2ND
- Lighting switch 1ST, and front fog lamp switch ON

- BCM transmits the rear fog lamp status signal to the combination meter with CAN communication.
- Combination meter turns the rear fog lamp indicator lamp ON according to the rear fog lamp status signal.

Component Parts Location

INFOID:0000000003894299



1. Combination switch
2. Rear fog lamp
3. BCM
4. Rear fog lamp indicator lamp

A. Behind the combination meter
B. On the combination meter

Component Description

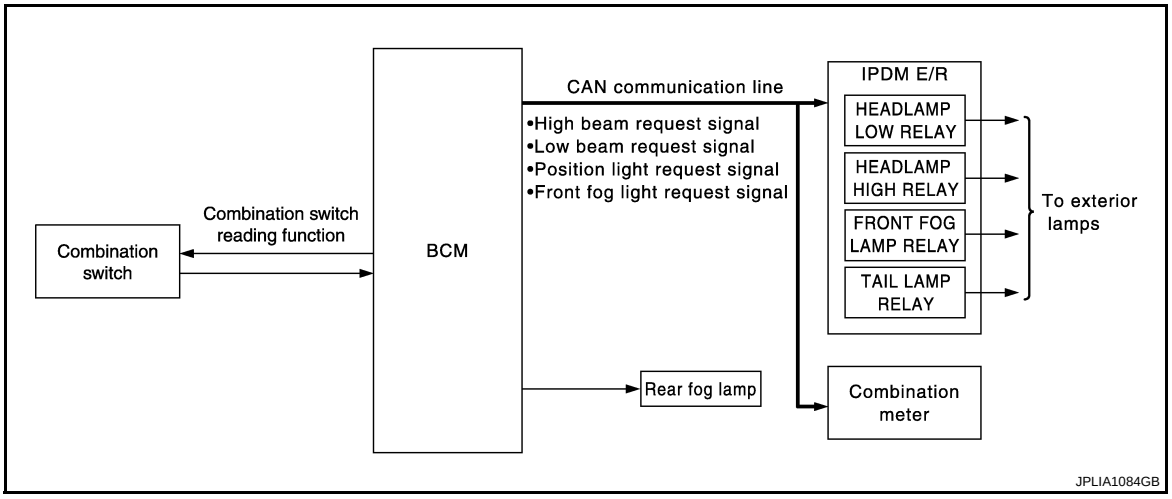
INFOID:0000000003894300

Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Judges that the rear fog lamp is turned ON according to the vehicle status - Supplies voltage to the rear fog lamp - Requests the rear fog lamp indicator lamp ON to the combination meter (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-8, "System Diagram".
Combination meter (Rear fog lamp indicator lamp)	Turns the rear fog lamp indicator lamp ON according to the request from BCM (with CAN communication).

EXTERIOR LAMP BATTERY SAVER SYSTEM

System Diagram

INFOID:0000000003894301



System Description

INFOID:0000000003894302

OUTLINE

- Exterior lamp battery saver system is controlled by each function of BCM and IPDM E/R.

Control by BCM

- Combination switch reading function
- Headlamp control function
- Exterior lamp battery saver function

Control by IPDM E/R

- Relay control function
- BCM turns the exterior lamp* OFF after a period of time to prevent the battery from over-discharge when the ignition switch is turned OFF with the exterior lamp ON.

*: Headlamp (LO/HI), parking lamp, tail lamp, license plate lamp, front fog lamp and rear fog lamp.

EXTERIOR LAMP BATTERY SAVER ACTIVATION

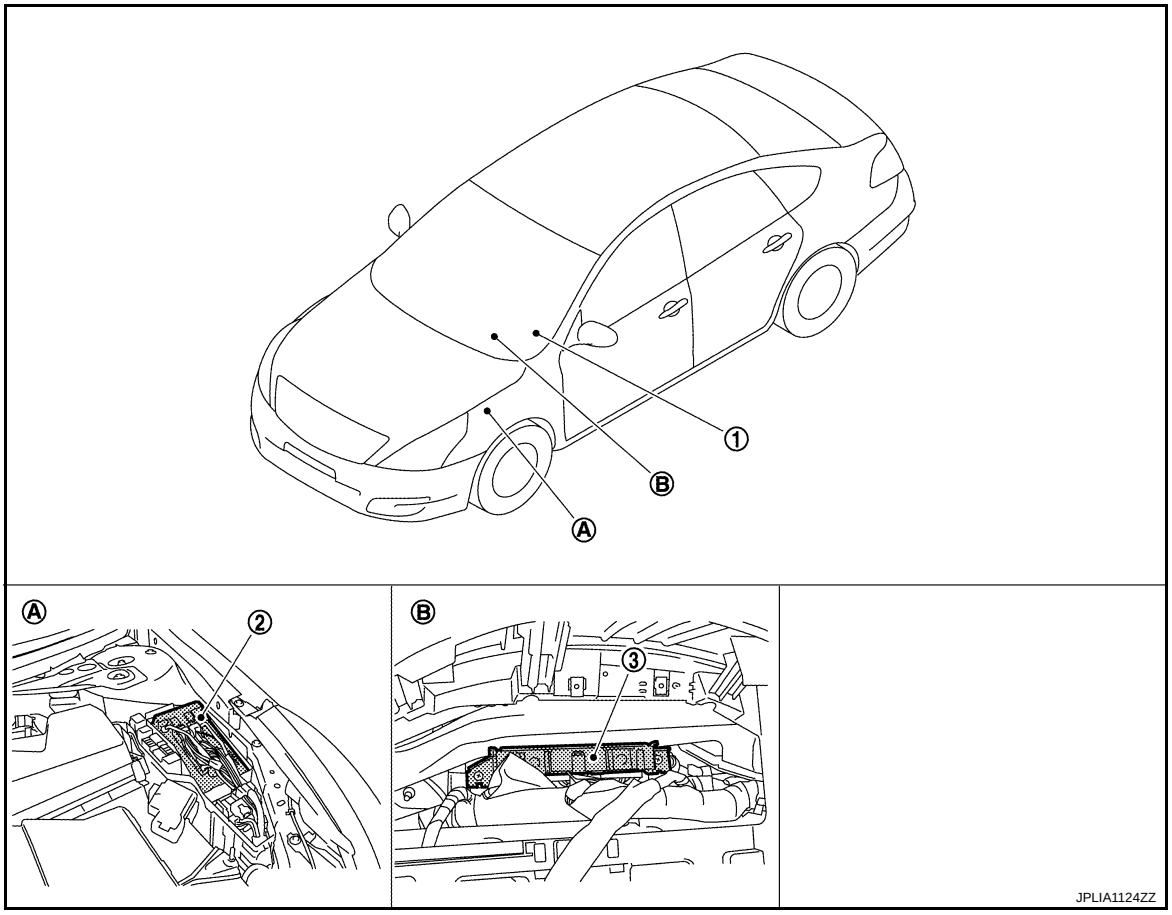
BCM activates the timer and turns the exterior lamp OFF 5 minutes after the ignition switch is turned from ON → OFF with the exterior lamps ON.

NOTE:

- Headlamp control function turns the exterior lamps ON normally when the ignition switch is turned ACC or the engine started (both before and after the exterior lamp battery saver is turned OFF).
- The timer starts at the time that the lighting switch is turned from OFF → 1ST or 2ND with the exterior lamp OFF.

Component Parts Location

INFOID:0000000003894303



1. Combination switch
2. IPDM E/R
3. BCM

A. Engine room (LH)
B. Behind the combination meter

Component Description

INFOID:0000000003894304

Part	Description
BCM	• Detects each switch condition by the combination switch reading function. • Activates the battery saver to turn the exterior lamps OFF according to the vehicle condition. - Requests each relay OFF to IPDM E/R (with CAN communication).
IPDM E/R	Controls the integrated relay according to the request from BCM (with CAN communication).
Combination switch (Lighting & turn signal switch)	Refer to BCS-8, "System Diagram".

DIAGNOSIS SYSTEM (BCM)
COMMON ITEM
COMMON ITEM : CONSULT-III Function (BCM - COMMON ITEM)

INFOID:0000000003894306

APPLICATION ITEM
CONSULT-III performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description
Work Support	Changes the setting for each system function.
Self Diagnostic Result	Displays the diagnosis results judged by BCM.
CAN Diag Support Monitor	Monitors the reception status of CAN communication viewed from BCM. Refer to CONSULT-III operation manual.
Data Monitor	The BCM input/output signals are displayed.
Active Test	The signals used to activate each device are forcibly supplied from BCM.
Ecu Identification	The BCM part number is displayed.
Configuration	• Read and save the vehicle specification. • Write the vehicle specification when replacing BCM.

SYSTEM APPLICATION
BCM can perform the following functions for each system.

NOTE:

It can perform the diagnosis modes except the following for all sub system selection items.

×: Applicable item

System	Sub system selection item	Diagnosis mode		
		Work Support	Data Monitor	Active Test
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	×
Warning chime	BUZZER		×	×
Interior room lamp timer	INT LAMP	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER	×	×	×
—	AIR CONDITONER*			
• Intelligent Key system • Engine start system	INTELLIGENT KEY	×	×	×
Combination switch	COMB SW		×	
Body control system	BCM	×		
NVIS - NATS	IMMU		×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Trunk lid opener system	TRUNK		×	×
Vehicle security system	THEFT ALM	×	×	×
—	RETAINED PWR*		×	
Signal buffer system	SIGNAL BUFFER		×	×
—	TPMS (AIR PRESSURE MONITOR)*	×	×	×

NOTE:

*: This item is displayed, but is not used.

FREEZE FRAME DATA (FFD) AND IGN COUNTER

Freeze Frame Data

The BCM records the following condition at the moment a particular DTC is detected.
- Vehicle Speed
- Odo/Trip Meter
- Vehicle Condition (BCM detected condition)

CONSULT screen terms	Description
SLEEP>LOCK	While turning BCM status from low power consumption mode to normal mode (Power supply position is “LOCK”.)
SLEEP>OFF	While turning BCM status from low power consumption mode to normal mode (Power supply position is “OFF”.)
LOCK>ACC	While turning power supply position from “LOCK” to “ACC”
ACC>ON	While turning power supply position from “ACC” to “IGN”
RUN>ACC	While turning power supply position from “RUN” to “ACC” (Vehicle is stopping and selector lever is except P position.)
CRANK>RUN	While turning power supply position from “CRANKING” to “RUN” (From cranking up the engine to run it)
RUN>URGENT	While turning power supply position from “RUN“ to “ACC” (Emergency stop operation)
ACC>OFF	While turning power supply position from “ACC” to “OFF”
OFF>LOCK	While turning power supply position from “OFF” to “LOCK”
OFF>ACC	While turning power supply position from “OFF” to “ACC”
ON>CRANK	While turning power supply position from “IGN” to “CRANKING”
OFF>SLEEP	While turning BCM status from normal mode (Power supply position is “OFF”.) to low power consumption mode
LOCK>SLEEP	While turning BCM status from normal mode (Power supply position is “LOCK”.) to low power consumption mode
LOCK	Power supply position is “LOCK” (Ignition switch OFF with steering is locked.)
OFF	Power supply position is “OFF” (Ignition switch OFF with steering is unlocked.)
ACC	Power supply position is “ACC” (Ignition switch ACC)
ON	Power supply position is “IGN” (Ignition switch ON with engine stopped)
ENGINE RUN	Power supply position is “RUN” (Ignition switch ON with engine running)
CRANKING	Power supply position is “CRANKING” (At engine cranking)

IGN Counter

IGN counter indicates the number of times that ignition switch is turned ON after DTC is detected.
- The number is 0 when a malfunction is detected now.
- The number increases like 1 → 2 → 3...38 → 39 after returning to the normal condition whenever ignition switch OFF → ON.
- The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.

HEADLAMP

HEADLAMP : CONSULT-III Function (BCM - HEAD LAMP)

INFOID:0000000003894308

WORK SUPPORT

Service item	Setting item	Setting
BATTERY SAVER SET	On*	With the exterior lamp battery saver function
	Off	Without the exterior lamp battery saver function

Service item	Setting item	Setting	
ILL DELAY SET	MODE 1*	45 sec.	Sets delay timer function timer operation time. (All doors closed)
	MODE 2	Without the function	
	MODE 3	30 sec.	
	MODE 4	60 sec.	
	MODE 5	90 sec.	
	MODE 6	120 sec.	
	MODE 7	150 sec.	
	MODE 8	180 sec.	
CUSTOM A/LIGHT SETTING	MODE 1*	Normal	
	MODE 2	More sensitive setting than normal setting (Turns ON earlier than normal operation.)	
	MODE 3	More sensitive setting than MODE 2 (Turns ON earlier than MODE 2.)	
	MODE 4	Less sensitive setting than normal setting (Turns ON later than normal operation.)	

*: Factory setting

DATA MONITOR

Monitor item [Unit]	Description
PUSH SW [On/Off]	The switch status input from push-button ignition switch
ENGINE STATE [Stop/Stall/Crank/Run]	The engine status received from ECM with CAN communication
VEH SPEED 1 [km/h]	The value of the vehicle speed received from combination meter with CAN communication
KEY SW-SLOT [On/Off]	Key switch status input from key slot
TURN SIGNAL R [On/Off]	Each switch status that BCM detects from the combination switch reading function
TURN SIGNAL L [On/Off]	
TAIL LAMP SW [On/Off]	
HI BEAM SW [On/Off]	
HEAD LAMP SW1 [On/Off]	
HEAD LAMP SW2 [On/Off]	
PASSING SW [On/Off]	
AUTO LIGHT SW [On/Off]	
FR FOG SW [On/Off]	
RR FOG SW [On/Off]	
DOOR SW-DR [On/Off]	The switch status input from front door switch (driver side)
DOOR SW-AS [On/Off]	The switch status input from front door switch (passenger side)

Monitor item [Unit]	Description
DOOR SW-RR [On/Off]	The switch status input from rear door switch RH
DOOR SW- RL [On/Off]	The switch status input from rear door switch LH
DOOR SW-BK [On/Off]	**NOTE:** The item is indicated, but not monitored.
OPTICAL SENSOR [V]	The value of exterior brightness voltage input from the optical sensor

ACTIVE TEST

Test item	Operation	Description
TAIL LAMP	On	Transmits the position light request signal to IPDM E/R with CAN communication to turn the tail lamp ON.
	Off	Stops the position light request signal transmission.
HEAD LAMP	Hi	Transmits the high beam request signal with CAN communication to turn the headlamp (HI).
	Low	Transmits the low beam request signal with CAN communication to turn the headlamp (LO).
	Off	Stops the high & low beam request signal transmission.
FR FOG LAMP	On	Transmits the front fog lights request signal to IPDM E/R with CAN communication to turn the front fog lamp ON.
	Off	Stops the front fog lights request signal transmission.
RR FOG LAMP	On	• Outputs the voltage to turn the rear fog lamp ON. • Transmits the rear fog lamp status signal to the combination meter with CAN communication to turn the rear fog lamp indicator lamp ON.
	Off	• Stops the voltage to turn the rear fog lamp OFF. • Stops the rear fog lamp status signal transmission.
DAYTIME RUNNING LIGHT	On	**NOTE:** The item is indicated, but cannot be tested.
	Off	
CORNERING LAMP	RH	**NOTE:** The item is indicated, but cannot be tested.
	LH	
	Off	
ILL DIM SIGNAL	On	**NOTE:** The item is indicated, but cannot be tested.
	Off	

FLASHER

FLASHER : CONSULT-III Function (BCM - FLASHER)

INFOID:0000000003894309

WORK SUPPORT

Service item	Setting item	Setting	
HAZARD ANSWER BACK	Lock Only*	With locking only	Sets the hazard warning lamp answer back function when the door is lock/unlock with the request switch or the key fob.
	Unlk Only	With unlocking only	
	Lock/Unlk	With locking/unlocking	
	Off	Without the function	

*: Factory setting

DATA MONITOR

Monitor item [Unit]	Description
REQ SW-DR [On/Off]	The switch status input from the request switch (driver side)
REQ SW-AS [On/Off]	The switch status input from the request switch (passenger side)
PUSH SW [On/Off]	The switch status input from the push-button ignition switch
TURN SIGNAL R [On/Off]	Each switch status that BCM detects from the combination switch reading function
TURN SIGNAL L [On/Off]	
HAZARD SW [On/Off]	The switch status input from the hazard switch
RKE-LOCK [On/Off]	Lock signal status received from the remote keyless entry receiver
RKE-UNLOCK [On/Off]	Unlock signal status received from the remote keyless entry receiver
RKE-PANIC [On/Off]	Panic alarm signal status received from the remote keyless entry receiver

ACTIVE TEST

Test item	Operation	Description
FLASHER	RH	Outputs the voltage to blink the right side turn signal lamps.
	LH	Outputs the voltage to blink the left side turn signal lamps.
	Off	Stops the voltage to turn the turn signal lamps OFF.

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:0000000003894312

AUTO ACTIVE TEST

Description

In auto active test mode, the IPDM E/R sends a drive signal to the following systems to check their operation.

- Oil pressure warning lamp
- Front wiper (LO, HI)
- Parking lamps
- License plate lamps
- Tail lamps
- Front fog lamps
- Headlamps (LO, HI)
- A/C compressor (magnet clutch)
- Cooling fan

Operation Procedure

1. Close the hood and lift the wiper arms from the windshield. (Prevent windshield damage due to wiper operation)
   NOTE:
   When auto active test is performed with hood opened, sprinkle water on windshield beforehand.
2. Turn ignition switch OFF.
3. Turn the ignition switch ON, and within 20 seconds, press the driver door switch 10 times. Then turn the ignition switch OFF.
   CAUTION:
   Close passenger door.
4. Turn the ignition switch ON within 10 seconds. After that the horn sounds once and the auto active test starts.
5. The oil pressure warning lamp starts blinking when the auto active test starts.
6. After a series of the following operations is repeated 3 times, auto active test is completed.

NOTE:
When auto active test mode has to be cancelled halfway through test, turn ignition switch OFF.

CAUTION:

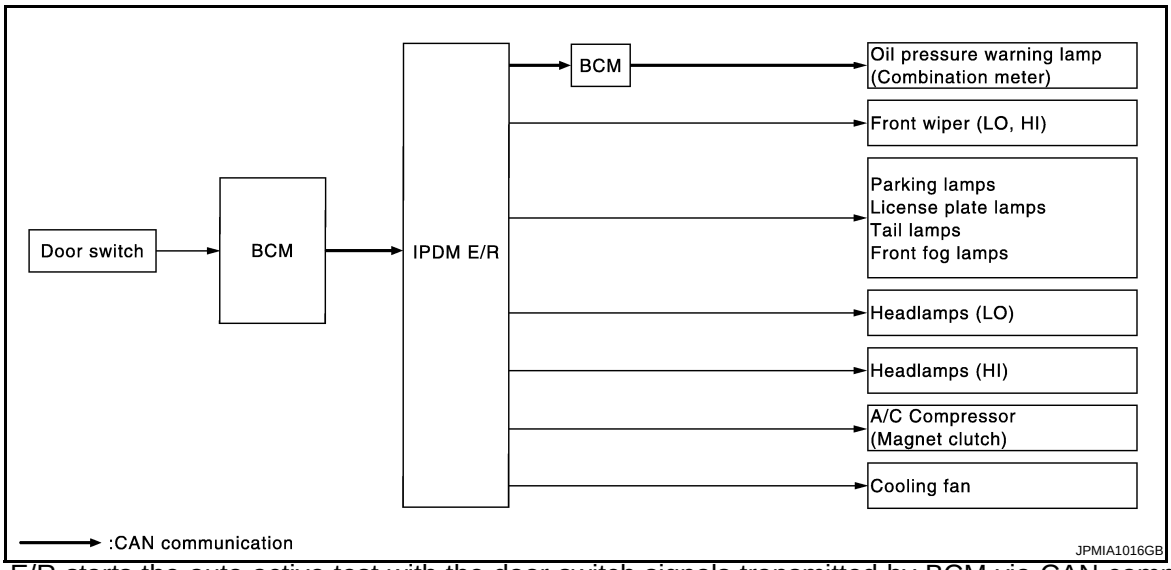
- **If auto active test mode cannot be actuated, check door switch system. Refer to DLK-57, "Component Function Check".**
- **Do not start the engine.**

Inspection in Auto Active Test Mode

When auto active test mode is actuated, the following 5 steps are repeated 3 times.

Operation sequence	Inspection location	Operation
A	Oil pressure warning lamp	Blinks continuously during operation of auto active test
1	Front wiper	LO for 5 seconds → HI for 5 seconds
2	• Parking lamps • License plate lamps • Tail lamps • Front fog lamps	10 seconds
3	Headlamps	LO ⇔ HI 5 times
4	A/C compressor (magnet clutch)	ON ⇔ OFF 5 times
5	Cooling fan	LO for 5 seconds → MID for 3 seconds → HI for 2 seconds

Concept of auto active test



- IPDM E/R starts the auto active test with the door switch signals transmitted by BCM via CAN communication. Therefore, the CAN communication line between IPDM E/R and BCM is considered normal if the auto active test starts successfully.
- The auto active test facilitates troubleshooting if any systems controlled by IPDM E/R cannot be operated.

Diagnosis chart in auto active test mode

Symptom	Inspection contents		Possible cause
Any of the following components do not operate • Parking lamps • License plate lamps • Tail lamps • Front fog lamps • Headlamp (HI, LO) • Front wiper	Perform auto active test. Does the applicable system operate?	YES	BCM signal input circuit
		NO	• Lamp or motor • Lamp or motor ground circuit • Harness or connector between IPDM E/R and applicable system • IPDM E/R
A/C compressor does not operate	Perform auto active test. Does the magnet clutch operate?	YES	• A/C amp. signal input circuit • CAN communication signal between A/C amp. and ECM • CAN communication signal between ECM and IPDM E/R
		NO	• Magnet clutch • Harness or connector between IPDM E/R and magnet clutch • IPDM E/R
Oil pressure warning lamp does not operate	Perform auto active test. Does the oil pressure warning lamp blink?	YES	• Harness or connector between IPDM E/R and oil pressure switch • Oil pressure switch • IPDM E/R
		NO	• CAN communication signal between IPDM E/R and BCM • CAN communication signal between BCM and combination meter • Combination meter

Symptom	Inspection contents		Possible cause
Cooling fan does not operate	Perform auto active test. Does the cooling fan operate?	YES	• ECM signal input circuit • CAN communication signal between ECM and IPDM E/R
		NO	• Harness or connector between IPDM E/R and cooling fan motor • Harness or connector between IPDM E/R and cooling fan relay • Cooling fan motor • Cooling fan relay • IPDM E/R

CONSULT-III Function (IPDM E/R)

INFOID:0000000003894313

APPLICATION ITEM

CONSULT-III performs the following functions via CAN communication with IPDM E/R.

Diagnosis mode	Description
Ecu Identification	Allows confirmation of IPDM E/R part number.
Self Diagnostic Result	Displays the diagnosis results judged by IPDM E/R.
Data Monitor	Displays the real-time input/output data from IPDM E/R input/output data.
Active Test	IPDM E/R can provide a drive signal to electronic components to check their operations.
CAN Diag Support Monitor	The results of transmit/receive diagnosis of CAN communication can be read.

SELF DIAGNOSTIC RESULT

Refer to EXL-155, "DTC Index".

DATA MONITOR

Monitor item

Monitor Item [Unit]	MAIN SIGNALS	Description
MOTOR FAN REQ [1/2/3/4]	×	Displays the value of the cooling fan speed request signal received from ECM via CAN communication.
AC COMP REQ [Off/On]	×	Displays the status of the A/C compressor request signal received from ECM via CAN communication.
TAIL&CLR REQ [Off/On]	×	Displays the status of the position light request signal received from BCM via CAN communication.
HL LO REQ [Off/On]	×	Displays the status of the low beam request signal received from BCM via CAN communication.
HL HI REQ [Off/On]	×	Displays the status of the high beam request signal received from BCM via CAN communication.
FR FOG REQ [Off/On]	×	Displays the status of the front fog light request signal received from BCM via CAN communication.
FR WIP REQ [Stop/1LOW/Low/Hi]	×	Displays the status of the front wiper request signal received from BCM via CAN communication.
WIP AUTO STOP [STOP P/ACT P]	×	Displays the status of the front wiper auto stop signal judged by IPDM E/R.
WIP PROT [Off/BLOCK]	×	Displays the status of the front wiper fail-safe operation judged by IPDM E/R.
IGN RLY1 -REQ [Off/On]		Displays the status of the ignition switch ON signal received from BCM via CAN communication.

Monitor Item [Unit]	MAIN SIGNALS	Description
IGN RLY [Off/On]	×	Displays the status of the ignition relay judged by IPDM E/R.
PUSH SW [Off/On]		Displays the status of the push-button ignition switch judged by IPDM E/R.
INTER/NP SW [Off/On]		Displays the status of the shift position judged by IPDM E/R.
ST RLY CONT [Off/On]		Displays the status of the starter relay status signal received from BCM via CAN communication.
IHBT RLY -REQ [Off/On]		Displays the status of the starter control relay signal received from BCM via CAN communication.
ST/INHI RLY [Off/ ST /INHI/UNKWN]		Displays the status of the starter relay and starter control relay judged by IPDM E/R.
DETENT SW [Off/On]		Displays the status of the control device (detention switch) judged by IPDM E/R.
S/L RLY -REQ [Off/On]		Displays the status of the steering lock relay signal received from BCM via CAN communication.
S/L STATE [LOCK/UNLOCK/UNKWN]		Displays the status of the steering lock judged by IPDM E/R.
DTRL REQ [Off]		**NOTE:** The item is indicated, but not monitored.
OIL P SW [Open/Close]		Displays the status of the oil pressure switch judged by IPDM E/R.
HOOD SW [Off/On]		Displays the status of the hood switch judged by IPDM E/R.
HL WASHER REQ [Off]		Display the status of the headlamp washer request signal received from BCM via CAN communication.
THFT HRN REQ [Off/On]		Displays the status of the theft warning horn request signal received from BCM via CAN communication.
HORN CHIRP [Off/On]		Displays the status of the horn reminder signal received from BCM via CAN communication.
CRNRNG LMP REQ [Off]		**NOTE:** The item is indicated, but not monitored.

ACTIVE TEST

Test item

Test item	Operation	Description
CORNERING LAMP	Off	**NOTE:** The item is indicated, but cannot be tested.
	LH	
	RH	
HORN	On	Operates horn relay for 20 ms.
FRONT WIPER	Off	OFF
	Lo	Operates the front wiper relay.
	Hi	Operates the front wiper relay and front wiper high relay.
MOTOR FAN	1	OFF
	2	Operates the cooling fan relay-1.
	3	Operates the cooling fan relay-2.
	4	Operates the cooling fan relay-2 and cooling fan relay-3.
HEAD LAMP WASHER	On	Operates the headlamp washer relay for 1 s.

Test item	Operation	Description
EXTERNAL LAMPS	Off	OFF
	TAIL	Operates the tail lamp relay.
	Lo	Operates the headlamp low relay.
	Hi	Operates the headlamp low relay and ON/OFF the headlamp high relay at 1 second intervals.
	Fog	Operates the front fog lamp relay.

COMPONENT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT

BCM (BODY CONTROL MODULE)

BCM (BODY CONTROL MODULE) : Diagnosis Procedure

INFOID:0000000003894317

1.CHECK FUSE AND FUSIBLE LINK

Check that the following fuse and fusible link are not blown.

Signal name	Fuse and fusible link No.
Battery power supply	I
	10

Is the fuse fusing?

YES >> Replace the blown fuse or fusible link after repairing the affected circuit if a fuse or fusible link is blown.
NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

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

Terminals			Voltage (Approx.)
(+)		(–)	
BCM		Ground	
Connector	Terminal		
M118	1		Battery voltage
M119	11		

Is the measurement value normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M119	13		Existed

Does continuity exist?

YES >> INSPECTION END
NO >> Repair harness or connector.

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) : Diagnosis Procedure

INFOID:0000000003894318

1.CHECK FUSES AND FUSIBLE LINK

Check that the following IPDM E/R fuses or fusible links are not blown.

Signal name	Fuses and fusible link No.
Battery power supply	E
	50
	51

Is the fuse fusing?

YES >> Replace the blown fuse or fusible link after repairing the affected circuit if a fuse or fusible link is blown.
NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check voltage between IPDM E/R harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
IPDM E/R			
Connector	Terminal	Ground	
E9	1		Battery voltage

Is the measurement value normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK GROUND CIRCUIT

Check continuity between IPDM E/R harness connectors and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E10	12		Existed
E11	41		

Does continuity exist?

YES >> INSPECTION END
NO >> Repair harness or connector.

EXTERIOR LAMP FUSE

Description

INFOID:0000000003773678

Fuse list

Unit	Location	Fuse No.	Capacity
Headlamp HI (LH)	IPDM E/R	#54	10 A
Headlamp HI (RH)	IPDM E/R	#55	10 A
Headlamp LO (LH)	IPDM E/R	#56	15 A
Headlamp LO (RH)	IPDM E/R	#57	15 A
Front fog lamp	IPDM E/R	#58	15 A
Parking lamp	IPDM E/R	#52	10 A
• Tail lamp • License plate lamp • Each illumination	IPDM E/R	#53	10 A
Stop lamp	FUSE BLOCK (J/B)	#7	10 A
Back-up lamp	FUSE BLOCK (J/B)	#4	10 A

Diagnosis Procedure

INFOID:0000000003773679

1.CHECK FUSE

Check that the following fuses are not fusing.

Unit	Location	Fuse No.	Capacity
Headlamp HI (LH)	IPDM E/R	#54	10 A
Headlamp HI (RH)	IPDM E/R	#55	10 A
Headlamp LO (LH)	IPDM E/R	#56	15 A
Headlamp LO (RH)	IPDM E/R	#57	15 A
Front fog lamp	IPDM E/R	#58	15 A
Parking lamp	IPDM E/R	#52	10 A
• Tail lamp • License plate lamp • Each illumination	IPDM E/R	#53	10 A
Stop lamp	FUSE BLOCK (J/B)	#7	10 A
Back-up lamp	FUSE BLOCK (J/B)	#4	10 A

Is the fuse fusing?

YES >> Repair the applicable circuit. And then replace the fuse.
NO >> The fuse is normal.

HEADLAMP (HI) CIRCUIT

Component Function Check

INFOID:0000000003773680

1.CHECK HEADLAMP (HI) OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-11, "Diagnosis Description".
2. Check that the headlamp switches to the high beam.

CONSULT-III ACTIVE TEST
1. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
2. With operating the test items, check that the headlamp (HI) is turned ON.

Hi : Headlamp (HI) ON
Off : Headlamp (HI) OFF

NOTE:
ON/OFF is repeated 1 second each.

Is the headlamp (HI) turned ON?

YES >> Headlamp (HI) circuit is normal.
NO >> Refer to EXL-227, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000003773681

1.CHECK HEADLAMP (HI) OUTPUT VOLTAGE

CONSULT-III ACTIVE TEST
1. Turn the ignition switch OFF.
2. Disconnect the headlamp high connector.
3. Turn the ignition switch ON.
4. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
5. With operating the test items, check the voltage between the IPDM E/R harness connector and the ground.

Terminals				Test item	Voltage (Approx.)
(+)			(–)		
IPDM E/R				EXTERNAL LAMPS	
Connector		Terminal			
RH	E345	89	Ground	Hi	Battery voltage
				Off	0 V
LH		90		Hi	Battery voltage
				Off	0 V

Is the measurement value normal?

YES >> GO TO 2.
NO >> GO TO 3.

2.CHECK HEADLAMP (HI) OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between the IPDM E/R harness connector and the headlamp high harness connector.

IPDM E/R			Headlamp high		Continuity
Connector		Terminal	Connector	Terminal	
RH	E345	89	E317	1	Existed
LH		90	E316	1	

Does continuity exist?

YES >> GO TO 5.
NO >> Repair the harnesses or connectors.

3.CHECK HEADLAMP (HI) FUSE

1. Turn the ignition switch OFF.
2. Check that the following fuses are not fusing.

Unit	Location	Fuse No.	Capacity
Headlamp HI (RH)	IPDM E/R	#55	10 A
Headlamp HI (LH)	IPDM E/R	#54	10 A

Is the fuse fusing?

YES >> GO TO 4.
NO >> Replace IPDM E/R.

4.CHECK HEADLAMP HIGH (HI) SHORT CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between the IPDM E/R harness connector terminal and the ground.

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E345	89		Not existed
LH		90		

Does continuity exist?

YES >> Repair the harnesses or connectors. And then replace the fuse.
NO >> Replace the fuse. (Replace IPDM E/R if the fuse is fusing again.)

5.CHECK HEADLAMP (HI) GROUND OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the headlamp high connector.
3. Check continuity between the headlamp high harness connector and ground.

Headlamp high			Ground	Continuity
Connector		Terminal		
RH	E317	2		Existed
LH	E316	2		

Does continuity exist?

YES >> Replace the headlamp (HI) bulb. (Bulb socket is abnormally.)
NO >> Repair the harnesses or connectors.

HEADLAMP (LO) CIRCUIT

Component Function Check

INFOID:0000000003773682

1.CHECK HEADLAMP (LO) OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-11, "Diagnosis Description".
2. Check that the headlamp is turned ON.

CONSULT-III ACTIVE TEST
1. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
2. With operating the test items, check that the headlamp (LO) is turned ON.

Lo : Headlamp (LO) ON
Off : Headlamp (LO) OFF

Is the headlamp (LO) turned ON?

YES >> Headlamp (LO) is normal.
NO >> Refer to EXL-229, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000003773683

1.CHECK HEADLAMP (LO) OUTPUT VOLTAGE

CONSULT-III ACTIVE TEST
1. Turn the ignition switch OFF.
2. Disconnect the front combination lamp connector.
3. Turn the ignition switch ON.
4. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
5. With operating the test items, check the voltage between the IPDM E/R harness connector and the ground.

Terminals				Test item	Voltage (Approx.)
(+)			(–)		
IPDM E/R			Ground	EXTERNAL LAMPS	
Connector		Terminal			
RH	E345	83		Lo	Battery voltage
				Off	0 V
LH		84		Lo	Battery voltage
				Off	0 V

Is the measurement value normal?

YES >> GO TO 2.
NO >> GO TO 3.

2.CHECK HEADLAMP (LO) OPEN CIRCUIT

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

IPDM E/R			Front combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E345	83	E319	3	Existed
LH		84	E318	3	

Does continuity exist?

YES >> GO TO 5.
NO >> Repair the harnesses or connectors.

3.CHECK HEADLAMP (LO) FUSE

1. Turn the ignition switch OFF.
2. Check that the following fuses are not fusing.

Unit	Lotion	Fuse No.	Capacity
Headlamp LO (RH)	IPDM E/R	#57	15 A
Headlamp LO (LH)	IPDM E/R	#56	15 A

Is the fuse fusing?

YES >> GO TO 4.
NO >> Replace IPDM E/R.

4.CHECK HEADLAMP (LO) SHORT CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between the IPDM E/R harness connector and the ground.

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E345	83		Not existed
LH		84		

Does continuity exist?

YES >> Repair the harnesses or connectors. And then replace the fuse.
NO >> Replace the fuse. (Replace IPDM E/R if the fuse is fusing again.)

5.CHECK HEADLAMP (LO) GROUND OPEN CIRCUIT

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

Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E319	4		Existed
LH	E318	4		

Does continuity exist?

YES >> Replace the headlamp (LO) bulb. (Bulb socket is abnormally.)
NO >> Repair the harnesses or connectors.

FRONT FOG LAMP CIRCUIT

Component Function Check

INFOID:0000000003894319

1.CHECK FRONT FOG LAMP OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-11, "Diagnosis Description".
2. Check that the front fog lamp is turned ON.

CONSULT-III ACTIVE TEST
1. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
2. With operating the test items, check that the front fog lamp is turned ON.

Fog : Front fog lamp ON
Off : Front fog lamp OFF

Is the front fog lamp turned ON?

YES >> Front fog lamp circuit is normal.
NO >> Refer to EXL-231, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000003894320

1.CHECK FRONT FOG LAMP FUSE

1. Turn the ignition switch OFF.
2. Check that the following fuse is not fusing.

Unit	Location	Fuse No.	Capacity
Front fog lamp	IPDM E/R	#58	15 A

Is the fuse fusing?

YES >> GO TO 2.
NO >> GO TO 3.

2.CHECK FRONT FOG LAMP SHORT CIRCUIT

1. Disconnect IPDM E/R connector and the front fog connector.
2. Check continuity between the IPDM E/R harness connector and the ground.

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E345	86		Not existed
LH		87		

Does continuity exist?

YES >> Repair the harnesses or connectors. And then replace the fuse.
NO >> Replace the fuse. (Replace IPDM E/R if the fuse is fusing again.)

3.CHECK FRONT FOG LAMP BULB

Check the applicable lamp bulb.

Is the bulb normal?

YES >> GO TO 4.
NO >> Replace the bulb.

4.CHECK FRONT FOG LAMP OUTPUT VOLTAGE

CONSULT-III ACTIVE TEST
1. Disconnect the front fog lamp connector.
2. Turn the ignition switch ON.
3. Select “EXTERNAL LAMPS” of IPDM E/R active test item.

4. With operating the test items, check the voltage between the IPDM E/R harness connector and the ground.

Terminals				Test item	Voltage (Approx.)
(+)			(–)		
IPDM E/R			Ground	EXTERNAL LAMPS	
Connector		Terminal			
RH	E345	86		Fog	Battery voltage
				Off	0 V
LH		87		Fog	Battery voltage
				Off	0 V

Is the measurement value normal?

YES >> GO TO 5.
NO >> Replace IPDM E/R.

5.CHECK FRONT FOG LAMP OPEN CIRCUIT

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

IPDM E/R			Front fog lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E345	86	E332	1	Existed
LH		87	E331	1	

Does continuity exist?

YES >> GO TO 6.
NO >> Repair the harnesses or connectors.

6.CHECK FRONT FOG LAMP GROUND CIRCUIT OPEN CIRCUIT

Check continuity between the front fog lamp harness connector and the ground.

Front fog lamp			Ground	Continuity
Connector		Terminal		
RH	E332	2		Existed
LH	E331	2		

Does continuity exist?

YES >> Replace the front fog lamp.
NO >> Repair the harnesses or connectors.

PARKING LAMP CIRCUIT

Component Function Check

INFOID:0000000003894321

1.CHECK PARKING LAMP OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-11, "Diagnosis Description".
2. Check that the parking lamp is turned ON.

CONSULT-III ACTIVE TEST
1. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
2. With operating the test items, check that the parking lamp is turned ON.

TAIL : Parking lamp ON
Off : Parking lamp OFF

Is the parking lamp turned ON?

YES >> Parking lamp circuit is normal.
NO >> Refer to EXL-233, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000003894322

1.CHECK PARKING LAMP FUSE

1. Turn the ignition switch OFF.
2. Check that the following fuses are not fusing.

Unit	Location	Fuse No.	Capacity
Parking lamp	IPDM E/R	#52	10 A

Is the fuse fusing?

YES >> GO TO 2.
NO >> GO TO 3.

2.CHECK PARKING LAMP SHORT CIRCUIT

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

IPDM E/R			Ground	Continuity
Connector		Terminal		
RH	E346	91		Not existed
LH		92		

Does continuity exist?

YES >> Repair the harnesses or connectors. And then replace the fuse.
NO >> Replace the fuse. (Replace IPDM E/R if fusing is found again.)

3.CHECK PARKING LAMP BULB

Check the applicable lamp bulb.

Is the bulb normal?

YES >> GO TO 4.
NO >> Replace the bulb.

4.CHECK PARKING LAMP OUTPUT VOLTAGE

CONSULT-III ACTIVE TEST
1. Disconnect the front combination lamp connector.
2. Turn the ignition switch ON.
3. Select “EXTERNAL LAMPS” of IPDM E/R active test item.

4. With operating the test items, check the voltage between the IPDM E/R harness connector and the ground.

Terminals				Test item	Voltage (Approx.)
(+)			(–)		
IPDM E/R			Ground	EXTERNAL LAMPS	
Connector		Terminal			
RH	E346	91		TAIL	Battery voltage
				Off	0 V
LH		92		TAIL	Battery voltage
				Off	0 V

Is the measurement value normal?

YES >> GO TO 5.
NO >> Replace IPDM E/R.

5.CHECK PARKING LAMP OPEN CIRCUIT

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

IPDM E/R			Front combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E346	91	E319	1	Existed
LH		92	E318	1	

Does continuity exist?

YES >> GO TO 6.
NO >> Repair the harnesses or connectors.

6.CHECK PARKING LAMP GROUND OPEN CIRCUIT

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

Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E319	4		Existed
LH	E318	4		

Does continuity exist?

YES >> Replace the front combination lamp.
NO >> Repair the harnesses or connectors.

TURN SIGNAL LAMP CIRCUIT

Description

INFOID:0000000003894323

BCM performs the high flasher operation (fail-safe) if any bulb or harness of the turn signal lamp circuit is open.

NOTE:

The turn signal lamp blinks at normal speed when using the hazard warning lamp.

Component Function Check

INFOID:0000000003894324

1.CHECK TURN SIGNAL LAMP

CONSULT-III ACTIVE TEST

1. Select “FLASHER” of BCM (FLASHER) active test item.
2. With operating the test items, check that the turn signal lamp is turned ON.

LH : Turn signal lamps (LH) ON
RH : Turn signal lamps (RH) ON
Off : Turn signal lamps OFF

Is the turn signal lamp turned ON?

YES >> Turn signal lamp circuit is normal.
NO >> Refer to EXL-235, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000003894325

1.CHECK TURN SIGNAL LAMP BULB

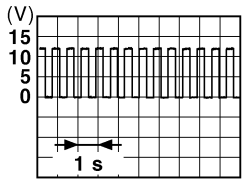
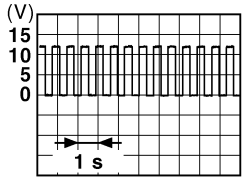
Check the applicable lamp bulb.

Is the bulb normal?

YES >> GO TO 2.
NO >> Replace the bulb.

2.CHECK TURN SIGNAL LAMP OUTPUT VOLTAGE

1. Turn the ignition switch OFF.
2. Disconnect the front combination lamp connector, the door mirror connector or the rear combination lamp connector.
3. Turn the ignition switch ON.
4. With operating the turn signal switch, check the voltage between the BCM harness connector and the ground.

Terminals				Condition	Voltage (Approx.)
(+)			(–)		
BCM				Turn signal switch	
Connector		Terminal			
Front/side RH	M119	17	Ground	LH or RH	 PKID0926E
Front/side LH		18			
				OFF	0 V
Rear RH	M120	20		LH or RH	 PKID0926E
Rear LH		25			
				OFF	0 V

Is the measurement value normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-78, "Exploded View".

3.CHECK TURN SIGNAL LAMP OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect BCM connector.
3. Check continuity between the BCM harness connector and the front combination lamp, the door mirror or the rear combination lamp harness connector.

Front turn signal lamp

BCM			Front combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	M119	17	E319	2	Existed
LH		18	E318	2	

Side turn signal lamp

BCM			Door mirror		Continuity
Connector		Terminal	Connector	Terminal	
RH	M119	17	D43	2	Existed
LH		18	D3	2	

Rear turn signal lamp

BCM			Rear combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	M120	20	B59	1	Existed
LH		25	B80	1	

Does continuity exist?

YES >> GO TO 4.
NO >> Repair the harnesses or connectors.

4.CHECK TURN SIGNAL LAMP SHORT CIRCUIT

Check continuity between the BCM harness connector and the ground.

BCM			Ground	Continuity
Connector		Terminal		
Front/side RH	M119	17		
Front/side LH		18		Not existed
Rear RH	M120	20		
Rear LH		25		

Does continuity exist?

YES >> Repair the harnesses or connectors.
NO >> GO TO 5.

5. CHECK TURN SIGNAL LAMP GROUND OPEN CIRCUIT

Check continuity between the front combination lamp, the door mirror or the rear combination lamp and the ground.

Front turn signal lamp

Front combination lamp			Ground	Continuity
Connector		Terminal		
RH	E319	4		Existed
LH	E318	4		

Side turn signal lamp

Door mirror			Ground	Continuity
Connector		Terminal		
RH	D43	10		Existed
LH	D3	10		

Rear turn signal lamp

Rear combination lamp			Ground	Continuity
Connector		Terminal		
RH	B59	5		Existed
LH	B80	5		

Does continuity exist?

YES >> Replace the front combination lamp, door mirror assembly or the rear combination lamp.
NO >> Repair the harnesses or connectors.

OPTICAL SENSOR

Description

INFOID:0000000003894326

Optical sensor converts the outside brightness (lux) to voltage and transmits the optical sensor signal to BCM.

Component Function Check

INFOID:0000000003894327

1.CHECK OPTICAL SENSOR SIGNAL BY CONSULT-III

CONSULT-III DATA MONITOR
1. Turn the ignition switch ON.
2. Select "OPTICAL SENSOR" of BCM (HEADLAMP) data monitor item.
3. Turn the lighting switch AUTO.
4. With the optical sensor illuminating, check the monitor status.

Monitor item	Condition		Voltage (Approx.)
OPTICAL SENSOR	Optical sensor	When illuminating	3.1 V or more *
		When shutting off light	0.6 V or less

*: Illuminates the optical sensor. The value may be less than the standard value if brightness is weak.

Is the item status normal?

YES >> Optical sensor is normal.
NO >> Refer to EXL-238, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000003894328

1.CHECK OPTICAL SENSOR POWER SUPPLY INPUT

1. Turn the ignition switch ON.
2. Turn the lighting switch AUTO.
3. Check the voltage between the optical sensor harness connector and the ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Optical sensor		Ground	
Connector	Terminal		
M17	1		5 V

Is the measurement value normal?

YES >> GO TO 2.
NO >> GO TO 4.

2.CHECK OPTICAL SENSOR GROUND INPUT

Check the voltage between the optical sensor harness connector and the ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Optical sensor		Ground	
Connector	Terminal		
M17	3		0 V

Is the measurement value normal?

YES >> GO TO 3.
NO >> GO TO 6.

3.CHECK OPTICAL SENSOR SIGNAL OUTPUT

With illuminating the optical sensor, check the voltage between the optical sensor harness connector and the ground.

Terminals			Condition	Voltage (Approx.)
(+)		(–)		
Optical sensor		Ground	Optical sensor	
Connector	Terminal			
M17	2		When illuminating	3.1 V or more *
			When shutting off light	0.6 V or less

*: Illuminate the optical sensor. The value may be less than the standard if brightness is weak.

Is the measurement value normal?

YES >> GO TO 7.
NO >> Replace the optical sensor.

4. CHECK OPTICAL SENSOR OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the optical sensor connector and BCM connector.
3. Check continuity between the optical sensor harness connector and the BCM harness connector.

Optical sensor		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M17	1	M123	138	Existed

Does continuity exist?

YES >> GO TO 5.
NO >> Repair the harnesses or connectors.

5. CHECK OPTICAL SENSOR SHORT CIRCUIT

Check the continuity between the optical sensor harness connector and the ground.

Optical sensor		Ground	Continuity
Connector	Terminal		
M17	1		Not existed

Does continuity exist?

YES >> Repair the harnesses or connectors.
NO >> Replace BCM.

6. CHECK OPTICAL SENSOR GROUND OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the optical sensor connector and BCM connector.
3. Check continuity between the optical sensor harness connector and the BCM harness connector.

Optical sensor		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M17	3	M123	137	Existed

Does continuity exist?

YES >> Replace BCM.
NO >> Repair the harnesses or connectors.

7. CHECK OPTICAL SENSOR SIGNAL OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the optical sensor connector and BCM connector.

3. Check continuity between the optical sensor harness connector and the BCM harness connector.

Optical sensor		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M17	2	M123	113	Existed

Does continuity exist?

YES >> GO TO 8.
NO >> Repair the harnesses or connectors.

8. CHECK OPTICAL SENSOR SHORT CIRCUIT

Check the continuity between the optical sensor harness connector and the ground.

Optical sensor		Ground	Continuity
Connector	Terminal		
M17	2		Not existed

Does continuity exist?

YES >> Repair the harnesses or connectors.
NO >> Replace BCM.

HAZARD SWITCH

Component Function Check

INFOID:0000000003894329

1.CHECK HAZARD SWITCH SIGNAL BY CONSULT-III

CONSULT-III DATA MONITOR
1. Turn the ignition switch ON.
2. Select “HAZARD SW” of BCM (FLASHER) data monitor item.
3. With operating the hazard switch, check the monitor status.

Monitor item	Condition		Monitor status
HAZARD SW	Hazard switch	ON	On
		OFF	Off

Is the item status normal?

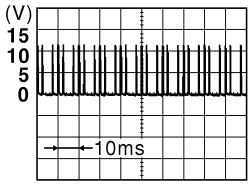
YES >> Hazard switch circuit is normal.
NO >> Refer to EXL-241, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000003894330

1.CHECK HAZARD SWITCH SIGNAL INPUT

With operating the hazard switch, check the voltage between the BCM harness connector and the ground.

Terminals			Condition	Voltage (Approx.)
(+)		(–)		
BCM			Hazard switch	
Connector	Terminal			
M122	110	Ground	ON	0 V
			OFF	 JPMIA0154GB

Is the measurement value normal?

YES >> Replace BCM. Refer to BCS-78, "Exploded View".
NO >> GO TO 2.

2.CHECK HAZARD SWITCH SIGNAL OPEN CIRCUIT

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

Hazard switch		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M45	2	M122	110	Existed

Does continuity exist?

YES >> GO TO 3.
NO >> Repair the harnesses or connectors.

3.CHECK HAZARD SWITCH SIGNAL SHORT CIRCUIT

Check continuity between the hazard switch harness connector and the ground.

Hazard switch		Ground	Continuity
Connector	Terminal		
M45	2		Not existed

Does continuity exist?

YES >> Repair the harnesses or connectors.
NO >> GO TO 4.

4. CHECK HAZARD SWITCH GROUND OPEN CIRCUIT

Check continuity between the hazard switch harness connector and the ground.

Hazard switch		Ground	Continuity
Connector	Terminal		
M45	1		Existed

Does continuity exist?

YES >> Replace the hazard switch.
NO >> Repair the harnesses or connectors.

TAIL LAMP CIRCUIT

Component Function Check

INFOID:0000000003894331

NOTE:
Check the license plate lamp circuit if the tail lamp and the license plate lamp are not turned ON. Refer to EXL-245, "Component Function Check".

1.CHECK TAIL LAMP OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-11, "Diagnosis Description".
2. Check that the tail lamp is turned ON.

CONSULT-III ACTIVE TEST
1. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
2. With operating the test items, check that the tail lamp is turned ON.

TAIL : Tail Lamp ON
Off : Tail lamp OFF

Is the tail lamp turned ON?

YES >> Tail lamp circuit is normal.
NO >> Refer to EXL-243, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000003894332

1.CHECK TAIL LAMP FUSE

1. Turn the ignition switch OFF.
2. Check that the following fuses are not fusing.

Unit	Location	Fuse No.	Capacity
Tail lamp	IPDM E/R	#53	10 A

Is the fuse fusing?

YES >> Repair the malfunctioning part before replacing the fuse.
NO >> GO TO 2.

2.CHECK TAIL LAMP OUTPUT VOLTAGE

CONSULT-III ACTIVE TEST
1. Disconnect the rear combination lamp connector.
2. Turn the ignition switch ON.
3. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
4. With operating the test items, check the voltage between the IPDM E/R harness connector and the ground.

Terminals			Test item	Voltage (Approx.)
(+)		(–)		
IPDM E/R		Ground	EXTERNAL LAMPS	
Connector	Terminal			
E10	7		TAIL	Battery voltage
			Off	0 V

Is the measurement value normal?

YES >> GO TO 3.
NO >> Replace IPDM E/R.

3.CHECK TAIL LAMP OPEN CIRCUIT

1. Turn the ignition switch OFF.

2. Disconnect IPDM E/R connector.
3. Check continuity between the IPDM E/R harness connector and the rear combination lamp harness connector.

IPDM E/R			Rear combination lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E10	7	B59	2	Existed
LH			B80	2	

Does continuity exist?

YES >> GO TO 4.
NO >> Repair the harnesses or connectors.

4. CHECK TAIL LAMP GROUND OPEN CIRCUIT

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

Rear combination lamp			Ground	Continuity
Connector		Terminal		
RH	B59	5		Existed
LH	B80	5		

Does continuity exist?

YES >> Replace the rear combination lamp.
NO >> Repair the harnesses or connectors.

LICENSE PLATE LAMP CIRCUIT

Component Function Check

INFOID:0000000003894333

1.CHECK LICENSE PLATE LAMP OPERATION

IPDM E/R AUTO ACTIVE TEST
1. Activate IPDM E/R auto active test. Refer to PCS-11, "Diagnosis Description".
2. Check that the license plate lamp is turned ON.

CONSULT-III ACTIVE TEST
1. Select “EXTERNAL LAMPS” of IPDM E/R active test item.
2. With operating the lighting switch, check that the license plate lamp is turned ON.

TAIL : License plate lamp ON
Off : License plate lamp OFF

Is the license plate lamp turned ON?

YES >> License plate lamp circuit is normal.
NO >> Refer to EXL-245, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000003894334

1.CHECK LICENSE PLATE LAMP BULB

Check the applicable lamp bulb.

Is the bulb normal?

YES >> GO TO 2.
NO >> Replace the bulb.

2.CHECK LICENSE PLATE LAMP OPEN CIRCUIT

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

IPDM E/R			License plate lamp		Continuity
Connector		Terminal	Connector	Terminal	
RH	E10	7	T4	1	Existed
LH			T3	1	

Does continuity exist?

YES >> GO TO 3.
NO >> Repair the harnesses or connectors.

3.CHECK LICENSE PLATE LAMP GROUND OPEN CIRCUIT

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

License plate lamp			Ground	Continuity
Connector		Terminal		
RH	T4	2		Existed
LH	T3	2		

Does continuity exist?

YES >> Replace the license plate lamp.
NO >> Repair the harnesses or connectors.

REAR FOG LAMP CIRCUIT

Component Function Check

INFOID:0000000003894335

1.CHECK REAR FOG LAMP OPERATION

CONSULT-III ACTIVE TEST
1. Select “RR FOG LAMP” of BCM (HEAD LAMP) active test item.
2. With operating the test items, check that the rear fog lamp is turned ON.

On : Rear fog lamp ON
Off : Rear fog lamp OFF

Is rear fog lamp turned ON?

YES >> Rear fog lamp circuit is normal.
NO >> Refer to EXL-246, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000003894336

1.CHECK REAR FOG LAMP BULB

Check the applicable lamp bulb.

Is the bulb normal?

YES >> GO TO 2.
NO >> Replace the bulb.

2.CHECK REAR FOG LAMP OUTPUT VOLTAGE

CONSULT-III ACTIVE TEST
1. Turn the ignition switch OFF.
2. Disconnect the rear fog lamp connector.
3. Turn the ignition switch ON.
4. Select “RR FOG LAMP” of BCM (HEAD LAMP) active test item.
5. With operating the test items, check voltage between BCM harness connector and ground.

Terminals			Test item	Voltage (approx.)
(+)		(–)		
BCM		Ground	RR FOG LAMP	
Connector	Terminal			
M120	24		On	12 V
			Off	0 V

Is the measurement value normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-78, "Exploded View".

3.CHECK REAR FOG LAMP OPEN CIRCUIT

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

BCM		Rear fog lamp		Continuity
Connector	Terminal	Connector	Terminal	
M120	24	B70	1	Existed

Does continuity exist?

YES >> GO TO 4.
NO >> Repair the harnesses or connectors.

4.CHECK REAR FOG LAMP SHORT CIRCUIT

Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M120	24		Not existed

Does continuity exist?

YES >> GO TO 5.
NO >> Repair the harnesses or connectors.

5.CHECK REAR FOG LAMP GROUND OPEN CIRCUIT

Check continuity between rear fog lamp harness connector and ground.

Rear fog lamp		Ground	Continuity
Connector	Terminal		
B70	2		Existed

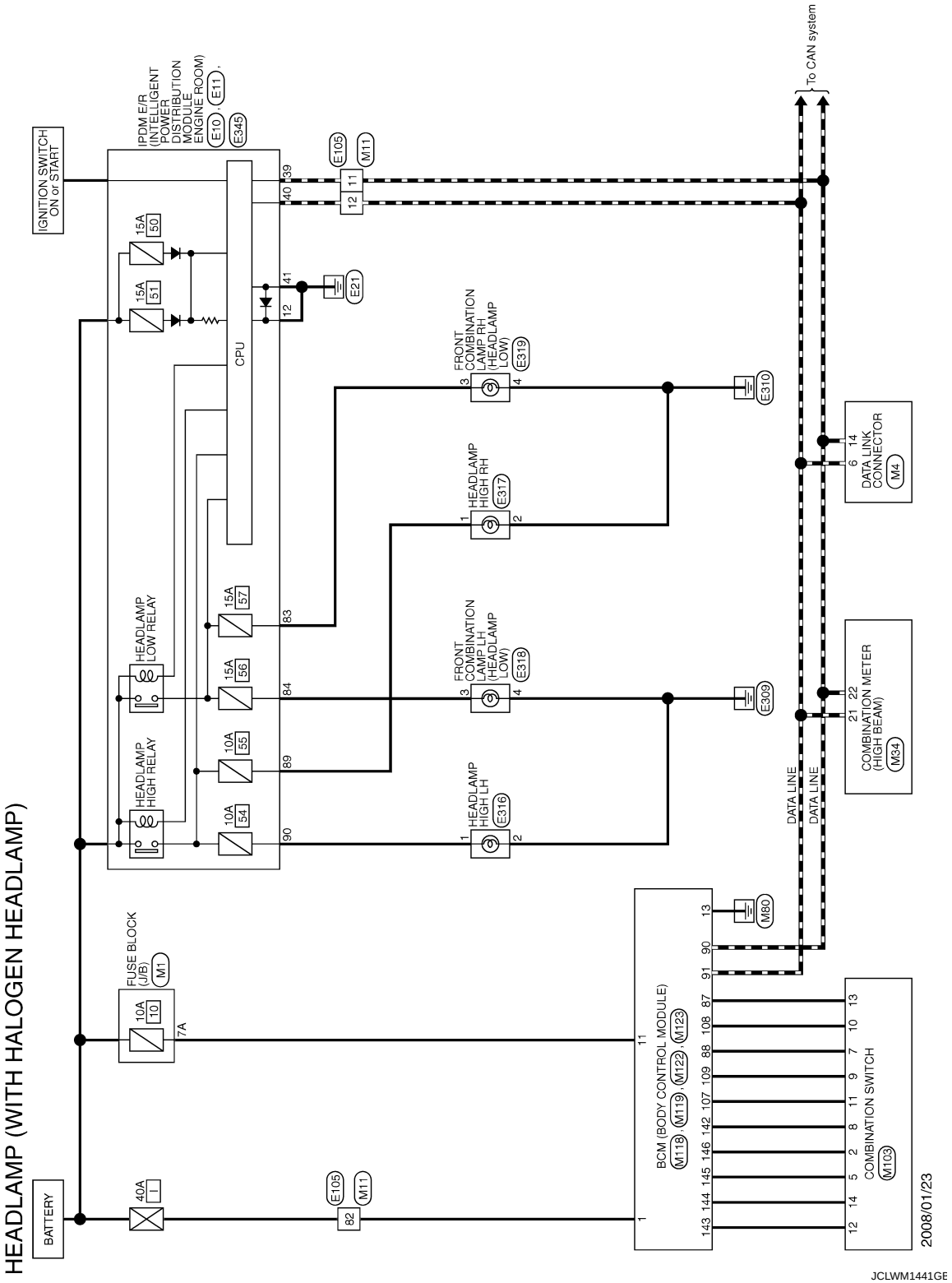
Does continuity exist?

YES >> Replace the rear fog lamp.
NO >> Repair the harnesses or connectors.

HEADLAMP SYSTEM

Wiring Diagram - HEADLAMP -

INFOID:0000000003773699

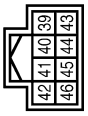


HEADLAMP (WITH HALOGEN HEADLAMP)

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH20FW-CS12-M4-1V

Terminal No.	Color of Wire	Signal Name [Specification]
12	B/W	–

Connector No.	E11
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH08FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
39	P	–
40	L	–
41	B	–

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH70MW-CS10-M3



Terminal No.	Color of Wire	Signal Name [Specification]
11	P	–
12	L	–
82	LG	–

Connector No.	E316
Connector Name	HEADLAMP HIGH LH
Connector Type	FHZ02FB-1V



Terminal No.	Color of Wire	Signal Name [Specification]
1	O	–
2	B	–

Connector No.	E317
Connector Name	HEADLAMP HIGH RH
Connector Type	FHZ02FB-1V



Terminal No.	Color of Wire	Signal Name [Specification]
1	W	–
2	B	–

Connector No.	E318
Connector Name	FRONT COMBINATION LAMP LH
Connector Type	RS04FGY-PR

Terminal No.	Color of Wire	Signal Name [Specification]
3	SB	–
4	B/W	–

Connector No.	E319
Connector Name	FRONT COMBINATION LAMP RH
Connector Type	RS04FGY-PR

Terminal No.	Color of Wire	Signal Name [Specification]
3	Y	–
4	B/W	–

Connector No.	E345
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS08FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
83	Y	–
84	SB	–
89	W	–
90	O	–

JCLWM1442GE

HEADLAMP (WITH HALOGEN HEADLAMP)

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS06FW-M2

Terminal No.	Color of Wire	Signal Name [Specification]
7A	Y/R	–

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW

Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH70FW-CS10-M3

Terminal No.	Color of Wire	Signal Name [Specification]
11	P	–
12	L	–
82	W/B	–

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
21	L	CAN-H
22	P	CAN-L

Connector No.	M103
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
2	G/Y	OUTPUT 4
5	LG/R	OUTPUT 3
7	R/G	INPUT 3
8	LG/B	OUTPUT 5
9	R/B	INPUT 2
10	P/B	INPUT 4
11	R/W	INPUT 1
12	L/W	OUTPUT 1
13	R/Y	INPUT 5
14	G/B	OUTPUT 2

Connector No.	M118
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	M03FB-LC

Terminal No.	Color of Wire	Signal Name [Specification]
1	W/B	BAT (F/L)

Connector No.	M119
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS16FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
11	Y/R	BAT (FUSE)
13	B	GND

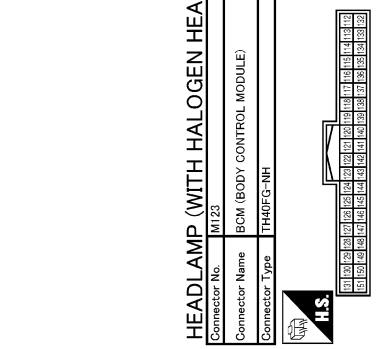
Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH

Terminal No.	Color of Wire	Signal Name [Specification]
87	R/Y	COMBI SW INPUT 5
88	R/G	COMBI SW INPUT 3
90	P	CAN-L
91	L	CAN-H
107	R/W	COMBI SW INPUT 1
108	P/B	COMBI SW INPUT 4
109	R/B	COMBI SW INPUT 2

JCLWM1443GE

HEADLAMP (WITH HALOGEN HEADLAMP)

Connector No.	M123
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH



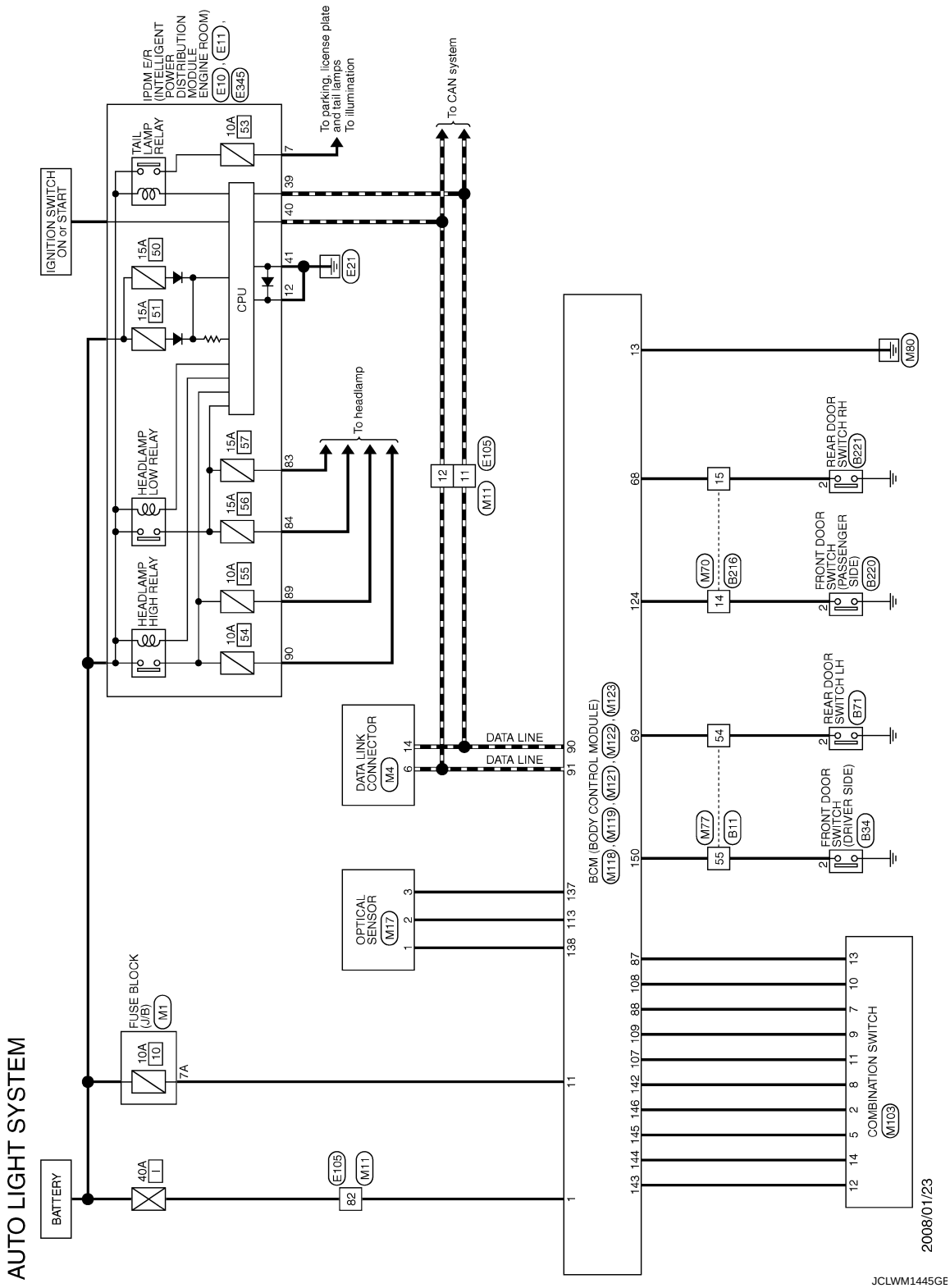
Terminal No.	Color of Wire	Signal Name [Specification]
142	LG/B	COMBI SW OUTPUT 5
143	L/W	COMBI SW OUTPUT 1
144	G/B	COMBI SW OUTPUT 2
145	LG/R	COMBI SW OUTPUT 3
146	G/Y	COMBI SW OUTPUT 4

JCLWM1444GE

AUTO LIGHT SYSTEM

Wiring Diagram - AUTO LIGHT SYSTEM -

INFOID:0000000003894337



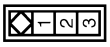
AUTO LIGHT SYSTEM

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS19



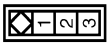
Terminal No.	Color of Wire	Signal Name [Specification]
54	BR	–
55	SB	–

Connector No.	B34
Connector Name	FRONT DOOR SWITCH (DRIVER SIDE)
Connector Type	A03FW



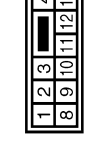
Terminal No.	Color of Wire	Signal Name [Specification]
2	SB	–

Connector No.	B71
Connector Name	REAR DOOR SWITCH LH
Connector Type	A03FW



Terminal No.	Color of Wire	Signal Name [Specification]
2	BR	–

Connector No.	B216
Connector Name	WIRE TO WIRE
Connector Type	NS16MBR-CS



Terminal No.	Color of Wire	Signal Name [Specification]
14	R	–
15	W	–

Connector No.	B220
Connector Name	FRONT DOOR SWITCH (PASSENGER SIDE)
Connector Type	A03FW

Terminal No.	Color of Wire	Signal Name [Specification]
2	R	–

Connector No.	B221
Connector Name	REAR DOOR SWITCH RH
Connector Type	A03FW

Terminal No.	Color of Wire	Signal Name [Specification]
2	W	–

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH20FW-CS12-M4-1V

Terminal No.	Color of Wire	Signal Name [Specification]
7	GR	–
12	B/W	–

Connector No.	E11
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH08FW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
39	P	–
40	L	–
41	B	–

JCLWM1446GE

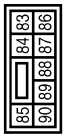
AUTO LIGHT SYSTEM

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH70MW-CS10-M3



Terminal No.	Color of Wire	Signal Name [Specification]
11	P	–
12	L	–
82	LG	–

Connector No.	E345
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS08FW-CS



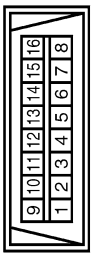
Terminal No.	Color of Wire	Signal Name [Specification]
83	Y	–
84	SB	–
89	W	–
90	O	–

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS08FW-M2



Terminal No.	Color of Wire	Signal Name [Specification]
7A	Y/R	–

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH70FW-CS10-M3



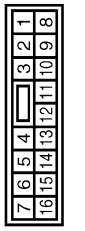
Terminal No.	Color of Wire	Signal Name [Specification]
11	P	–
12	L	–
82	W/B	–

Connector No.	M17
Connector Name	OPTICAL SENSOR
Connector Type	TK03FW



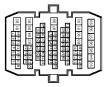
Terminal No.	Color of Wire	Signal Name [Specification]
1	V/W	–
2	P/B	–
3	P	–

Connector No.	M70
Connector Name	WIRE TO WIRE
Connector Type	NS16FBR-CS



Terminal No.	Color of Wire	Signal Name [Specification]
14	R/B	–
15	R/W	–

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS19



Terminal No.	Color of Wire	Signal Name [Specification]
54	R/B	–
55	SB	–

JCLWM1447GE

AUTO LIGHT SYSTEM

Connector No.	M103
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
2	G/Y	OUTPUT 4
5	LG/R	OUTPUT 3
7	R/G	INPUT 3
8	LG/B	OUTPUT 5
9	R/B	INPUT 2
10	P/B	INPUT 4
11	R/W	INPUT 1
12	L/W	OUTPUT 1
13	R/Y	INPUT 5
14	G/B	OUTPUT 2

Connector No.	M118
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	M03FB-LC

Terminal No.	Color of Wire	Signal Name [Specification]
1	W/B	BAT (F/L)

Connector No.	M119
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS16FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
11	Y/R	BAT (FUSE)
13	B	GND

Connector No.	M121
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FGY-NH

Terminal No.	Color of Wire	Signal Name [Specification]
68	R/W	REAR RH DOOR SW
69	R/B	REAR LH DOOR SW

Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH

Terminal No.	Color of Wire	Signal Name [Specification]
87	R/Y	COMBI SW INPUT 5
88	R/G	COMBI SW INPUT 3
90	P	CAN-L
91	L	CAN-H
107	R/W	COMBI SW INPUT 1
108	P/B	COMBI SW INPUT 4
109	R/B	COMBI SW INPUT 2

Connector No.	M123
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH

Terminal No.	Color of Wire	Signal Name [Specification]
113	P/B	OPTICAL SENSOR
124	R/B	PASSENGER DOOR SW
137	P	RECEIVER/SENSOR GND
138	V/W	RECEIVER/SENSOR POWER SUPPLY
142	LG/B	COMBI SW OUTPUT 5
143	L/W	COMBI SW OUTPUT 1
144	G/B	COMBI SW OUTPUT 2
145	LG/R	COMBI SW OUTPUT 3
146	G/Y	COMBI SW OUTPUT 4
150	SB	DRIVER DOOR SW

JCLWM1448GE

HEADLAMP AIMING CONTROL SYSTEM (MANUAL)

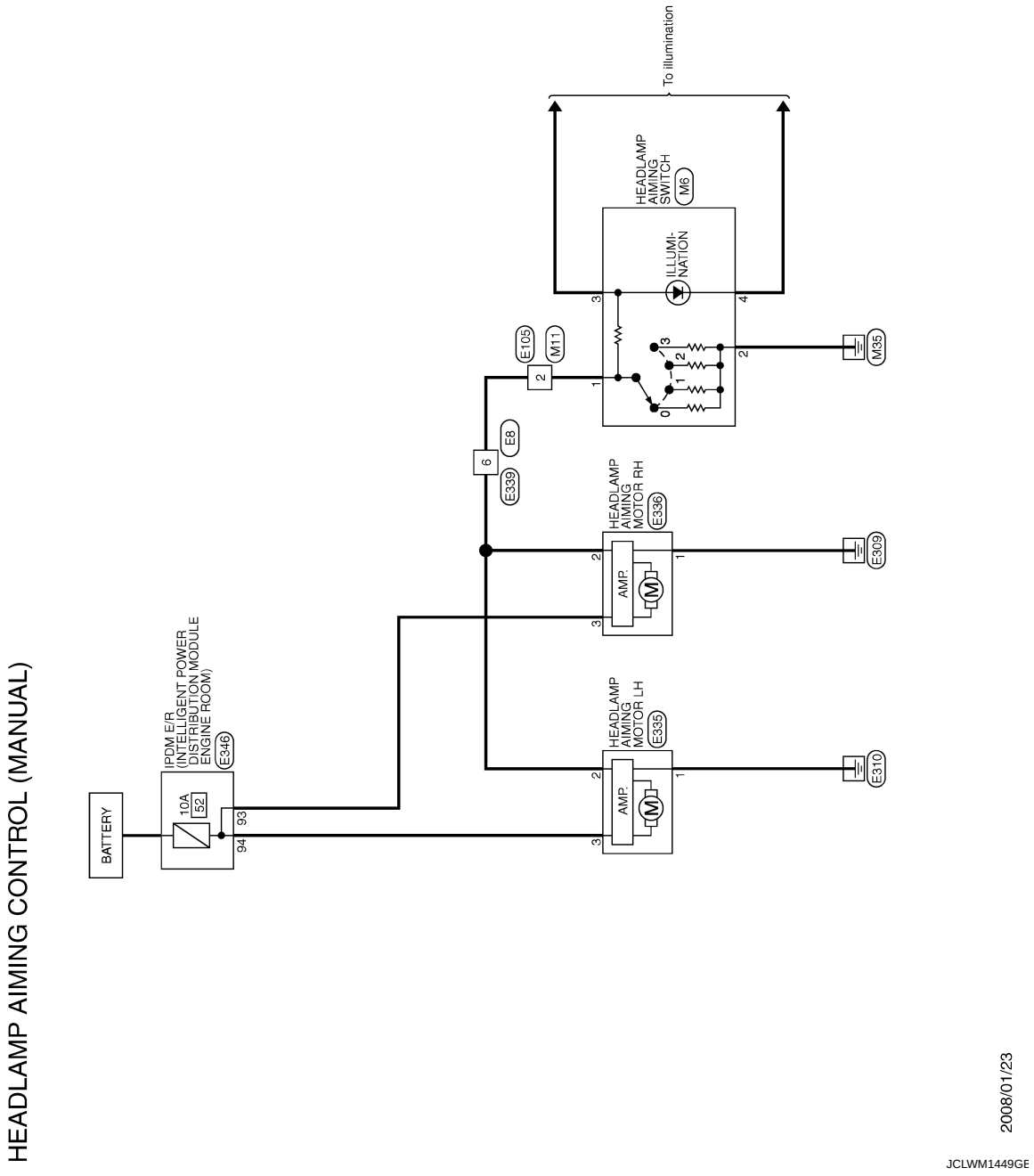
Description

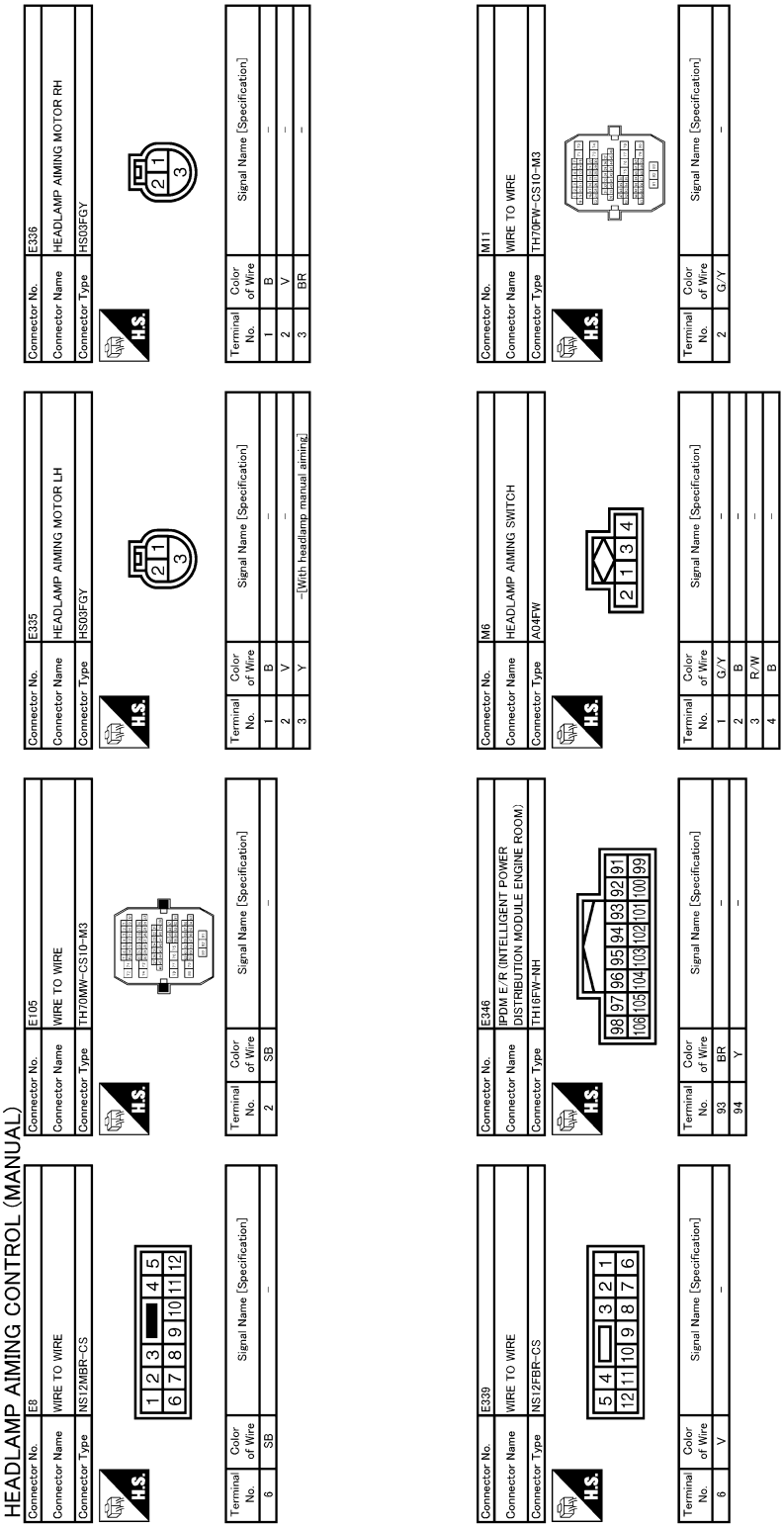
INFOID:0000000003773585

The headlamp levelizer adjusts the headlamp light axis upward and downward with the aiming motor integrated in the front combination lamp.

Wiring Diagram - HEADLAMP AIMING CONTROL SYSTEM (MANUAL) -

INFOID:0000000003773586





JCLWM1450GE

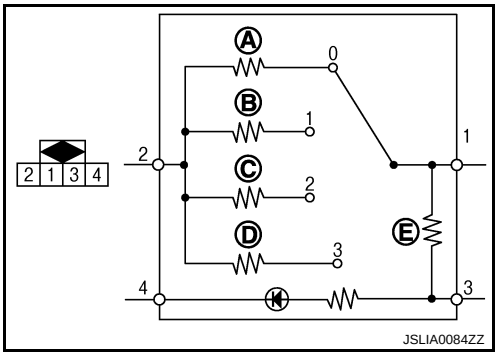
Component Inspection

INFOID:0000000003773587

1. CHECK HEADLAMP AIMING SWITCH

1. Remove the headlamp aiming switch.

2. Check the resistance among each headlamp aiming switch terminal.



Headlamp aiming switch		Condition	Resistance (Approx.)
Terminal		Switch position	
1	2	0	A: 2000 Ω
		1	B: 590 Ω
		2	C: 324 Ω
		3	D: 169 Ω
	3	—	E: 390 Ω

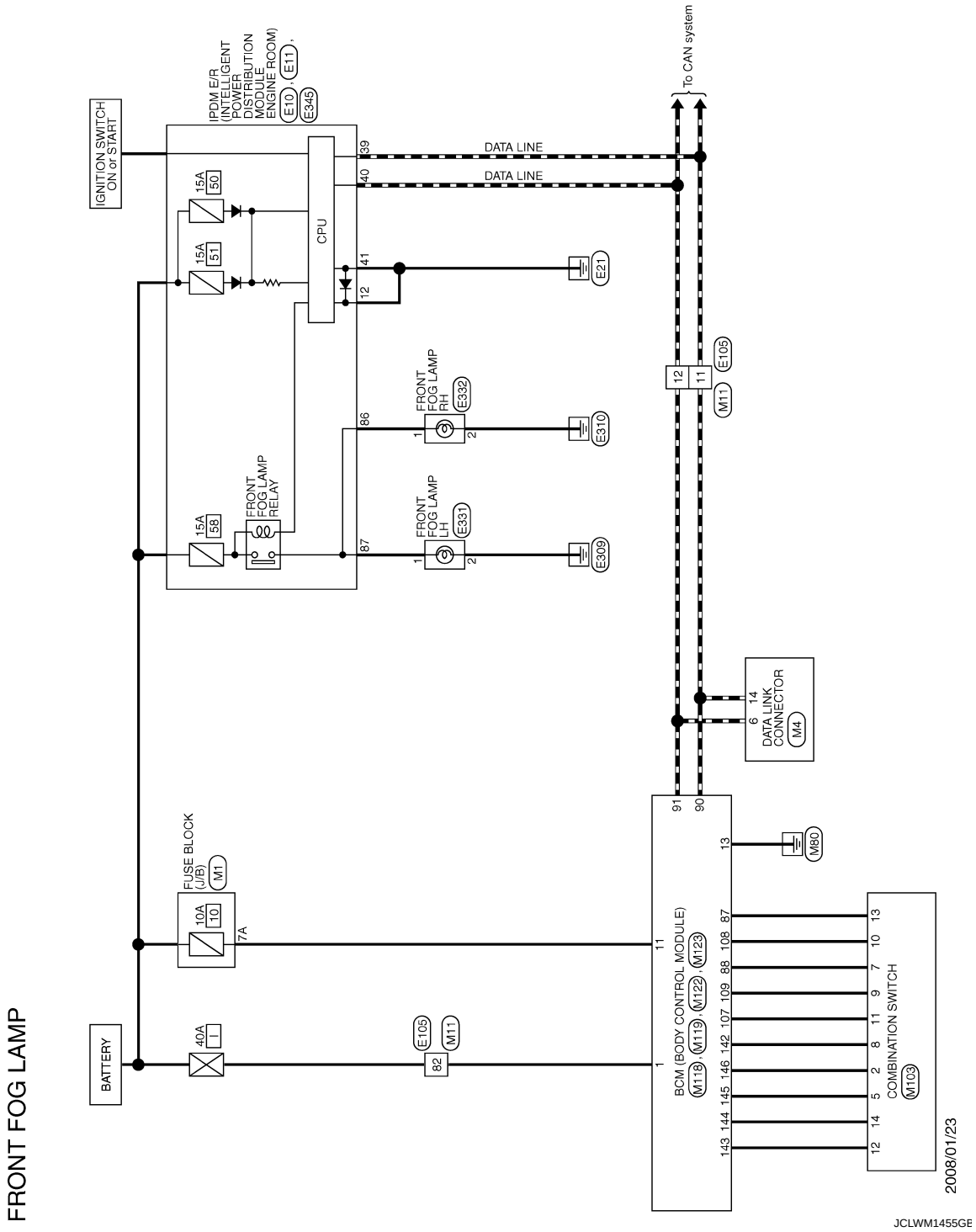
Is the measurement value normal?

YES >> Headlamp aiming switch is normal.
NO >> Replace the headlamp aiming switch.

FRONT FOG LAMP SYSTEM

Wiring Diagram - FRONT FOG LAMP -

INFOID:0000000003894338



FRONT FOG LAMP

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH20FW-CS12-M4-1V

Terminal No.	Color of Wire	Signal Name [Specification]
12	B/W	–

Connector No.	E11
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH08FW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
39	P	–
40	L	–
41	B	–

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH70MW-CS10-M3

Terminal No.	Color of Wire	Signal Name [Specification]
11	P	–
12	L	–
82	LG	–

Connector No.	E331
Connector Name	FRONT FOG LAMP LH
Connector Type	FHZ02FB

Terminal No.	Color of Wire	Signal Name [Specification]
1	R	–
2	B	–

Connector No.	E332
Connector Name	FRONT FOG LAMP RH
Connector Type	FHZ02FB

Terminal No.	Color of Wire	Signal Name [Specification]
1	L	–
2	B	–

Connector No.	E345
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS08FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
86	L	–
87	R	–

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS06FW-M2

Terminal No.	Color of Wire	Signal Name [Specification]
7A	Y/R	–

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW

Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

JCLWM1456GE

FRONT FOG LAMP

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH70FW-CS10-M3

Terminal No.	Color of Wire	Signal Name [Specification]
11	P	–
12	L	–
82	W/B	–

Connector No.	M103
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
2	G/Y	OUTPUT 4
5	LG/R	OUTPUT 3
7	R/G	INPUT 3
8	LG/B	OUTPUT 5
9	R/B	INPUT 2
10	P/B	INPUT 4
11	R/W	INPUT 1
12	L/W	OUTPUT 1
13	R/Y	INPUT 5
14	G/B	OUTPUT 2

Connector No.	M118
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	M03FB-LC

Terminal No.	Color of Wire	Signal Name [Specification]
1	W/B	BAT (F/L)

Connector No.	M119
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS16FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
11	Y/R	BAT (FUSE)
13	B	GND

Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH

Terminal No.	Color of Wire	Signal Name [Specification]
87	R/Y	COMBI SW INPUT 5
88	R/G	COMBI SW INPUT 3
90	P	CAN-L
91	L	CAN-H
107	R/W	COMBI SW INPUT 1
108	P/B	COMBI SW INPUT 4
109	R/B	COMBI SW INPUT 2

Connector No.	M123
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH

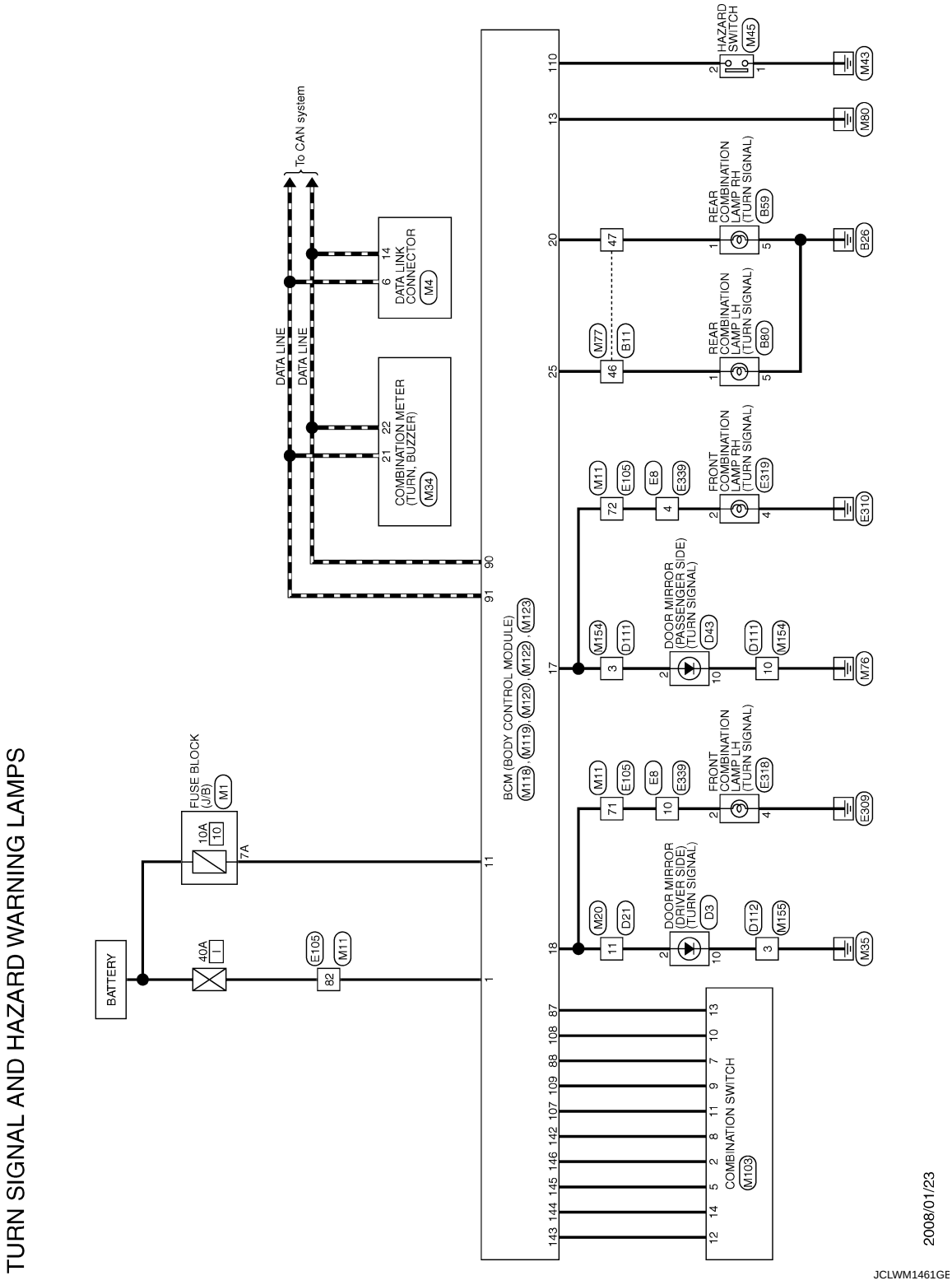
Terminal No.	Color of Wire	Signal Name [Specification]
142	LG/B	COMBI SW OUTPUT 5
143	L/W	COMBI SW OUTPUT 1
144	G/B	COMBI SW OUTPUT 2
145	LG/R	COMBI SW OUTPUT 3
146	G/Y	COMBI SW OUTPUT 4

JCLWM1457GE

TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM

Wiring Diagram - TURN AND HAZARD WARNING LAMPS -

INFOID:0000000003894339



TURN SIGNAL AND HAZARD WARNING LAMPS

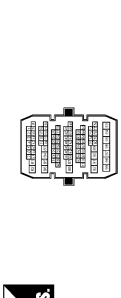
Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS19

Terminal No.	Color of Wire	Signal Name [Specification]
46	Y	–
47	BR	–

Connector No.	B59
Connector Name	REAR COMBINATION LAMP RH
Connector Type	RS06FGY-PR

Terminal No.	Color of Wire	Signal Name [Specification]
1	BR	–
5	B	–

Connector No.	D21
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
11	GR	–

Connector No.	B80
Connector Name	REAR COMBINATION LAMP LH
Connector Type	RS06FGY-PR

Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	–
5	B	–

Connector No.	D43
Connector Name	DOOR MIRROR (PASSENGER SIDE)
Connector Type	TH16MW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
2	G/B	–
10	B	–

Connector No.	D3
Connector Name	DOOR MIRROR (DRIVER SIDE)
Connector Type	TH16MW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
2	G/Y	–
10	B	–

Connector No.	D111
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
3	GR	–
10	B	–

Connector No.	D112
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
3	B	–

JCLWM1462GE

TURN SIGNAL AND HAZARD WARNING LAMPS

Connector No.	E8
Connector Name	WIRE TO WIRE
Connector Type	NS12MBR-CS

Terminal No.	Color of Wire	Signal Name [Specification]
4	SB	–
10	Y	–

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH70MW-CS10-M3

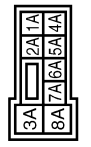


Terminal No.	Color of Wire	Signal Name [Specification]
71	Y	–
72	SB	–
82	LG	–

Connector No.	E339
Connector Name	WIRE TO WIRE
Connector Type	NS12FBR-CS

Terminal No.	Color of Wire	Signal Name [Specification]
4	SB	–
10	Y	–

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS06FW-M2



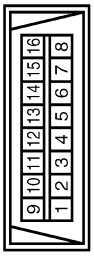
Terminal No.	Color of Wire	Signal Name [Specification]
7A	Y/R	–

Connector No.	E318
Connector Name	FRONT COMBINATION LAMP LH
Connector Type	RS04FGY-PR



Terminal No.	Color of Wire	Signal Name [Specification]
2	Y	–
4	B/W	–

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	E319
Connector Name	FRONT COMBINATION LAMP RH
Connector Type	RS04FGY-PR



Terminal No.	Color of Wire	Signal Name [Specification]
2	SB	–
4	B/W	–

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH70FW-CS10-M3



Terminal No.	Color of Wire	Signal Name [Specification]
71	G/Y	–
72	G/B	–
82	W/B	–

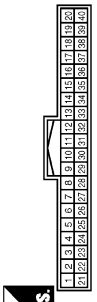
JCLWM1463GE

TURN SIGNAL AND HAZARD WARNING LAMPS

Connector No.	M20
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
11	G/Y	–

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
21	L	CAN-H
22	P	CAN-L

Connector No.	M45
Connector Name	HAZARD SWITCH
Connector Type	TK04FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	B	–
2	G/O	–

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS19



Terminal No.	Color of Wire	Signal Name [Specification]
46	G/Y	–
47	G/B	–

Connector No.	M103
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
2	G/Y	OUTPUT 4
5	LG/R	OUTPUT 3
7	R/G	INPUT 3
8	LG/B	OUTPUT 5
9	R/B	INPUT 2
10	P/B	INPUT 4
11	R/W	INPUT 1
12	L/W	OUTPUT 1
13	R/Y	INPUT 5
14	G/B	OUTPUT 2

Connector No.	M118
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	M03FB-LC



Terminal No.	Color of Wire	Signal Name [Specification]
1	W/B	BAT (F/L)

Connector No.	M119
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS16FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
11	Y/R	BAT (FUSE)
13	B	GND
17	G/B	TURN SIGNAL RH (FRONT, D/MIRROR)
18	G/Y	TURN SIGNAL LH (FRONT, D/MIRROR)

Connector No.	M120
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS12FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
20	G/B	TURN SIGNAL RH (REAR)
25	G/Y	TURN SIGNAL LH (REAR)

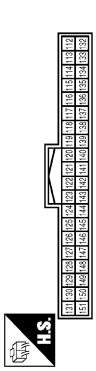
JCLWM1464GE

TURN SIGNAL AND HAZARD WARNING LAMPS

Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH

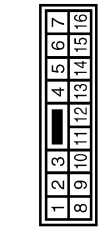
Terminal No.	Color of Wire	Signal Name [Specification]
87	R/Y	COMBI SW INPUT 5
88	R/G	COMBI SW INPUT 3
90	P	CAN-L
91	L	CAN-H
107	R/W	COMBI SW INPUT 1
108	P/B	COMBI SW INPUT 4
109	R/B	COMBI SW INPUT 2
110	G/O	HAZARD SW

Connector No.	M123
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH



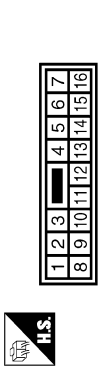
Terminal No.	Color of Wire	Signal Name [Specification]
142	LG/B	COMBI SW OUTPUT 5
143	L/W	COMBI SW OUTPUT 1
144	G/B	COMBI SW OUTPUT 2
145	LG/R	COMBI SW OUTPUT 3
146	G/Y	COMBI SW OUTPUT 4

Connector No.	M154
Connector Name	WIRE TO WIRE
Connector Type	NS16MW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
3	G/B	–
10	B/W	–

Connector No.	M155
Connector Name	WIRE TO WIRE
Connector Type	NS16MW-CS



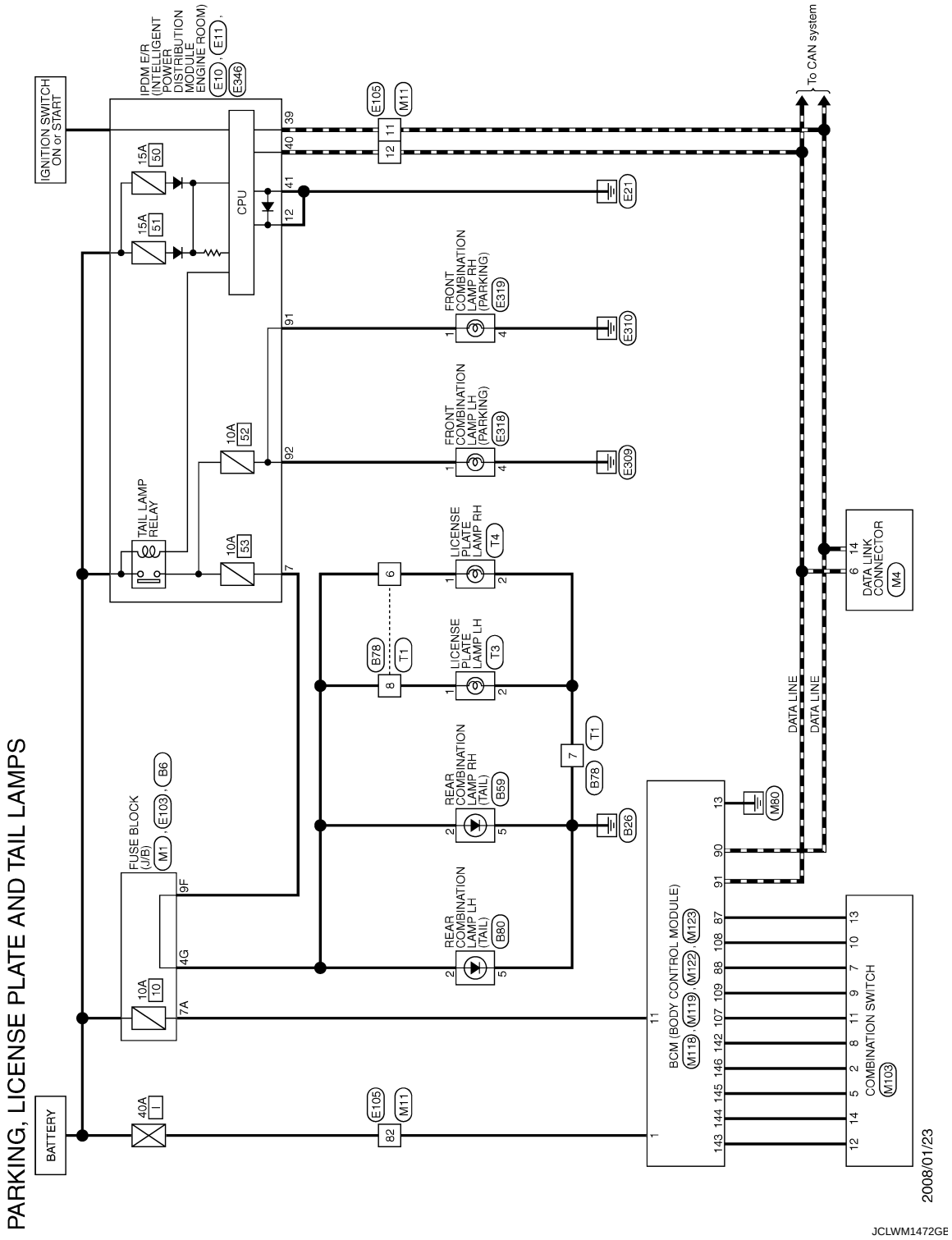
Terminal No.	Color of Wire	Signal Name [Specification]
3	B/P	–

JCLWM1465GE

PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM

Wiring Diagram - PARKING, LICENSE PLATE AND TAIL LAMPS -

INFOID:0000000003894340



PARKING, LICENSE PLATE AND TAIL LAMPS

Connector No.	B6
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS12FBR-CS

Terminal No.	Color of Wire	Signal Name [Specification]
4G	L	–

Connector No.	B59
Connector Name	REAR COMBINATION LAMP RH
Connector Type	RS06FGY-PR

Terminal No.	Color of Wire	Signal Name [Specification]
2	L	–
5	B	–

Connector No.	B78
Connector Name	WIRE TO WIRE
Connector Type	NS12MW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
7	B	–
8	L	–

Connector No.	B80
Connector Name	REAR COMBINATION LAMP LH
Connector Type	RS06FGY-PR

Terminal No.	Color of Wire	Signal Name [Specification]
2	L	–
5	B	–

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH20FW-CS12-M4-1V

Terminal No.	Color of Wire	Signal Name [Specification]
7	GR	–
12	B/W	–

Connector No.	E11
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH08FW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
39	P	–
40	L	–
41	B	–

Connector No.	E103
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
9F	GR	–

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH70MW-CS10-M3

Terminal No.	Color of Wire	Signal Name [Specification]
11	P	–
12	L	–
82	LG	–

JCLWM1473GE

PARKING, LICENSE PLATE AND TAIL LAMPS

Connector No.	E318
Connector Name	FRONT COMBINATION LAMP LH
Connector Type	RS04FGY-PR

Terminal No.	Color of Wire	Signal Name [Specification]
1	L	–
4	B/W	–

Connector No.	E319
Connector Name	FRONT COMBINATION LAMP RH
Connector Type	RS04FGY-PR



Terminal No.	Color of Wire	Signal Name [Specification]
1	O	–
4	B/W	–

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH70FW-CS10-M3

Terminal No.	Color of Wire	Signal Name [Specification]
11	P	–
12	L	–
82	W/B	–

Connector No.	E346
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH16FW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
91	O	–
92	L	–

Connector No.	M103
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
2	G/Y	OUTPUT 4
5	LG/R	OUTPUT 3
7	R/G	INPUT 3
8	LG/B	OUTPUT 5
9	R/B	INPUT 2
10	P/B	INPUT 4
11	R/W	INPUT 1
12	L/W	OUTPUT 1
13	R/Y	INPUT 5
14	G/B	OUTPUT 2

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS08FW-M2



Terminal No.	Color of Wire	Signal Name [Specification]
7A	Y/R	–

Connector No.	M118
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	M03FB-LC

Terminal No.	Color of Wire	Signal Name [Specification]
1	W/B	BAT (F/L)

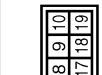
JCLWM1474GE

PARKING, LICENSE PLATE AND TAIL LAMPS

Connector No.	M119
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS16FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
11	Y/R	BAT (FUSE)
13	B	GND

Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH



Terminal No.	Color of Wire	Signal Name [Specification]
87	R/Y	COMBI SW INPUT 5
88	R/G	COMBI SW INPUT 3
90	P	CAN-L
91	L	CAN-H
107	R/W	COMBI SW INPUT 1
108	P/B	COMBI SW INPUT 4
109	R/B	COMBI SW INPUT 2

Connector No.	M123
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH

Terminal No.	Color of Wire	Signal Name [Specification]
142	LG/B	COMBI SW OUTPUT 5
143	L/W	COMBI SW OUTPUT 1
144	G/B	COMBI SW OUTPUT 2
145	LG/R	COMBI SW OUTPUT 3
146	G/Y	COMBI SW OUTPUT 4

Connector No.	T1
Connector Name	WIRE TO WIRE
Connector Type	NS12FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
6	G	–
7	B	–
8	Y	–

Connector No.	T3
Connector Name	LICENSE PLATE LAMP LH
Connector Type	TK02FBR

Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	–
2	B	–

Connector No.	T4
Connector Name	LICENSE PLATE LAMP RH
Connector Type	TK02FBR

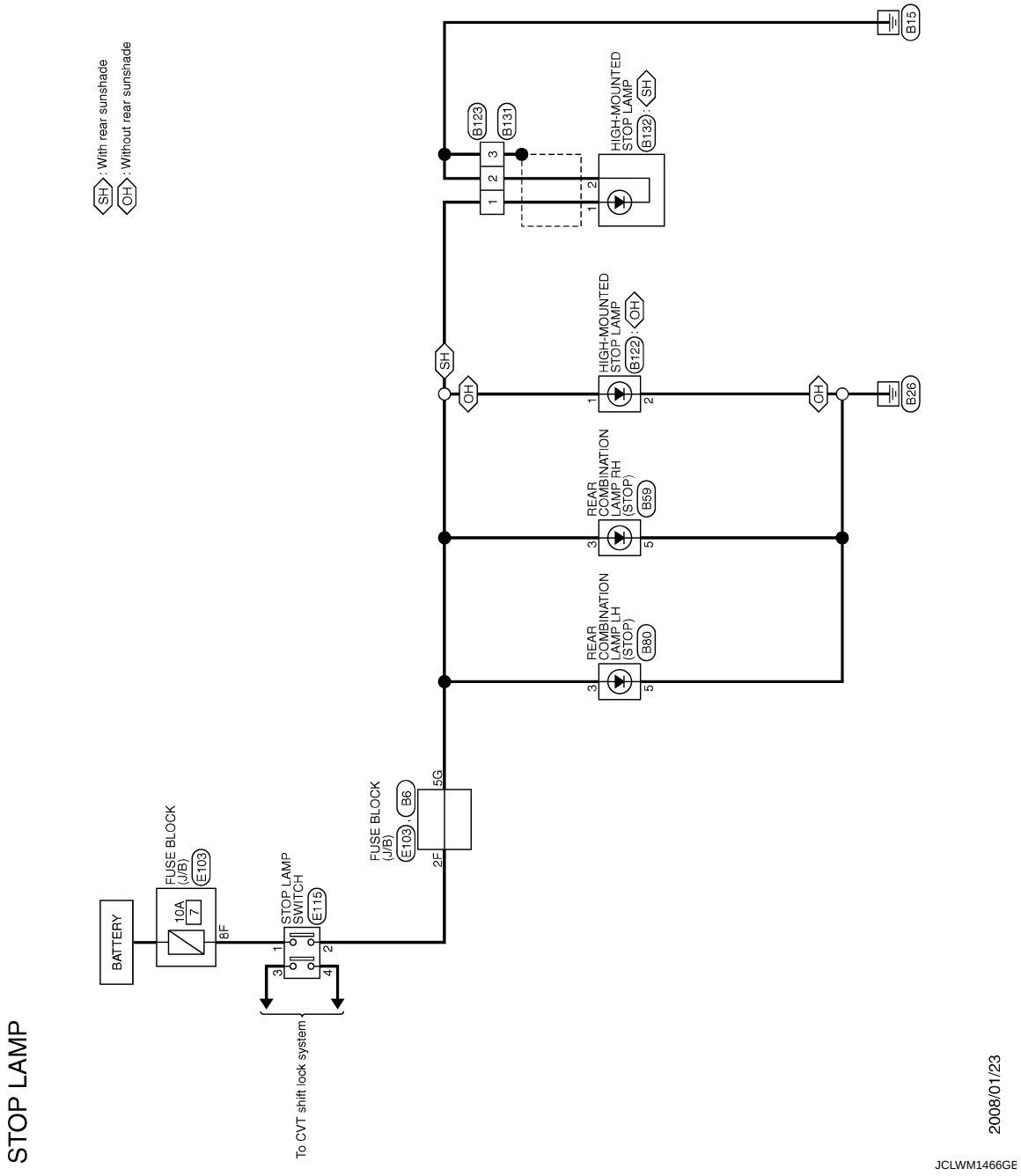
Terminal No.	Color of Wire	Signal Name [Specification]
1	G	–
2	B	–

JCLWM1475GE

STOP LAMP

Wiring Diagram - STOP LAMP -

INFOID:0000000003894341



STOP LAMP

Connector No.	B6
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS12FBR-CS

Terminal No.	Color of Wire	Signal Name [Specification]
5G	P	–

Connector No.	B59
Connector Name	REAR COMBINATION LAMP RH
Connector Type	RS06FGY-PR

Terminal No.	Color of Wire	Signal Name [Specification]
3	P	–
5	B	–

Connector No.	B80
Connector Name	REAR COMBINATION LAMP LH
Connector Type	RS06FGY-PR

Terminal No.	Color of Wire	Signal Name [Specification]
3	P	–
5	B	–

Connector No.	B122
Connector Name	HIGH-MOUNTED STOP LAMP (WITHOUT REAR SUNSHADE)
Connector Type	TK02MBR-P

Terminal No.	Color of Wire	Signal Name [Specification]
1	P	–
2	B/R	–

Connector No.	B123
Connector Name	WIRE TO WIRE
Connector Type	TK03FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	P	–
2	B/R	–
3	B/R	–

Connector No.	B131
Connector Name	WIRE TO WIRE
Connector Type	TK03MW

Terminal No.	Color of Wire	Signal Name [Specification]
1	O	–
2	W	–
3	SHIELD	–

Connector No.	B132
Connector Name	HIGH-MOUNTED STOP LAMP (WITH REAR SUNSHADE)
Connector Type	TK02MBR-P

Terminal No.	Color of Wire	Signal Name [Specification]
1	O	–
2	W	–

Connector No.	E103
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
2F	LG	–
9F	R	–

JCLWM1467GE

STOP LAMP

Connector No.	E115
Connector Name	STOP LAMP SWITCH
Connector Type	M04FW-LC

H.S



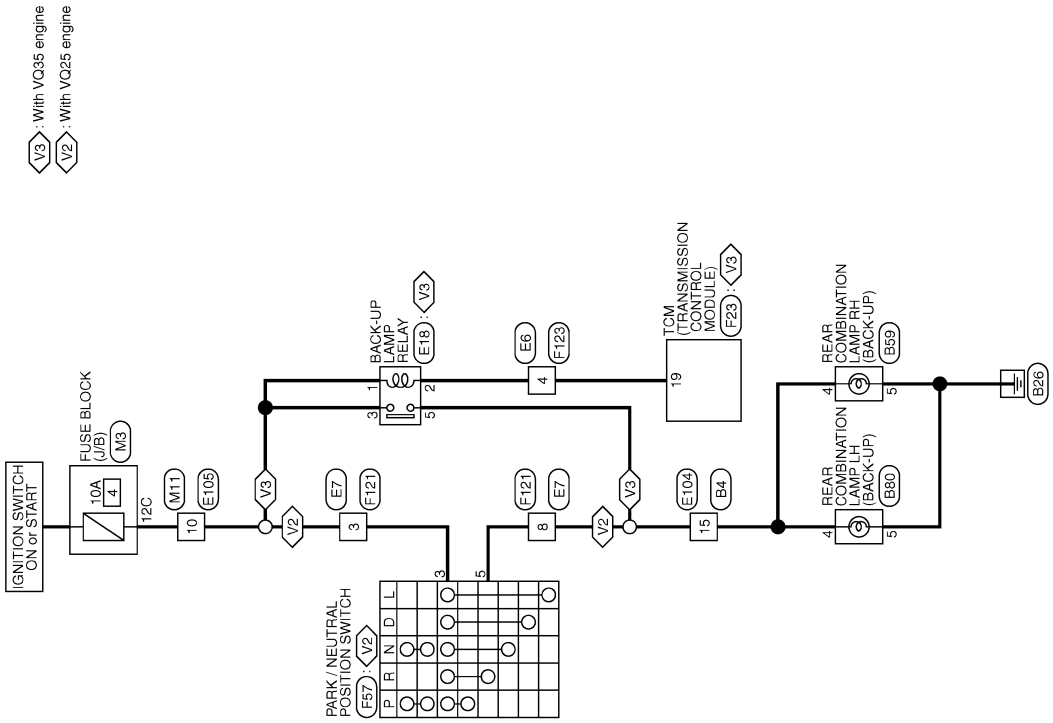
Terminal No.	Color of Wire	Signal Name [Specification]
1	R	-
2	LG	-
3	G	-
4	Y	-

JCLWM1468GE

BACK-UP LAMP

Wiring Diagram - BACK-UP LAMP -

INFOID:0000000003894342



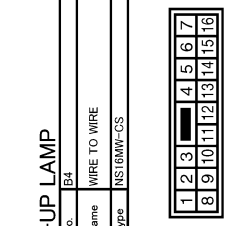
BACK-UP LAMP

2008/01/23

JCLWM1469GE

BACK–UP LAMP

Connector No.	B4
Connector Name	WIRE TO WIRE
Connector Type	NS16MW–CS



Terminal No.	Color of Wire	Signal Name [Specification]
15	R	–

Connector No.	B59
Connector Name	REAR COMBINATION LAMP RH
Connector Type	RS06FGY–PR



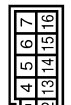
Terminal No.	Color of Wire	Signal Name [Specification]
4	R	–
5	B	–

Connector No.	B80
Connector Name	REAR COMBINATION LAMP LH
Connector Type	RS06FGY–PR



Terminal No.	Color of Wire	Signal Name [Specification]
4	R	–
5	B	–

Connector No.	E6
Connector Name	WIRE TO WIRE
Connector Type	TK16MGY–1V



Terminal No.	Color of Wire	Signal Name [Specification]
4	R	–

Connector No.	E7
Connector Name	WIRE TO WIRE
Connector Type	NS10MW–CS

Terminal No.	Color of Wire	Signal Name [Specification]
3	LG	–
8	R	–

Connector No.	E18
Connector Name	BACK–UP LAMP RELAY
Connector Type	MS02FL–M2–LC

Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	–
2	R	–
3	LG	–
5	R	–

Connector No.	E104
Connector Name	WIRE TO WIRE
Connector Type	NS16FW–CS

Terminal No.	Color of Wire	Signal Name [Specification]
15	R	–

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH70MW–CS10–M3

Terminal No.	Color of Wire	Signal Name [Specification]
10	LG	–

JCLWM1470GE

BACK–UP LAMP

Connector No.	F23
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Type	RH40FB-RZ8-L-RH

H.S.

31	32	33	34	35	36	37	38	39	40	47	48
21	22	23	24	25	26	27	28	29	30	45	46
11	12	13	14	15	16	17	18	19	20	43	44
1	2	3	4	5	6	7	8	9	10	41	42

Terminal No.	Color of Wire	Signal Name [Specification]
19	G/B	REV LAMP RELAY

Connector No.	F57
Connector Name	PARK / NEUTRAL POSITION SWITCH
Connector Type	YDX06FB-HS4

H.S.

8	4	3		7
2	6	5		1

Terminal No.	Color of Wire	Signal Name [Specification]
3	LG	–
5	P/B	–

Connector No.	F121
Connector Name	WIRE TO WIRE
Connector Type	NS10FW-CS

H.S.

4	3		2	1
10	9	8	7	6	5

Terminal No.	Color of Wire	Signal Name [Specification]
3	O	–
8	R	–

Connector No.	F123
Connector Name	WIRE TO WIRE
Connector Type	TK16FGY-1V

H.S.

7	6	5	4		3	2	1
16	15	14	13	12	11	10	9	8

Terminal No.	Color of Wire	Signal Name [Specification]
4	G/B	–

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS12FW-CS

H.S.

5C	4C		3C	2C	1C
12C	11C	10C	9C	8C	7C	6C

Terminal No.	Color of Wire	Signal Name [Specification]
12C	O	–

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH70FW-CS10-M3

H.S.

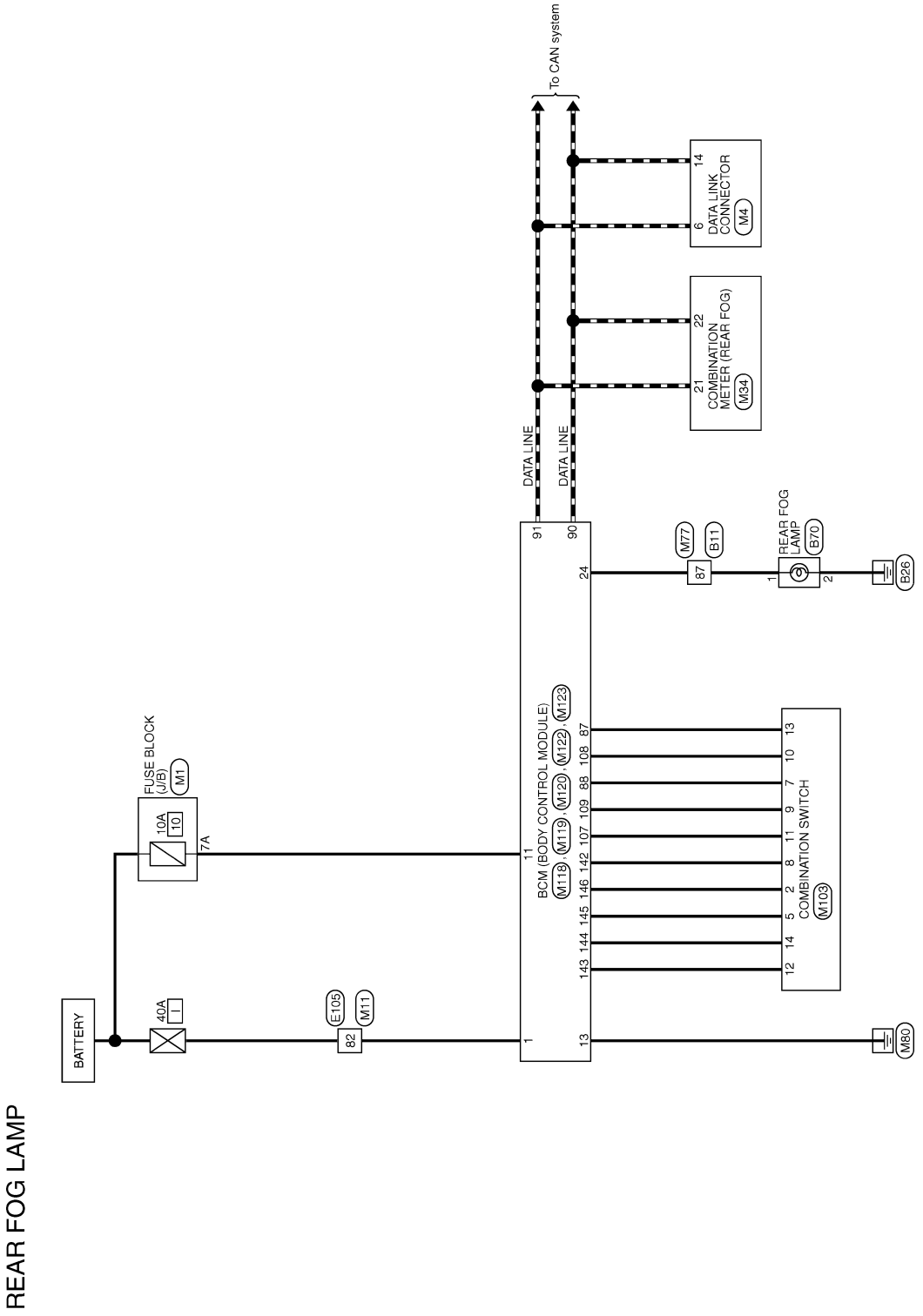
Terminal No.	Color of Wire	Signal Name [Specification]
10	O	–

JCLWM1471GE

REAR FOG LAMP SYSTEM

Wiring Diagram - REAR FOG LAMP -

INFOID:0000000003894343



REAR FOG LAMP

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS19

Terminal No.	Color of Wire	Signal Name [Specification]
87	G	–

Connector No.	B70
Connector Name	REAR FOG LAMP
Connector Type	RS02FBR



Terminal No.	Color of Wire	Signal Name [Specification]
1	G	–
2	B	–

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH70MW-CS10-M3



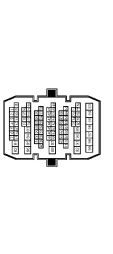
Terminal No.	Color of Wire	Signal Name [Specification]
82	LG	–

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS08FW-M2



Terminal No.	Color of Wire	Signal Name [Specification]
7A	Y/R	–

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



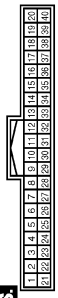
Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH70FW-CS10-M3



Terminal No.	Color of Wire	Signal Name [Specification]
82	W/B	–

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
21	L	CAN-H
22	P	CAN-L

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS19



Terminal No.	Color of Wire	Signal Name [Specification]
87	G	–

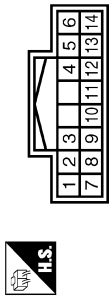
JCLWM1459GE

REAR FOG LAMP

Connector No.	M103
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
2	G/Y	OUTPUT 4
5	LG/R	OUTPUT 3
7	R/G	INPUT 3
8	LG/B	OUTPUT 5
9	R/B	INPUT 2
10	P/B	INPUT 4
11	R/W	INPUT 1
12	L/W	OUTPUT 1
13	R/Y	INPUT 5
14	G/B	OUTPUT 2

Connector No.	M118
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	M03FB-LC



Terminal No.	Color of Wire	Signal Name [Specification]
1	W/B	BAT (F/L)

Connector No.	M119
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS16FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
11	Y/R	BAT (FUSE)
13	B	GND

Connector No.	M120
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS12FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
24	G	REAR FOG LAMP OUTPUT

Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH

Terminal No.	Color of Wire	Signal Name [Specification]
87	R/Y	COMBI SW INPUT 5
88	R/G	COMBI SW INPUT 3
90	P	CAN-L
91	L	CAN-H
107	R/W	COMBI SW INPUT 1
108	P/B	COMBI SW INPUT 4
109	R/B	COMBI SW INPUT 2

Connector No.	M123
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH

Terminal No.	Color of Wire	Signal Name [Specification]
142	LG/B	COMBI SW OUTPUT 5
143	L/W	COMBI SW OUTPUT 1
144	G/B	COMBI SW OUTPUT 2
145	LG/R	COMBI SW OUTPUT 3
146	G/Y	COMBI SW OUTPUT 4

JCLWM1460GE

ECU DIAGNOSIS

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:0000000003959696

VALUES ON THE DIAGNOSIS TOOL

CONSULT-III MONITOR ITEM

Monitor Item	Condition	Value/Status
FR WIPER HI	Other than front wiper switch HI	Off
	Front wiper switch HI	On
FR WIPER LOW	Other than front wiper switch LO	Off
	Front wiper switch LO	On
FR WASHER SW	Front washer switch OFF	Off
	Front washer switch ON	On
FR WIPER INT	Other than front wiper switch INT	Off
	Front wiper switch INT	On
FR WIPER STOP	Front wiper is not in STOP position	Off
	Front wiper is in STOP position	On
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	Wiper intermittent dial position
TURN SIGNAL R	Other than turn signal switch RH	Off
	Turn signal switch RH	On
TURN SIGNAL L	Other than turn signal switch LH	Off
	Turn signal switch LH	On
TAIL LAMP SW	Other than lighting switch 1ST and 2ND	Off
	Lighting switch 1ST or 2ND	On
HI BEAM SW	Other than lighting switch HI	Off
	Lighting switch HI	On
HEAD LAMP SW 1	Other than lighting switch 2ND	Off
	Lighting switch 2ND	On
HEAD LAMP SW 2	Other than lighting switch 2ND	Off
	Lighting switch 2ND	On
PASSING SW	Other than lighting switch PASS	Off
	Lighting switch PASS	On
AUTO LIGHT SW	Other than lighting switch AUTO	Off
	Lighting switch AUTO	On
FR FOG SW	Front fog lamp switch OFF	Off
	Front fog lamp switch ON	On
RR FOG SW	Rear fog lamp switch OFF	Off
	Rear fog lamp switch ON	On
DOOR SW-DR	Driver door closed	Off
	Driver door opened	On
DOOR SW-AS	Passenger door closed	Off
	Passenger door opened	On
DOOR SW-RR	Rear RH door closed	Off
	Rear RH door opened	On

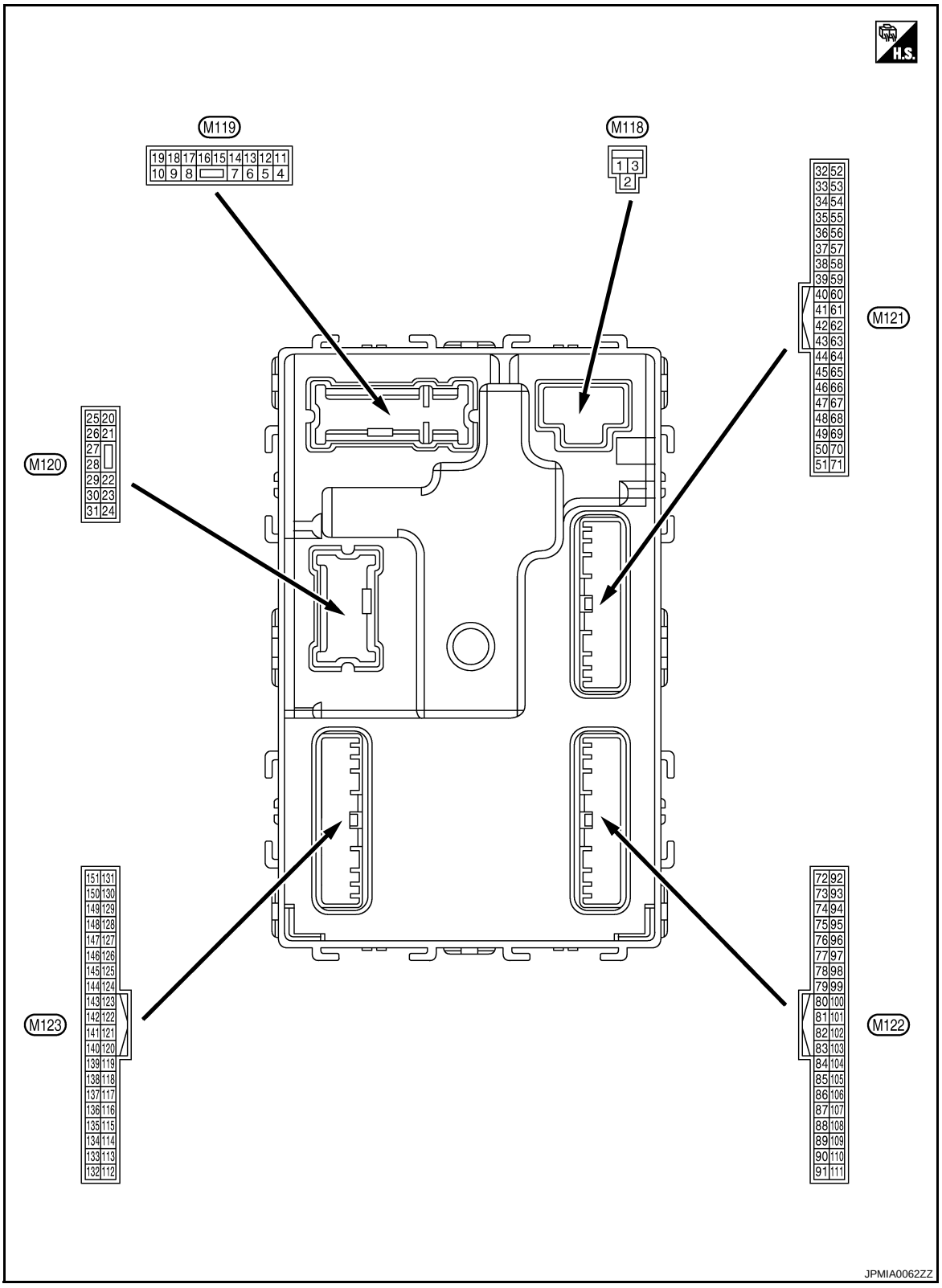
Monitor Item	Condition	Value/Status
DOOR SW-RL	Rear LH door closed	Off
	Rear LH door opened	On
DOOR SW-BK	**NOTE:** The item is indicated, but not monitored.	Off
CDL LOCK SW	Other than power door lock switch LOCK	Off
	Power door lock switch LOCK	On
CDL UNLOCK SW	Other than power door lock switch UNLOCK	Off
	Power door lock switch UNLOCK	On
KEY CYL LK-SW	**NOTE:** The item is indicated, but not monitored.	Off
KEY CYL UN-SW	**NOTE:** The item is indicated, but not monitored.	Off
KEY CYL SW-TR	**NOTE:** The item is indicated, but not monitored.	Off
HAZARD SW	Hazard switch is OFF	Off
	Hazard switch is ON	On
REAR DEF SW **NOTE:** At model with BOSE audio system this item is indicated, but is not monitored.	Rear window defogger switch is OFF	Off
	Rear window defogger switch is ON	On
TR CANCEL SW	**NOTE:** The item is indicated, but not monitored.	Off
TR/BD OPEN SW	Trunk lid opener switch OFF	Off
	While the trunk lid opener switch is turned ON	On
TRNK/HAT MNTR	Trunk lid closed	Off
	Trunk lid opened	On
RKE-LOCK	LOCK button of the key is not pressed	Off
	LOCK button of the key is pressed	On
RKE-UNLOCK	UNLOCK button of the key is not pressed	Off
	UNLOCK button of the key is pressed	On
RKE-TR/BD	TRUNK OPEN button of the key is not pressed	Off
	TRUNK OPEN button of the key is pressed	On
RKE-PANIC	**NOTE:** The item is indicated, but not monitored.	Off
RKE-P/W OPEN	**NOTE:** The item is indicated, but not monitored.	Off
RKE-MODE CHG	LOCK/UNLOCK button of the key is not pressed and held simultaneously	Off
	LOCK/UNLOCK button of the key is pressed and held simultaneously	On
OPTICAL SENSOR	Bright outside of the vehicle	Close to 5 V
	Dark outside of the vehicle	Close to 0 V
REQ SW -DR	Driver door request switch is not pressed	Off
	Driver door request switch is pressed	On
REQ SW -AS	Passenger door request switch is not pressed	Off
	Passenger door request switch is pressed	On

Monitor Item	Condition	Value/Status
REQ SW -RR	**NOTE:** The item is indicated, but not monitored.	Off
REQ SW -RR	**NOTE:** The item is indicated, but not monitored.	Off
REQ SW -BD/TR	Trunk lid opener request switch is not pressed	Off
	Trunk lid opener request switch is pressed	On
PUSH SW	Push-button ignition switch (push switch) is not pressed	Off
	Push-button ignition switch (push switch) is pressed	On
IGN RLY2 -F/B	Ignition switch in OFF or ACC position	Off
	Ignition switch in ON position	On
CLUCH SW	**NOTE:** The item is indicated, but not monitored.	Off
BRAKE SW 1	The brake pedal is not depressed	On
	The brake pedal is depressed	Off
DETE/CANCL SW	Selector lever in P position	Off
	Selector lever in any position other than P	On
SFT PN/N SW	Selector lever in any position other than P and N	Off
	Selector lever in P or N position	On
S/L -LOCK	Steering is locked	Off
	Steering is unlocked	On
S/L -UNLOCK	Steering is unlocked	Off
	Steering is locked	On
S/L RELAY-F/B	Ignition switch in OFF or ACC position	Off
	Ignition switch in ON position	On
UNLK SEN -DR	Driver door is unlocked	Off
	Driver door is locked	On
PUSH SW -IPDM	Push-button ignition switch (push-switch) is not pressed	Off
	Push-button ignition switch (push-switch) is pressed	On
IGN RLY1 -F/B	Ignition switch in OFF or ACC position	Off
	Ignition switch in ON position	On
DETE SW -IPDM	Selector lever in P position	Off
	Selector lever in any position other than P	On
SFT PN -IPDM	Selector lever in any position other than P and N	Off
	Selector lever in P or N position	On
SFT P -MET	Selector lever in any position other than P	Off
	Selector lever in P position	On
SFT N -MET	Selector lever in any position other than N	Off
	Selector lever in N position	On
ENGINE STATE	Engine stopped	Stop
	While the engine stalls	Stall
	At engine cranking	Crank
	Engine running	Run
S/L LOCK-IPDM	Steering is locked	Off
	Steering is unlocked	On

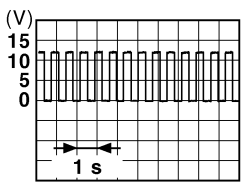
Monitor Item	Condition	Value/Status
S/L UNLK-IPDM	Steering is unlocked	Off
	Steering is locked	On
S/L RELAY-REQ	Ignition switch in OFF or ACC position	Off
	Ignition switch in ON position	On
VEH SPEED 1	While driving	Equivalent to speedometer reading
VEH SPEED 2	While driving	Equivalent to speedometer reading
DOOR STAT-DR	Driver door is locked	LOCK
	Wait with selective UNLOCK operation (5 seconds)	READY
	Driver door is unlocked	UNLOCK
DOOR STAT-AS	Passenger door is locked	LOCK
	Wait with selective UNLOCK operation (5 seconds)	READY
	Passenger door is unlocked	UNLOCK
ID OK FLAG	Ignition switch in ACC or ON position	Reset
	Ignition switch in OFF position	Set
PRMT ENG STRT	The engine start is prohibited	Reset
	The engine start is permitted	Set
PRMT RKE STRT	**NOTE:** The item is indicated, but not monitored.	Reset
KEY SW -SLOT	The key is not inserted into key slot	Off
	The key is inserted into key slot	On
RKE OPE COUN1	During the operation of the key	Operation frequency of the key
RKE OPE COUN2	**NOTE:** The item is indicated, but not monitored.	—
CONFRM ID ALL	The key ID that the key slot receives does not accord with any key ID registered to BCM.	Yet
	The key ID that the key slot receives accords with any key ID registered to BCM.	Done
CONFIRM ID4	The key ID that the key slot receives does not accord with the fourth key ID registered to BCM.	Yet
	The key ID that the key slot receives accords with the fourth key ID registered to BCM.	Done
CONFIRM ID3	The key ID that the key slot receives does not accord with the third key ID registered to BCM.	Yet
	The key ID that the key slot receives accords with the third key ID registered to BCM.	Done
CONFIRM ID2	The key ID that the key slot receives does not accord with the second key ID registered to BCM.	Yet
	The key ID that the key slot receives accords with the second key ID registered to BCM.	Done
CONFIRM ID1	The key ID that the key slot receives does not accord with the first key ID registered to BCM.	Yet
	The key ID that the key slot receives accords with the first key ID registered to BCM.	Done
TP 4	The ID of fourth key is not registered to BCM	Yet
	The ID of fourth key is registered to BCM	Done
TP 3	The ID of third key is not registered to BCM	Yet
	The ID of third key is registered to BCM	Done

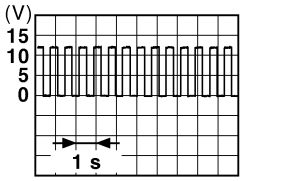
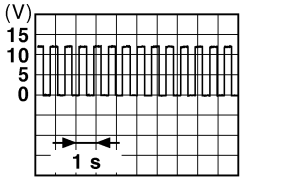
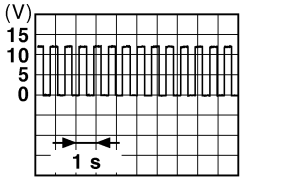
Monitor Item	Condition	Value/Status
TP 2	The ID of second key is not registered to BCM	Yet
	The ID of second key is registered to BCM	Done
TP 1	The ID of first key is not registered to BCM	Yet
	The ID of first key is registered to BCM	Done

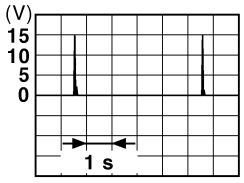
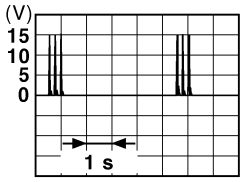
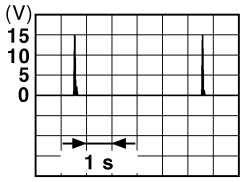
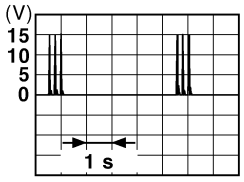
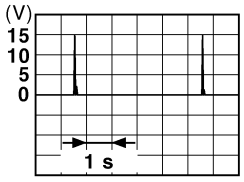
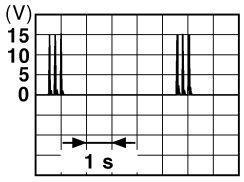
TERMINAL LAYOUT

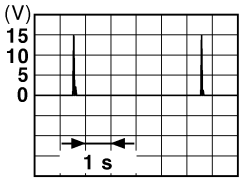
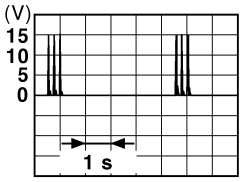
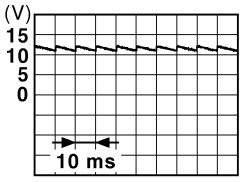
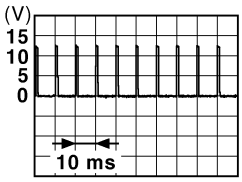


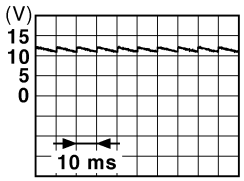
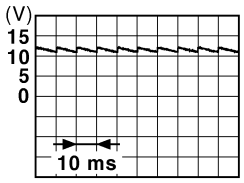
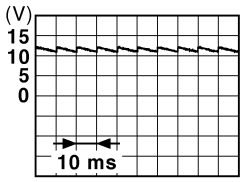
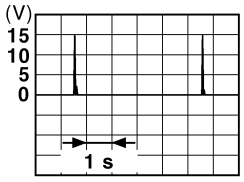
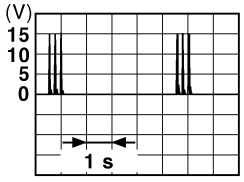
PHYSICAL VALUES

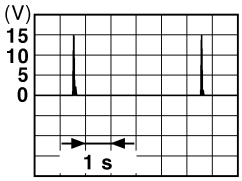
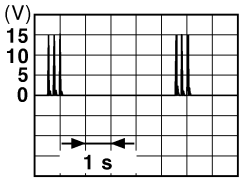
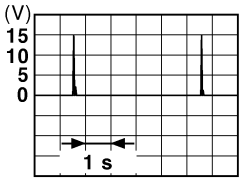
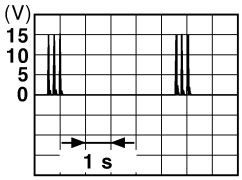
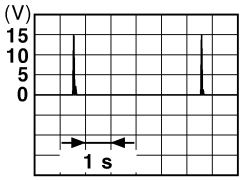
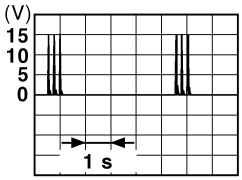
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
1 (W/B)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
2 (R/Y)	Ground	P/W power supply (BAT)	Output	Ignition switch OFF		Battery voltage
3 (L/W)	Ground	P/W power supply (IGN)	Output	Ignition switch ON		Battery voltage
4 (P/W)	Ground	Interior room lamp power supply	Output	Interior room lamp battery saver is activated. (Cuts the interior room lamp power supply)		0 V
				Interior room lamp battery saver is not activated. (Outputs the interior room lamp power supply)		Battery voltage
5 (G/Y)	Ground	Passenger door UNLOCK	Output	Passenger door	UNLOCK (Actuator is activated)	Battery voltage
					Other than UNLOCK (Actuator is not activated)	0 V
7 (R/W)	Ground	Step lamp	Output	Step lamp	ON	0 V
					OFF	Battery voltage
8 (V)	Ground	All doors LOCK	Output	All doors	LOCK (Actuator is activated)	Battery voltage
					Other than LOCK (Actuator is not activated)	0 V
9 (G)	Ground	Driver door UNLOCK	Output	Driver door	UNLOCK (Actuator is activated)	Battery voltage
					Other than UNLOCK (Actuator is not activated)	0 V
10 (G/Y)	Ground	Rear RH door and rear LH door UNLOCK	Output	Rear RH door and rear LH door	UNLOCK (Actuator is activated)	Battery voltage
					Other than UNLOCK (Actuator is not activated)	0 V
11 (Y/R)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
13 (B)	Ground	Ground	—	Ignition switch ON		0 V
15 (Y)	Ground	ACC indicator lamp	Output	Ignition switch	OFF (LOCK indicator is not illuminated)	Battery voltage
					ACC or ON	0 V
17 (G/B)	Ground	Turn signal RH (Front and door mirror)	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch RH	 PKID0926E 6.5 V

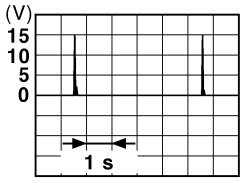
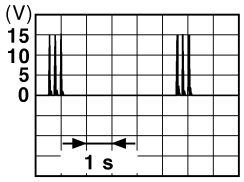
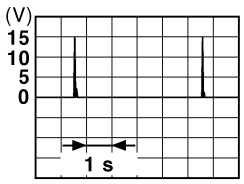
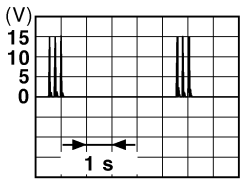
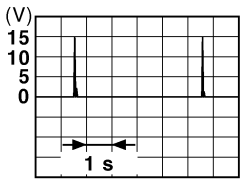
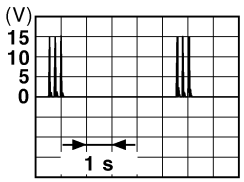
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
18 (G/Y)	Ground	Turn signal LH (Front and door mirror)	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch LH	 PKID0926E 6.5 V
19 (Y)	Ground	Room lamp timer control	Output	Interior room lamp	OFF	Battery voltage
					ON	0 V
20 (G/B)	Ground	Turn signal RH (Rear)	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch RH	 PKID0926E 6.5 V
23 (R)	Ground	Trunk lid opening	Output	Trunk lid	OPEN (Trunk lid opener actuator is activated)	Battery voltage
					Other than OPEN (Trunk lid opener actuator is not activated)	0 V
24 (G)	Ground	Rear fog lamp	Output	Rear fog lamp	OFF	0 V
					ON	Battery voltage
25 (G/Y)	Ground	Turn signal LH (Rear)	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch LH	 PKID0926E 6.5 V
30 (V/W)	Ground	Trunk room lamp	Output	Trunk room lamp	OFF	0 V
					ON	Battery voltage

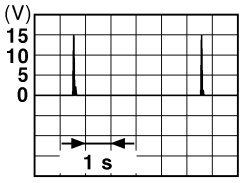
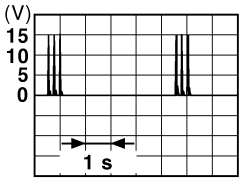
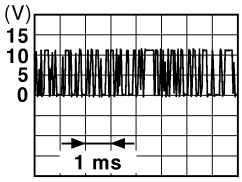
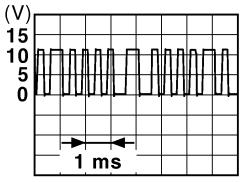
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
34 (B)	Ground	Trunk room antenna (-)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	 JMKIA0062GB
					When Intelligent Key is not in the passenger compartment	 JMKIA0063GB
35 (W)	Ground	Trunk room antenna (+)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	 JMKIA0062GB
					When Intelligent Key is not in the passenger compartment	 JMKIA0063GB
38 (L/O)	Ground	Rear bumper antenna (-)	Output	When the trunk lid opener request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB

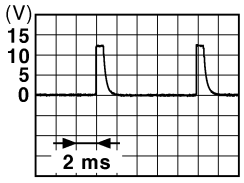
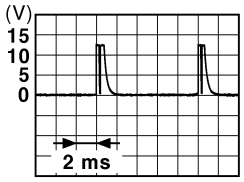
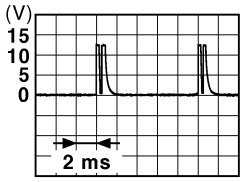
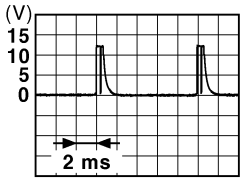
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
39 (BR/W)	Ground	Rear bumper antenna (+)	Output	When the trunk lid opener request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB
47 (BR/W)	Ground	Ignition relay (IPDM E/R) control	Output	Ignition switch	OFF or ACC	Battery voltage
					ON	0 V
50 (W)	Ground	Trunk room lamp switch	Input	Trunk room lamp switch	OFF (When trunk lid closes)	 JPMIA0011GB 11.8 V
					ON (When trunk lid opens)	0 V
52 (R)	Ground	Starter relay control	Output	Ignition switch ON	When selector lever is in P or N position	Battery voltage
					When selector lever is not in P or N position	0.3 V
				Ignition switch OFF		0 V
61 (G/R)	Ground	Trunk lid request switch	Input	Trunk lid request switch	ON (Pressed)	0 V
					OFF (Not pressed)	 JPMIA0016GB 1.0 V
64 (GR)	Ground	Request switch buzzer	Output	Request switch buzzer	Sounding	0 V
					Not sounding	Battery voltage

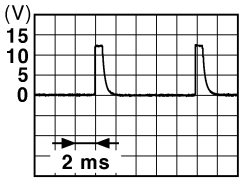
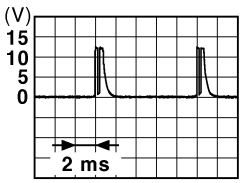
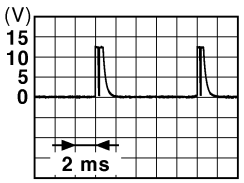
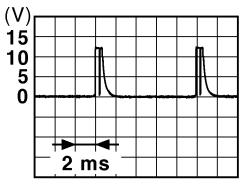
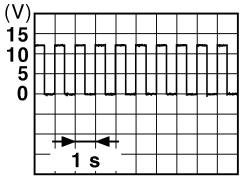
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
67 (L/R)	Ground	Trunk lid opener switch	Input	Trunk lid opener switch	Pressed	0 V
					Not pressed	 JPMIA0011GB 11.8 V
68 (R/W)	Ground	Rear RH door switch	Input	Rear RH door switch	OFF (When rear RH door closes)	 JPMIA0011GB 11.8 V
					ON (When rear RH door opens)	0 V
69 (R/B)	Ground	Rear LH door switch	Input	Rear LH door switch	OFF (When rear LH door closes)	 JPMIA0011GB 11.8 V
					ON (When rear LH door opens)	0 V
72 (B/R)	Ground	Room antenna 2 (-) (center console)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	 JMKIA0062GB
					When Intelligent Key is not in the passenger compartment	 JMKIA0063GB

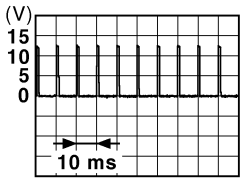
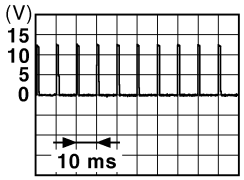
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
73 (W/R)	Ground	Room antenna 2 (+) (center console)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	 JMKIA0062GB
					When Intelligent Key is not in the passenger compartment	 JMKIA0063GB
74 (B/Y)	Ground	Passenger door antenna (-)	Output	When the passenger door request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB
75 (LG)	Ground	Passenger door antenna (+)	Output	When the passenger door request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB

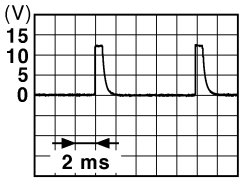
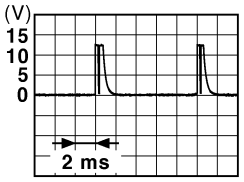
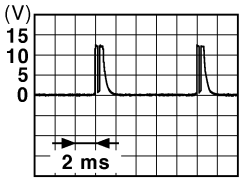
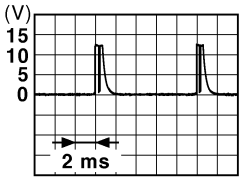
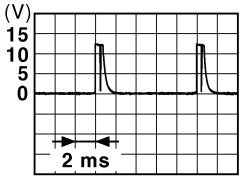
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
76 (V)	Ground	Driver door antenna (-)	Output	When the driver door request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB
77 (P)	Ground	Driver door antenna (+)	Output	When the driver door request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0062GB
					When Intelligent Key is not in the antenna detection area	 JMKIA0063GB
78 (R)	Ground	Room antenna 1 (-) (instrument panel)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	 JMKIA0062GB
					When Intelligent Key is not in the passenger compartment	 JMKIA0063GB

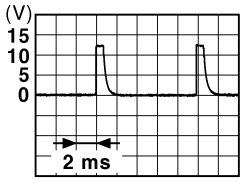
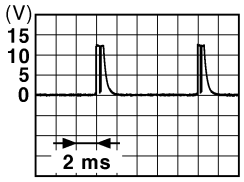
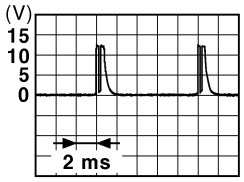
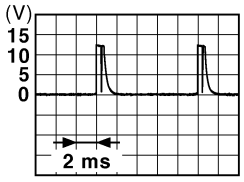
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
79 (G)	Ground	Room antenna 1 (+) (instrument panel)	Output	Ignition switch OFF	When Intelligent Key is in the passenger compartment	 JMKIA0062GB
					When Intelligent Key is not in the passenger compartment	 JMKIA0063GB
80 (G/O)	Ground	NATS antenna amp (built in key slot)	Input/ Output	During waiting	Ignition switch is pressed while inserting the key into the key slot.	Just after pressing ignition switch. Pointer of tester should move.
81 (O)	Ground	NATS antenna amp (built in key slot)	Input/ Output	During waiting	Ignition switch is pressed while inserting the key into the key slot.	Just after pressing ignition switch. Pointer of tester should move.
82 (R/B)	Ground	Ignition relay [fuse block (J/B)] control	Output	Ignition switch	OFF or ACC	0 V
					ON	Battery voltage
83 (L/O)	Ground	Remote keyless entry receiver communication	Input/ Output	During waiting		 JMKIA0064GB
				When operating either button on the key		 JMKIA0065GB

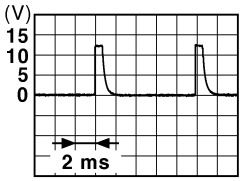
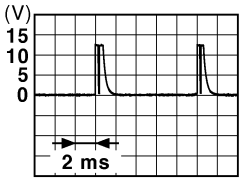
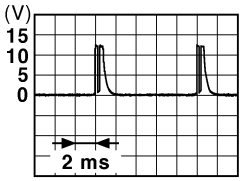
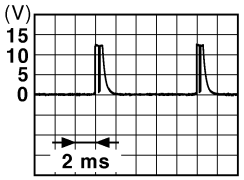
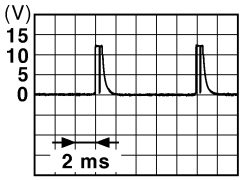
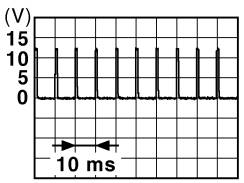
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
87 (R/Y)	Ground	Combination switch INPUT 5	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 JPMIA0041GB 1.4 V
					Front fog lamp switch ON (Wiper intermittent dial 4)	 JPMIA0037GB 1.3 V
					Rear fog lamp switch ON (Wiper intermittent dial 4)	 JPMIA0142GB 1.2 V
					Any of the conditions below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 6 • Wiper intermittent dial 7	 JPMIA0040GB 1.3 V

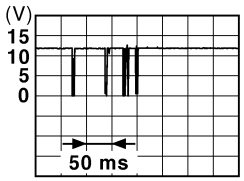
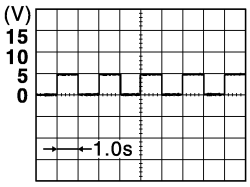
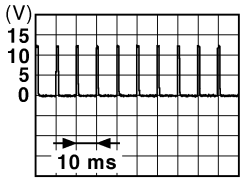
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
		Signal name	Input/ Output			
+	–					
88 (R/G)	Ground	Combination switch INPUT 3	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 JPMIA0041GB 1.4 V
					Lighting switch HI (Wiper intermittent dial 4)	 JPMIA0036GB 1.3 V
					Lighting switch 2ND (Wiper intermittent dial 4)	 JPMIA0037GB 1.3 V
					Any of the conditions below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3	 JPMIA0040GB 1.3 V
89 (BR)	Ground	Push-button ignition switch (push switch)	Input	Push-button ignition switch (push switch)	Pressed	0 V
					Not pressed	Battery voltage
90 (P)	Ground	CAN-L	Input/ Output	—		—
91 (L)	Ground	CAN-H	Input/ Output	—		—
92 (R/L)	Ground	Key slot illumination	Output	Key slot illumination	OFF	Battery voltage
					Blinking	 JPMIA0015GB 6.5 V
					ON	0 V

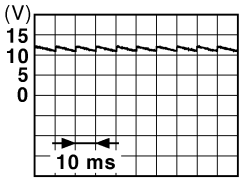
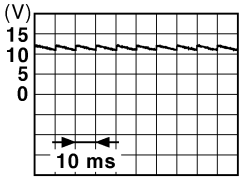
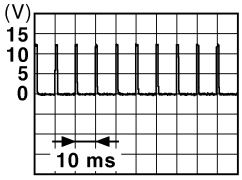
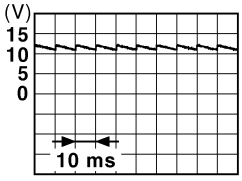
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
93 (Y)	Ground	ON indicator lamp	Output	Ignition switch	OFF (LOCK indicator is not illuminated)	Battery voltage
					ON or ACC	0 V
95 (L)	Ground	ACC relay control	Output	Ignition switch	OFF	0 V
					ACC or ON	Battery voltage
96 (Y/R)	Ground	Control device (detention switch) power supply	Output	—		Battery voltage
97 (L/O)	Ground	Steering lock condition No. 1	Input	Steering lock	LOCK status	0 V
					UNLOCK status	Battery voltage
98 (G/R)	Ground	Steering lock condition No. 2	Input	Steering lock	LOCK status	Battery voltage
					UNLOCK status	0 V
99 (G/B)	Ground	Selector lever P position switch	Input	Selector lever	P position	0 V
					Any position other than P	Battery voltage
100 (P/L)	Ground	Passenger door request switch	Input	Passenger door request switch	ON (Pressed)	0 V
					OFF (Not pressed)	 JPMIA0016GB 1.0 V
101 (B/W)	Ground	Driver door request switch	Input	Driver door request switch	ON (Pressed)	0 V
					OFF (Not pressed)	 JPMIA0016GB 1.0 V
102 (Y)	Ground	Blower fan motor relay control	Output	Ignition switch	OFF or ACC	0 V
					ON	Battery voltage
103 (L/R)	Ground	Remote keyless entry receiver power supply	Output	Ignition switch OFF		Battery voltage
106 (G/Y)	Ground	Steering wheel lock unit power supply	Output	Ignition switch	OFF or ACC	Battery voltage
					ON	0 V

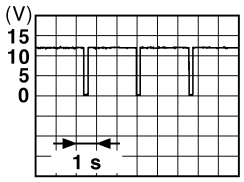
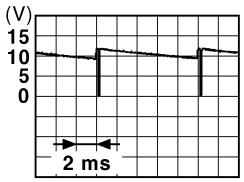
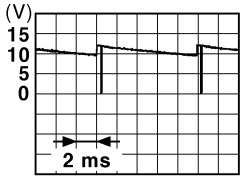
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
107 (R/W)	Ground	Combination switch INPUT 1	Input	Combination switch (Wiper intermit-tent dial 4)	All switch OFF	 JPMIA0041GB 1.4 V
					Turn signal switch LH	 JPMIA0037GB 1.3 V
					Turn signal switch RH	 JPMIA0036GB 1.3 V
					Front wiper switch LO	 JPMIA0038GB 1.3 V
					Front washer switch ON	 JPMIA0039GB 1.3 V

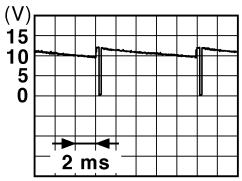
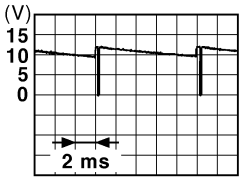
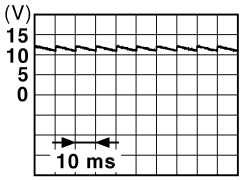
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
108 (P/B)	Ground	Combination switch INPUT 4	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 JPMIA0041GB 1.4 V
					Lighting switch AUTO (Wiper intermittent dial 4)	 JPMIA0038GB 1.3 V
					Lighting switch 1ST (Wiper intermittent dial 4)	 JPMIA0036GB 1.3 V
					Any of the conditions below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6	 JPMIA0039GB 1.3 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
109 (R/B)	Ground	Combination switch INPUT 2	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	 JPMIA0041GB 1.4 V
					Lighting switch PASS	 JPMIA0037GB 1.3 V
					Lighting switch 2ND	 JPMIA0036GB 1.3 V
					Front wiper switch INT	 JPMIA0038GB 1.3 V
					Front wiper switch HI	 JPMIA0040GB 1.3 V
110 (G/O)	Ground	Hazard switch	Input	Hazard switch	ON	0 V
					OFF	 JPMIA0012GB 1.1 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
111 (L/Y)	Ground	Steering lock unit communication	Input/ Output	Steering lock	LOCK status	Battery voltage
					LOCK or UNLOCK	 JMKIA0066GB
					For 15 seconds after UNLOCK	Battery voltage
					15 seconds or later after UNLOCK	0 V
113 (P/B)	Ground	Optical sensor	Input	Ignition switch ON	When bright outside of the vehicle	Close to 5 V
					When dark outside of the vehicle	Close to 0 V
115 (L)	Ground	Shock sensor	Input	Ignition switch	OFF	0 V
					ACC	5.0 V
					ON	 JPMIA1034GB 2.5 V
116 (R/W)	Ground	Fuse check (Stop lamp switch)	Input	—		Battery voltage
118 (O/L)	Ground	Stop lamp switch	Input	Stop lamp switch	OFF (Brake pedal is not depressed)	0 V
					ON (Brake pedal is depressed)	Battery voltage
119 (G/W)	Ground	Front door lock assembly driver side (unlock sensor)	Input	Driver door	LOCK status (unlock sensor switch OFF)	 JPMIA0012GB 1.1 V
					UNLOCK status (unlock sensor switch ON)	0 V
121 (Y)	Ground	Key slot switch	Input	When the key is inserted into key slot		Battery voltage
				When the key is not inserted into key slot		0 V
122 (V/R)	Ground	ACC feedback	Input	Ignition switch	OFF	0 V
					ACC or ON	Battery voltage
123 (G/W)	Ground	IGN feedback	Input	Ignition switch	OFF or ACC	0 V
					ON	Battery voltage

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
124 (R/B)	Ground	Passenger door switch	Input	Passenger door switch	OFF (When passenger door closes)	 JPMIA0011GB 11.8 V
					ON (When passenger door opens)	0 V
128 (GR)	Ground	Door lock and unlock switch LOCK	Input	Door lock and unlock switch [power window main switch or front power window switch (passenger side)]	NEUTRAL position	 JPMIA0011GB 11.8 V
					LOCK position	0 V
130* (GR/W)	Ground	Rear window defogger switch	Input	Ignition switch ON	Rear window defogger switch OFF	 JPMIA0012GB 1.1 V
					Rear window defogger switch ON	0 V
131 (GR/R)	Ground	Door lock and unlock switch UNLOCK	Input	Door lock and unlock switch [power window main switch or front power window switch (passenger side)]	NEUTRAL position	 JPMIA0011GB 11.8 V
					UNLOCK position	0 V
133 (W)	Ground	Push-button ignition switch illumination	Output	Push-button ignition switch illumination	ON	9.5 V
					OFF	0 V
134 (R)	Ground	LOCK indicator lamp	Output	LOCK indicator lamp	OFF	Battery voltage
					ON	0 V
137 (P)	Ground	Receiver and sensor ground	Input	Ignition switch ON		0 V
138 (V/W)	Ground	Receiver and sensor power supply output	Output	Ignition switch	OFF	0 V
					ACC or ON	5.0 V
140 (R/G)	Ground	Selector lever P/N position	Input	Selector lever	P or N position	Battery voltage
					Except P and N positions	0 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
141 (L/O)	Ground	Security indicator	Output	Security indicator	ON	0 V
					Blinking	 JPMIA0014GB 11.3 V
					OFF	Battery voltage
142 (LG/B)	Ground	Combination switch OUTPUT 5	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Lighting switch 1ST	 JPMIA0031GB 10.7 V
					Lighting switch HI	
					Lighting switch 2ND	
					Turn signal switch RH	
143 (L/W)	Ground	Combination switch OUTPUT 1	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front wiper switch HI (Wiper intermittent dial 4)	 JPMIA0032GB 10.7 V
					Any of the conditions below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3 • Wiper intermittent dial 6 • Wiper intermittent dial 7	
144 (G/B)	Ground	Combination switch OUTPUT 2	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front washer switch ON (Wiper intermittent dial 4)	 JPMIA0033GB 10.7 V
					Any of the conditions below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6	

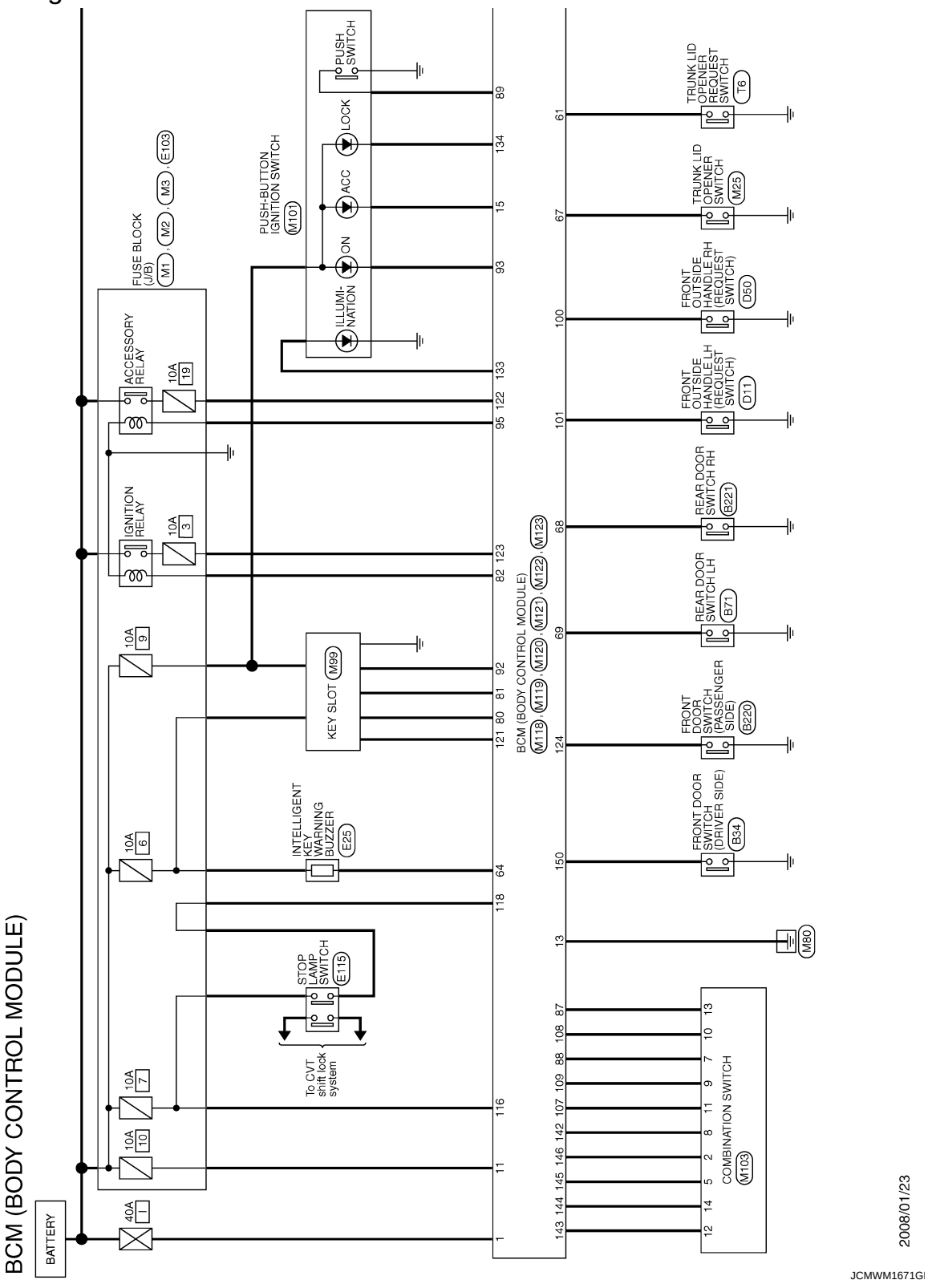
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
145 (LG/R)	Ground	Combination switch OUTPUT 3	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Front wiper switch INT	 JPMIA0034GB 10.7 V
					Front wiper switch LO	
					Lighting switch AUTO	
					Rear fog lamp switch ON	
146 (G/Y)	Ground	Combination switch OUTPUT 4	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Front fog lamp switch ON	 JPMIA0035GB 10.7 V
					Lighting switch 2ND	
					Lighting switch PASS	
					Turn signal switch LH	
150 (SB)	Ground	Driver door switch	Input	Driver door switch	OFF (When driver door closes)	 JPMIA0011GB 11.8 V
					ON (When driver door opens)	0 V
151 (G/R)	Ground	Rear window defogger relay	Output	Rear window defogger	Active	0 V
					Not activated	Battery voltage

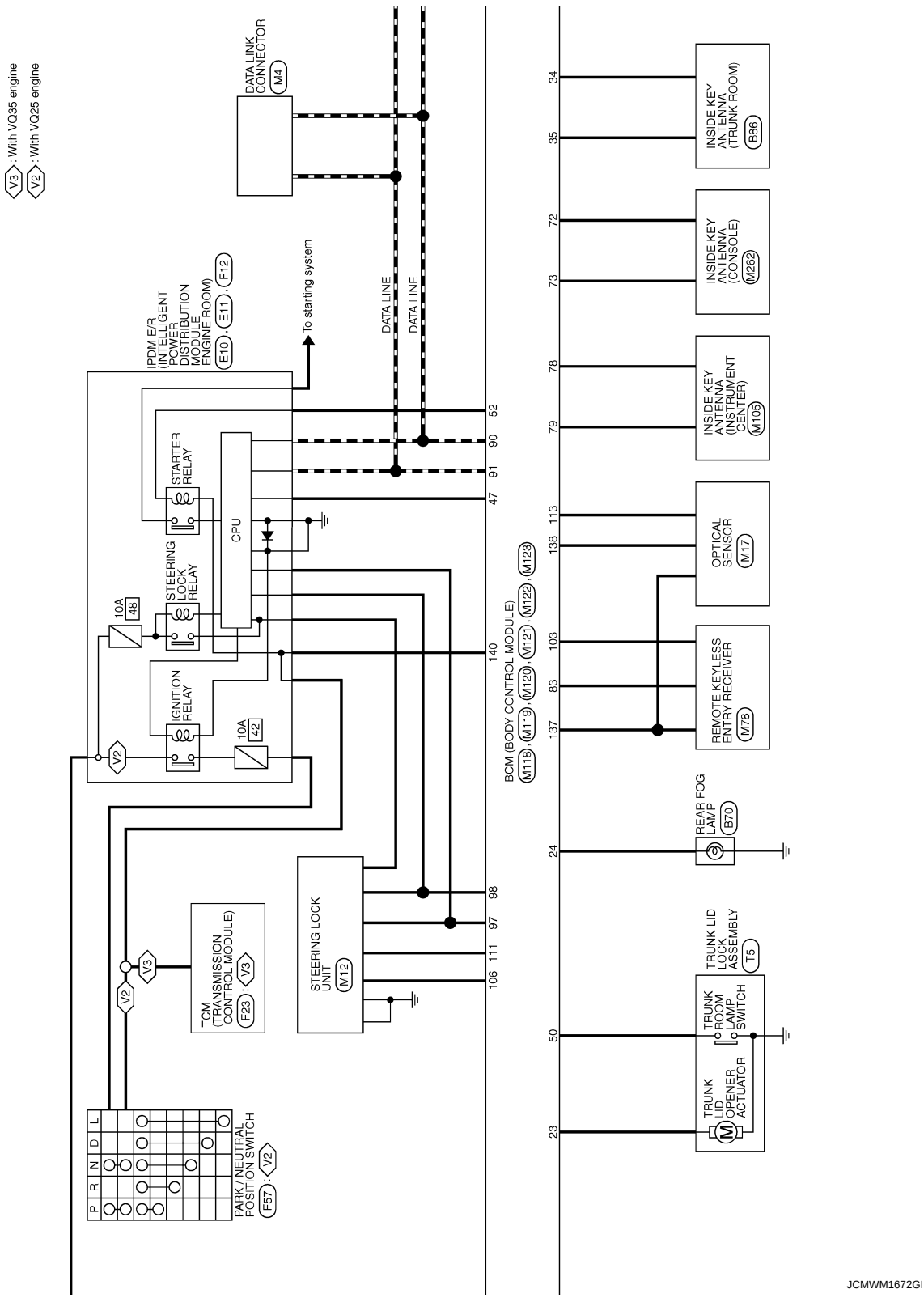
NOTE:

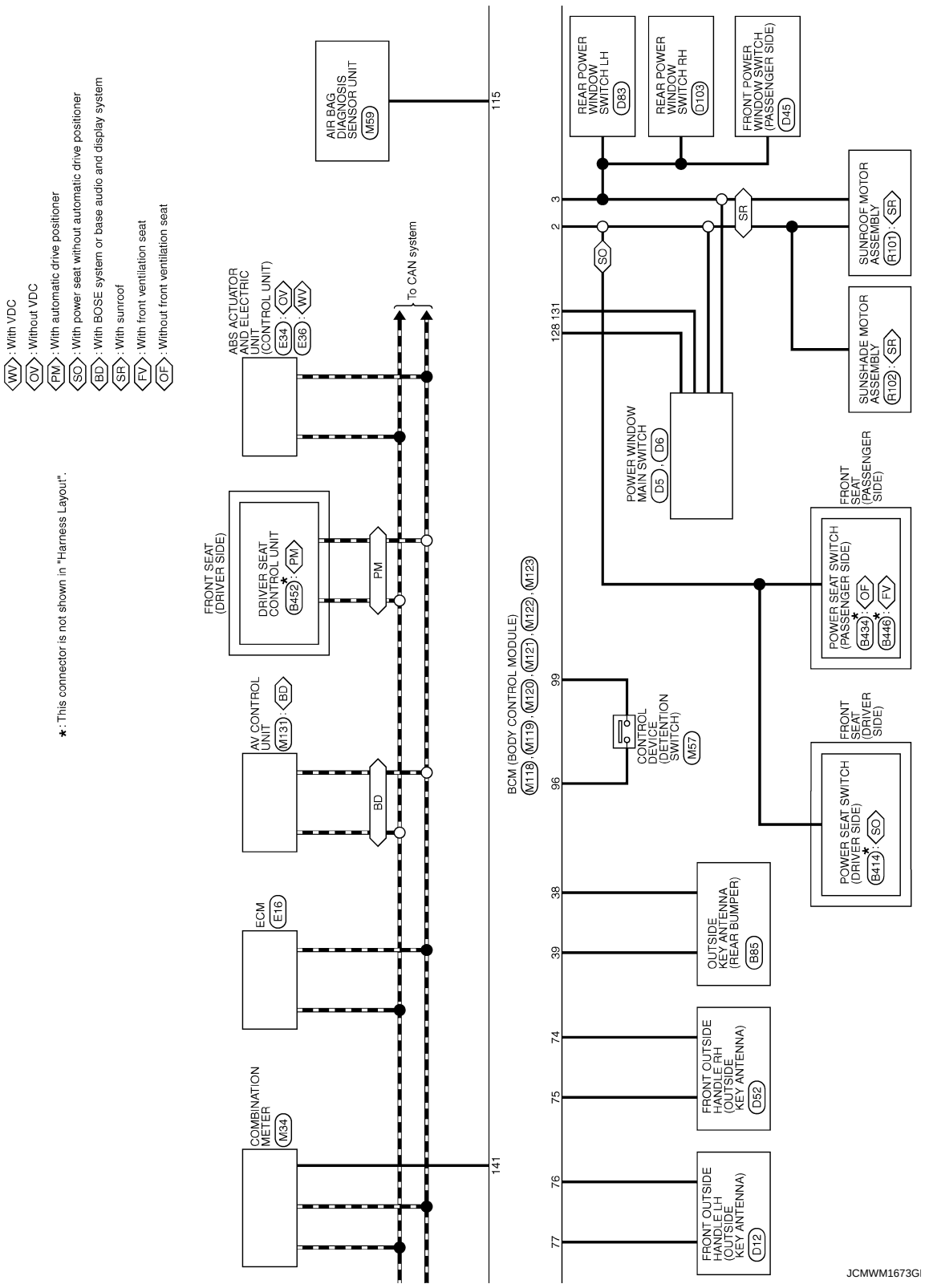
*: Without BOSE audio system

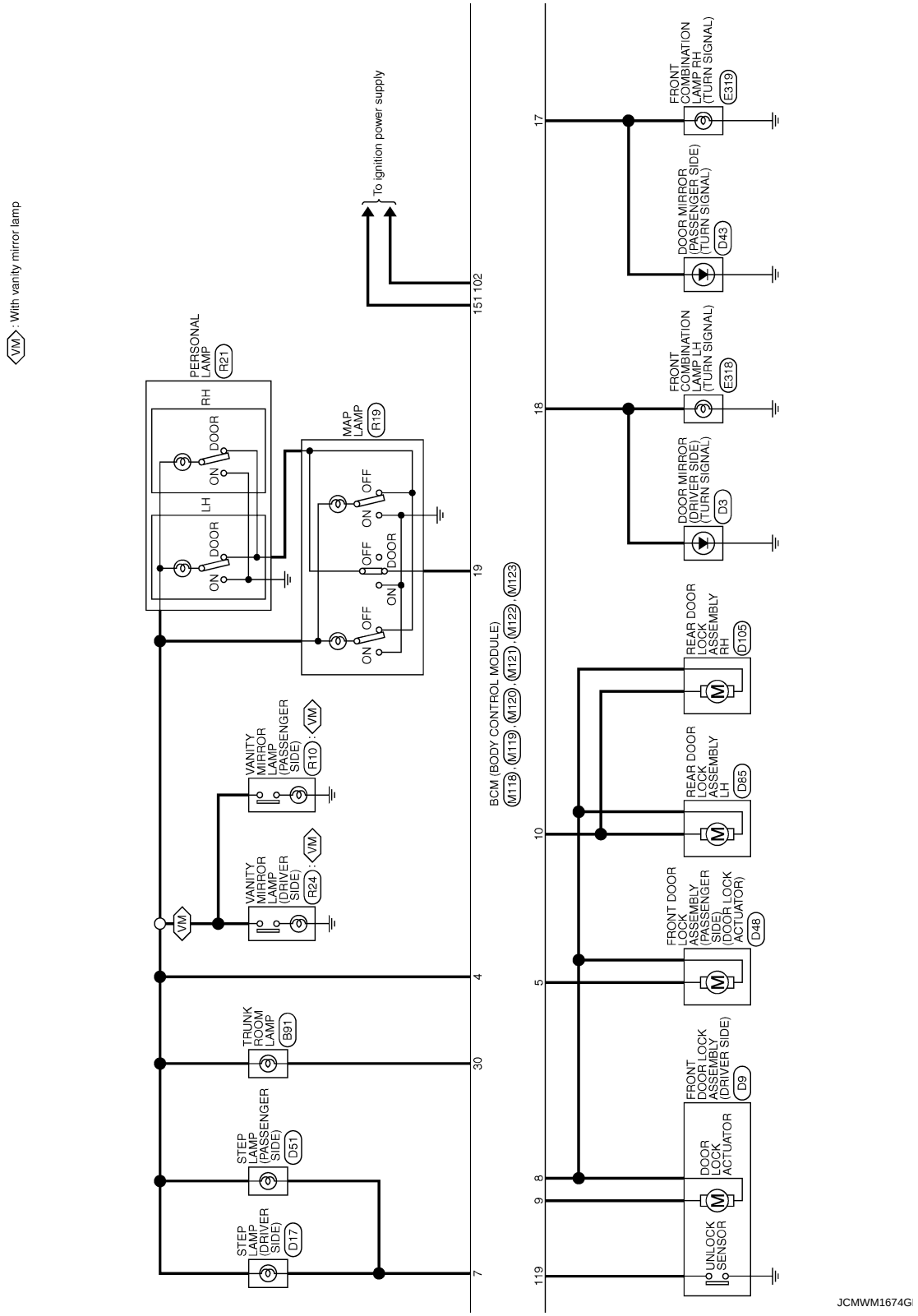
Wiring Diagram - BCM -

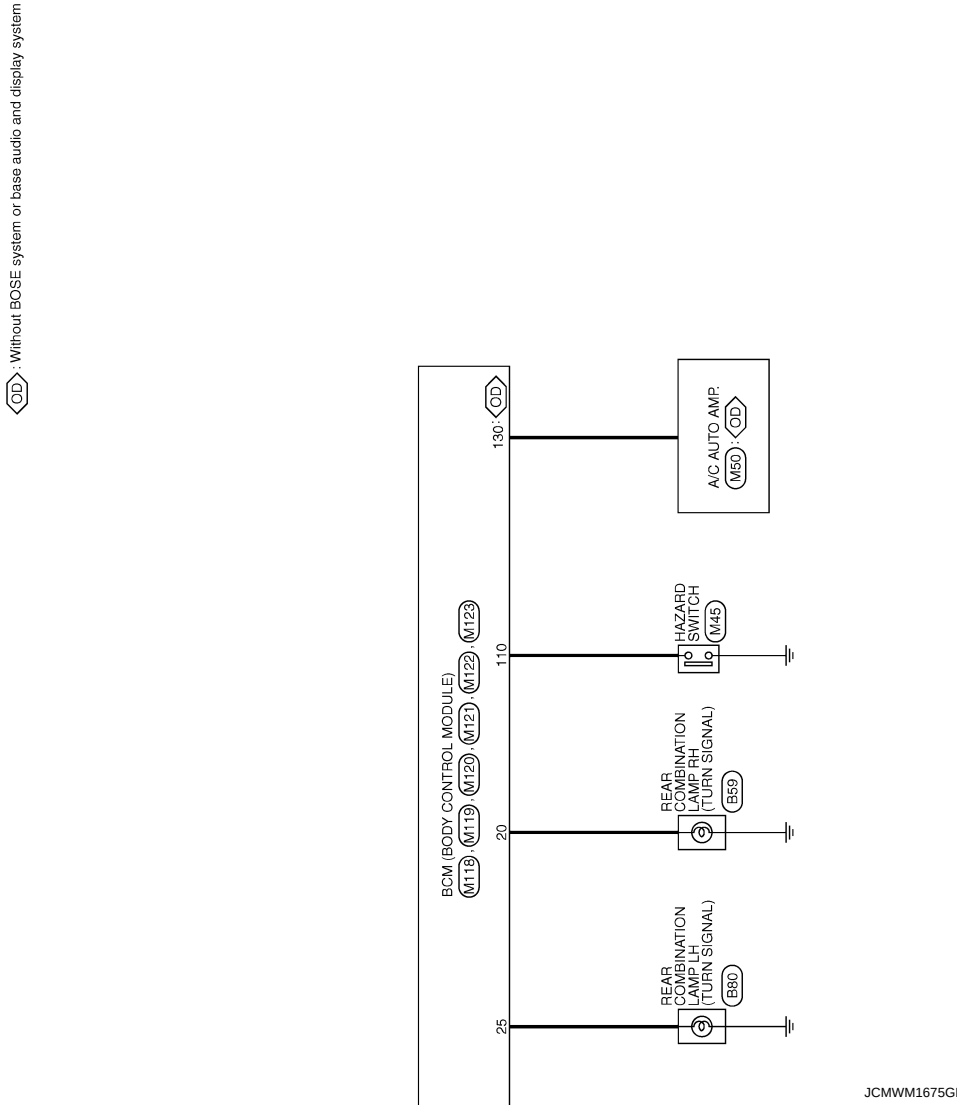
INFOID:0000000003959697




V3 : With VQ35 engine
V2 : With VQ25 engine
DATA LINK CONNECTOR M4
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) E10, E11, F12
To starting system
DATA LINE
DATA LINE
STARTER RELAY
CPU
STEERING LOCK RELAY
IGNITION RELAY
10A 48
10A 42
V2
V3
TCM (TRANSMISSION CONTROL MODULE) F23
STEERING LOCK UNIT M12
PARK / NEUTRAL POSITION SWITCH F57
P R N D L
BCM (BODY CONTROL MODULE) M118, M119, M120, M121, M122, M123
52 90 91 47 140 98 97 111 106
34 35 72 73 78 79 113 138 103 83 137 24 50 23
INSIDE KEY ANTENNA (TRUNK ROOM) B86
INSIDE KEY ANTENNA (CONSOLE) M262
INSIDE KEY ANTENNA (INSTRUMENT CENTER) M105
OPTICAL SENSOR M17
REMOTE KEYLESS ENTRY RECEIVER M78
REAR FOG LAMP B70
TRUNK LID LOCK ASSEMBLY T5
TRUNK ROOM LAMP SWITCH
TRUNK LID OPENER ACTUATOR
JCMWM1672G


WV : With VDC
OV : Without VDC
PM : With automatic drive positioner
SO : With power seat without automatic drive positioner
BD : With BOSE system or base audio and display system
SR : With sunroof
FV : With front ventilation seat
OF : Without front ventilation seat
*: This connector is not shown in "Harness Layout".
AIR BAG DIAGNOSIS SENSOR UNIT M59
115
To CAN system
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) E34 OV E36 WV
FRONT SEAT (DRIVER SIDE)
DRIVER SEAT CONTROL UNIT* B452 PM
PM
AV CONTROL UNIT M131 BD
BD
ECM E16
COMBINATION METER M34
141
REAR POWER WINDOW SWITCH LH D83
REAR POWER WINDOW SWITCH RH D103
FRONT POWER WINDOW SWITCH (PASSENGER SIDE) D45
3
2
SO
SR
SUNROOF MOTOR ASSEMBLY R101 SR
SUNSHADE MOTOR ASSEMBLY R102 SR
128 131
POWER WINDOW MAIN SWITCH D5 D6
FRONT SEAT (PASSENGER SIDE)
POWER SEAT SWITCH (PASSENGER SIDE)* B434 OF B446 FV
FRONT SEAT (DRIVER SIDE)
POWER SEAT SWITCH (DRIVER SIDE)* B413 SO
BCM (BODY CONTROL MODULE) M118 M119 M120 M121 M122 M123
99
96
CONTROL DEVICE (DETENTION SWITCH) M57
38
39
OUTSIDE KEY ANTENNA (REAR BUMPER) B85
74
75
FRONT OUTSIDE HANDLE RH (OUTSIDE KEY ANTENNA) D52
76
77
FRONT OUTSIDE HANDLE LH (OUTSIDE KEY ANTENNA) D12
JCMWM1673GI


VM : With vanity mirror lamp
To ignition power supply
151 102
PERSONAL LAMP R21
RH
DOOR
ON
LH
DOOR
ON
MAP LAMP R19
ON OFF
OFF ON DOOR
ON OFF
VANITY MIRROR LAMP (PASSENGER SIDE) R10 : VM
VANITY MIRROR LAMP (DRIVER SIDE) R24 : VM
VM
TRUNK ROOM LAMP B91
STEP LAMP (PASSENGER SIDE) D51
STEP LAMP (DRIVER SIDE) D17
4
30
19
7
BCM (BODY CONTROL MODULE)
M118, M119, M120, M121, M122, M123
17
18
10
5
8
9
11
9
FRONT COMBINATION LAMP RH (TURN SIGNAL) E319
DOOR MIRROR (PASSENGER SIDE) (TURN SIGNAL) D43
FRONT COMBINATION LAMP LH (TURN SIGNAL) E318
DOOR MIRROR (DRIVER SIDE) (TURN SIGNAL) D3
REAR DOOR LOCK ASSEMBLY RH D105
REAR DOOR LOCK ASSEMBLY LH D85
FRONT DOOR LOCK ASSEMBLY (PASSENGER SIDE) (DOOR LOCK ACTUATOR) D48
FRONT DOOR LOCK ASSEMBLY (DRIVER SIDE) D9
DOOR LOCK ACTUATOR
UNLOCK SENSOR
JCMWM1674G


OD : Without BOSE system or base audio and display system
BCM (BODY CONTROL MODULE)
M118, M119, M120, M121, M122, M123
130 : OD
110
20
25
A/C AUTO AMP.
M50
OD : OD
HAZARD SWITCH
M45
REAR COMBINATION LAMP RH (TURN SIGNAL)
B59
REAR COMBINATION LAMP LH (TURN SIGNAL)
B80
JCMWM1675GI

BCM (BODY CONTROL MODULE)

Connector No.	M103
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH

H.S.

1	2	3		4	5	6
7	8	9	10	11	12	13	14

Terminal No.	Color of Wire	Signal Name [Specification]
2	G/Y	OUTPUT 4
5	LG/R	OUTPUT 3
7	R/G	INPUT 3
8	LG/B	OUTPUT 5
9	R/B	INPUT 2
10	P/B	INPUT 4
11	R/W	INPUT 1
12	L/W	OUTPUT 1
13	R/Y	INPUT 5
14	G/B	OUTPUT 2

Connector No.	M120
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS12FW-CS

H.S.

20	21		22	23	24
25	26	27	28	29	30	31

Terminal No.	Color of Wire	Signal Name [Specification]
20	G/B	TURN SIGNAL RH (REAR)
23	R	TRUNK OPEN OUTPUT
24	G	REAR FOG LAMP OUTPUT
25	G/Y	TURN SIGNAL LH (REAR)
30	V/W	TRUNK LAMP OUTPUT

Connector No.	M118
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	M03FB-LC

H.S.

1	3
2	

Terminal No.	Color of Wire	Signal Name [Specification]
1	W/B	BAT (F/L)
2	R/Y	POWER WINDOW POWER SUPPLY (BAT)
3	L/W	POWER WINDOW POWER SUPPLY (IGN)

Connector No.	M121
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FGY-NH

H.S.

51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32
71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52

Terminal No.	Color of Wire	Signal Name [Specification]
34	B	TRUNK ANT 1 B
35	W	TRUNK ANT 1 A
38	L/O	RR BUMPER ANT B
39	BR/W	RR BUMPER ANT A
47	BR/W	IGN RELAY IPDM E/R CONT
50	W	TRUNK SW
52	R	IGN RELAY IPDM E/R CONT
61	G/R	TRUNK REQUEST SW
64	GR	REQUEST SW BUZZER
67	L/R	INTERIOR TRUNK SW
68	R/W	REAR RH DOOR SW

Connector No.	M119
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS16FW-CS

H.S.

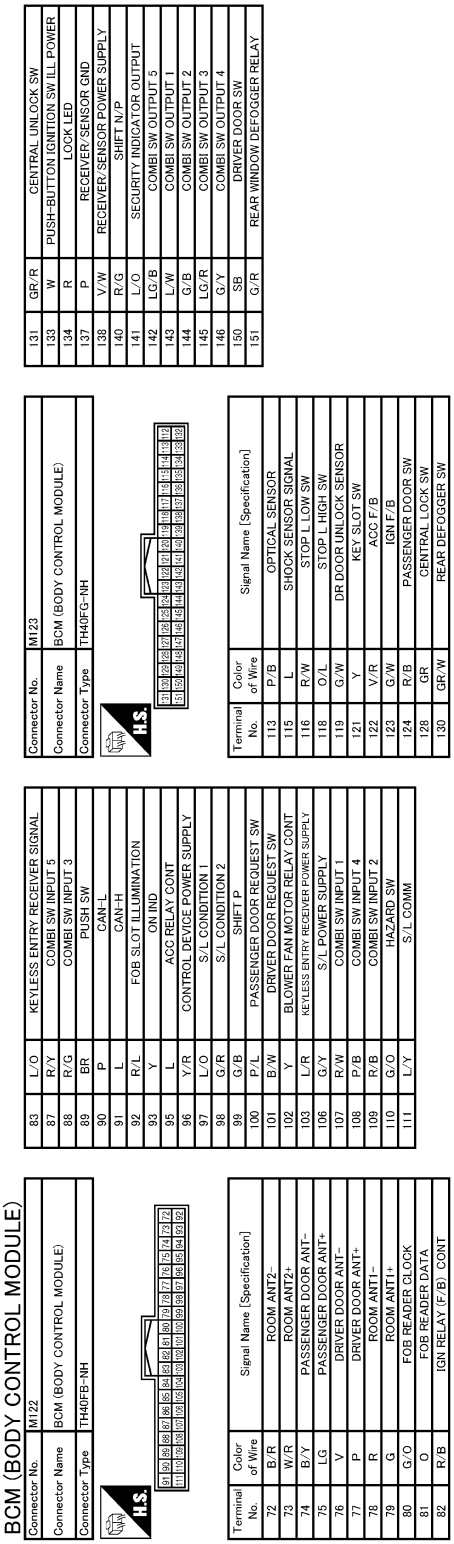
4	5	6	7		8	9	10
11	12	13	14	15	16	17	18	19

Terminal No.	Color of Wire	Signal Name [Specification]
4	P/W	INTERIOR ROOM LAMP POWER SUPPLY
5	G/Y	PASSENGER DOOR UNLOCK OUTPUT
7	R/W	STEP LAMP OUTPUT
8	V	ALL DOOR LOCK OUTPUT
9	G	DRIVER DOOR UNLOCK OUTPUT
10	G/Y	REAR DOOR UNLOCK OUTPUT
11	Y/R	BAT (FUSE)
13	B	GND
15	Y	ACC IND
17	G/B	TURN SIGNAL RH (FRONT, D/MIRROR)
18	G/Y	TURN SIGNAL LH (FRONT, D/MIRROR)

Terminal No.	Color of Wire	Signal Name [Specification]
19	Y	ROOM LAMP TIMER CONTROL

Terminal No.	Color of Wire	Signal Name [Specification]
69	R/B	REAR LH DOOR SW

JCMWM1676G



JCMWM1677GI

Fail-safe

INFOID:0000000003959698

FAIL-SAFE CONTROL BY DTC

BCM performs fail-safe control when any DTC is detected.

Display contents of CONSULT	Fail-safe	Cancellation
B2013: ID DISCORD BCM-S/L	Inhibit engine cranking	Erase DTC
B2014: CHAIN OF S/L-BCM	Inhibit engine cranking	Erase DTC
B2190: NATS ANTENNA AMP	Inhibit engine cranking	Erase DTC
B2191: DIFFERENCE OF KEY	Inhibit engine cranking	Erase DTC
B2192: ID DISCORD BCM-ECM	Inhibit engine cranking	Erase DTC
B2193: CHAIN OF BCM-ECM	Inhibit engine cranking	Erase DTC
B2557: VEHICLE SPEED	Inhibit steering lock	When normal vehicle speed signals have been received from ABS actuator and electric unit (control unit) for 500 ms
B2560: STARTER CONT RELAY	Inhibit engine cranking	500 ms after the following CAN signal communication status has become consistent • Starter control relay signal • Starter relay status signal
B2601: SHIFT POSITION	Inhibit steering lock	500 ms after the following signal reception status becomes consistent • Selector lever P position switch signal • P range signal (CAN)
B2602: SHIFT POSITION	Inhibit steering lock	5 seconds after the following BCM recognition conditions are fulfilled • Ignition switch is in the ON position • Selector lever P position switch signal: Except P position (battery voltage) • Vehicle speed: 4 km/h (2.5 MPH) or more
B2603: SHIFT POSI STATUS	Inhibit steering lock	500 ms after the following BCM recognition conditions are fulfilled • Ignition switch is in the ON position • Selector lever P position switch signal: Except P position (battery voltage) • Selector lever P/N position signal: Except P and N positions (0 V)
B2604: PNP SW	Inhibit steering lock	500 ms after any of the following BCM recognition conditions is fulfilled • Status 1 - Ignition switch is in the ON position - Selector lever P/N position signal: P and N position (battery voltage) - P range signal or N range signal (CAN): ON • Status 2 - Ignition switch is in the ON position - Selector lever P/N position signal: Except P and N positions (0 V) - P range signal and N range signal (CAN): OFF
B2605: PNP SW	Inhibit steering lock	500 ms after any of the following BCM recognition conditions is fulfilled • Ignition switch is in the ON position - Power position: IGN - Selector lever P/N position signal: Except P and N positions (0 V) - Interlock/PNP switch signal (CAN): OFF • Status 2 - Ignition switch is in the ON position - Selector lever P/N position signal: P or N position (battery voltage) - PNP switch signal (CAN): ON
B2606: S/L RELAY	Inhibit engine cranking	500 ms after the following CAN signal communication status has become consistent • Steering lock relay signal (Request signal) • Steering lock relay signal (Condition signal)
B2607: S/L RELAY	Inhibit engine cranking	500 ms after the following CAN signal communication status has become consistent • Steering lock relay signal (Request signal) • Steering lock relay signal (Condition signal)

Display contents of CONSULT	Fail-safe	Cancellation
B2608: STARTER RELAY	Inhibit engine cranking	500 ms after the following signal communication status becomes consistent • Starter motor relay control signal • Starter relay status signal (CAN)
B2609: S/L STATUS	• Inhibit engine cranking • Inhibit steering lock	When the following steering lock conditions agree • BCM steering lock control status • Steering lock condition No. 1 signal status • Steering lock condition No. 2 signal status
B260A: IGNITION RELAY	Inhibit engine cranking	500 ms after the following conditions are fulfilled • IGN relay (IPDM E/R) control signal: OFF (Battery voltage) • Ignition ON signal (CAN to IPDM E/R): OFF (Request signal) • Ignition ON signal (CAN from IPDM E/R): OFF (Condition signal)
B260F: ENG STATE SIG LOST	Maintains the power supply position attained at the time of DTC detection	When any of the following conditions is fulfilled • Power position changes to ACC • Receives engine status signal (CAN)
B2612: S/L STATUS	• Inhibit engine cranking • Inhibit steering lock	When any of the following conditions is fulfilled • Steering lock unit status signal (CAN) is received normally • The BCM steering lock control status matches the steering lock status recognized by the steering lock unit status signal (CAN from IPDM E/R)
B2617: STARTER RELAY CIRC	Inhibit engine cranking	1 second after the starter motor relay control inside BCM becomes normal
B2618: BCM	Inhibit engine cranking	1 second after the ignition relay (IPDM E/R) control inside BCM becomes normal
B2619: BCM	Inhibit engine cranking	1 second after the steering lock unit power supply output control inside BCM becomes normal
B261E: VEHICLE TYPE	Inhibit engine cranking	BCM initialization
B26E1: ENG STATE NO RES	Inhibit engine cranking	When any of the following conditions is fulfilled • Power position changes to ACC • Receives engine status signal (CAN)
B26E9: S/L STATUS	• Inhibit engine cranking • Inhibit steering lock	When BCM transmits the LOCK request signal to steering lock unit, and receives LOCK response signal from steering lock unit, the following conditions is fulfilled • Steering condition No. 1 signal: LOCK (0 V) • Steering condition No. 2 signal: LOCK (Battery voltage)

HIGH FLASHER OPERATION

BCM detects the turn signal lamp circuit status by the current value.
BCM increases the turn signal lamp blinking speed if the bulb or harness open is detected with the turn signal lamp operating.

NOTE:
The blinking speed is normal while activating the hazard warning lamp.

DTC Inspection Priority Chart

INFOID:0000000003959699

If some DTCs are displayed at the same time, perform inspections one by one based on the following priority chart.

Priority	DTC
1	B2562: LOW VOLTAGE
2	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
3	• B2190: NATS ANTENNA AMP • B2191: DIFFERENCE OF KEY • B2192: ID DISCORD BCM-ECM • B2193: CHAIN OF BCM-ECM

Priority	DTC
4	• B2013: ID DISCORD BCM-S/L • B2014: CHAIN OF S/L-BCM • B2553: IGNITION RELAY • B2555: STOP LAMP • B2556: PUSH-BTN IGN SW • B2557: VEHICLE SPEED • B2560: STARTER CONT RELAY • B2601: SHIFT POSITION • B2602: SHIFT POSITION • B2603: SHIFT POSI STATUS • B2604: PNP SW • B2605: PNP SW • B2606: S/L RELAY • B2607: S/L RELAY • B2608: STARTER RELAY • B2609: S/L STATUS • B260A: IGNITION RELAY • B260B: STEERING LOCK UNIT • B260C: STEERING LOCK UNIT • B260D: STEERING LOCK UNIT • B260F: ENG STATE SIG LOST • B2612: S/L STATUS • B2614: ACC RELAY CIRC • B2615: BLOWER RELAY CIRC • B2616: IGN RELAY CIRC • B2617: STARTER RELAY CIRC • B2618: BCM • B2619: BCM • B261A: PUSH-BTN IGN SW • B261E: VEHICLE TYPE • B26E1: ENG STATE NO RES • B26E9: S/L STATUS • B26EA: KEY REGISTRATION • U0415: VEHICLE SPEED SIG
5	• B2621: INSIDE ANTENNA • B2622: INSIDE ANTENNA • B2623: INSIDE ANTENNA

DTC Index

INFOID:0000000003959700

NOTE:
The details of time display are as follows.
- CRNT: A malfunction is detected now.
- PAST: A malfunction was detected in the past.

IGN counter is displayed on Freeze Frame Data. For details of Freeze Frame Data and IGN Counter, refer to BCS-16, "COMMON ITEM : CONSULT-III Function (BCM - COMMON ITEM)".

CONSULT display	Fail-safe	Freeze Frame Data	Intelligent Key warning lamp ON	Reference page
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	—	—	—	BCS-33
U1010: CONTROL UNIT (CAN)	—	—	—	BCS-34
U0415: VEHICLE SPEED SIG	—	—	—	BCS-35
B2013: ID DISCORD BCM-S/L	×	×	—	SEC-46
B2014: CHAIN OF S/L-BCM	×	×	—	SEC-47
B2190: NATS ANTENNA AMP	×	—	—	SEC-39
B2191: DIFFERENCE OF KEY	×	—	—	SEC-42

CONSULT display	Fail-safe	Freeze Frame Data	Intelligent Key warning lamp ON	Reference page
B2192: ID DISCORD BCM-ECM	×	—	—	SEC-43
B2193: CHAIN OF BCM-ECM	×	—	—	SEC-45
B2553: IGNITION RELAY	—	×	—	PCS-49
B2555: STOP LAMP	—	×	—	SEC-50
B2556: PUSH-BTN IGN SW	—	×	×	SEC-52
B2557: VEHICLE SPEED	×	×	×	SEC-54
B2560: STARTER CONT RELAY	×	×	×	SEC-55
B2562: LOW VOLTAGE	—	×	—	BCS-36
B2601: SHIFT POSITION	×	×	×	SEC-56
B2602: SHIFT POSITION	×	×	×	SEC-59
B2603: SHIFT POSI STATUS	×	×	×	SEC-61
B2604: PNP SW	×	×	×	SEC-64
B2605: PNP SW	×	×	×	SEC-67
B2606: S/L RELAY	×	×	×	SEC-69
B2607: S/L RELAY	×	×	×	SEC-70
B2608: STARTER RELAY	×	×	×	SEC-72
B2609: S/L STATUS	×	×	×	SEC-74
B260A: IGNITION RELAY	×	×	×	PCS-51
B260B: STEERING LOCK UNIT	—	×	×	SEC-78
B260C: STEERING LOCK UNIT	—	×	×	SEC-79
B260D: STEERING LOCK UNIT	—	×	×	SEC-80
B260F: ENG STATE SIG LOST	×	×	×	SEC-81
B2612: S/L STATUS	×	×	×	SEC-85
B2614: ACC RELAY CIRC	—	×	×	PCS-53
B2615: BLOWER RELAY CIRC	—	×	×	PCS-55
B2616: IGN RELAY CIRC	—	×	×	PCS-57
B2617: STARTER RELAY CIRC	×	×	×	SEC-89
B2618: BCM	×	×	×	PCS-59
B2619: BCM	×	×	×	SEC-91
B261A: PUSH-BTN IGN SW	—	×	×	SEC-92
B261E: VEHICLE TYPE	×	×	× (Turn ON for 15 seconds)	SEC-95
B2621: INSIDE ANTENNA	—	×	—	DLK-50
B2622: INSIDE ANTENNA	—	×	—	DLK-52
B2623: INSIDE ANTENNA	—	×	—	DLK-54
B26E1: ENG STATE NO RES	×	×	×	SEC-82
B26E9: S/L STATUS	×	×	× (Turn ON for 15 seconds)	SEC-83
B26EA: KEY REGISTRATION	—	×	× (Turn ON for 15 seconds)	SEC-84

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

Reference Value

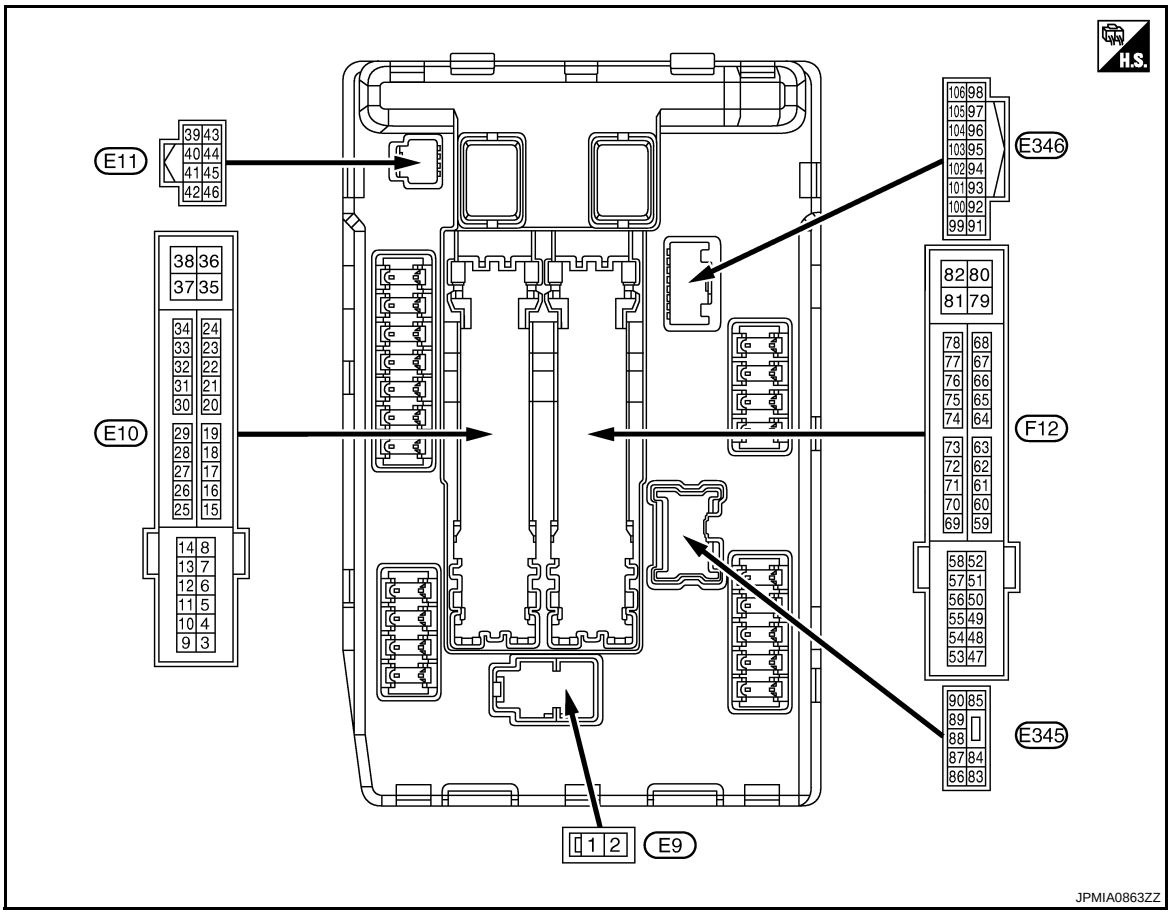
INFOID:0000000003894350

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition		Value/Status
MOTOR FAN REQ	Engine idle speed	Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc.	1/2/3/4
AC COMP REQ	Engine running	A/C switch OFF	Off
		A/C switch ON (Compressor is operating)	On
TAIL&CLR REQ	Lighting switch OFF		Off
	Lighting switch 1ST, 2ND, HI or AUTO (Light is illuminated)		On
HL LO REQ	Lighting switch OFF		Off
	Lighting switch 2ND HI or AUTO (Light is illuminated)		On
HL HI REQ	Lighting switch OFF		Off
	Lighting switch HI		On
FR FOG REQ	Lighting switch 2ND or AUTO (Light is illuminated)	Front fog lamp switch OFF	Off
		Front fog lamp switch ON	On
FR WIP REQ	Ignition switch ON	Front wiper switch OFF	Stop
		Front wiper switch INT	1LOW
		Front wiper switch LO	Low
		Front wiper switch HI	Hi
WIP AUTO STOP	Ignition switch ON	Front wiper stop position	STOP P
		Any position other than front wiper stop position	ACT P
WIP PROT	Ignition switch ON	Front wiper operates normally	Off
		Front wiper stops at fail-safe operation	BLOCK
IGN RLY1 -REQ	Ignition switch OFF or ACC		Off
	Ignition switch ON		On
IGN RLY	Ignition switch OFF or ACC		Off
	Ignition switch ON		On
PUSH SW	Release the push-button ignition switch		Off
	Press the push-button ignition switch		On
INTER/NP SW	Ignition switch ON	Selector lever in any position other than P or N	Off
		Selector lever in P or N position	On
ST RLY CONT	Ignition switch ON		Off
	At engine cranking		On
IHBT RLY -REQ	Ignition switch ON		Off
	At engine cranking		On

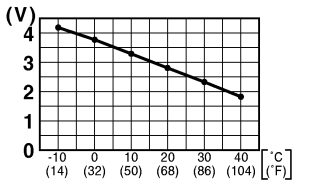
Monitor Item	Condition		Value/Status
ST/INHI RLY	Ignition switch ON		Off
	At engine cranking		INHI → ST
	The status of starter relay or starter control relay cannot be recognized by the battery voltage malfunction, etc. when the starter relay is ON and the starter control relay is OFF		UNKWN
DETENT SW	Ignition switch ON	• Press the selector button with selector lever in P position • Selector lever in any position other than P	Off
	Release the selector button with selector lever in P position		On
S/L RLY -REQ	None of the conditions below are present		Off
	• Open the driver door after the ignition switch is turned OFF (for a few seconds) • Press the push-button ignition switch when the steering lock is activated		On
S/L STATE	Steering lock is activated		LOCK
	Steering lock is deactivated		UNLOCK
	[DTC: B210A] is detected		UNKWN
DTRL REQ	**NOTE:** The item is indicated, but not monitored.		Off
OIL P SW	Ignition switch OFF, ACC or engine running		Open
	Ignition switch ON		Close
HOOD SW	Close the hood		Off
	Open the hood		On
HL WASHER REQ	Not operating		Off
	Headlamp washer operating		On
THFT HRN REQ	Not operating		Off
	Horn is activated with vehicle security (theft warning) system		On
HORN CHIRP	Not operating		Off
	• Door locking with Intelligent Key (horn chirp mode) • Door locking with key fob (horn chirp mode)		On
CRNRNG LMP REQ	**NOTE:** The item is indicated, but not monitored.		Off

TERMINAL LAYOUT



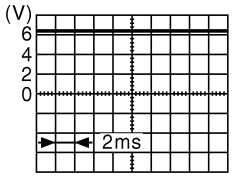
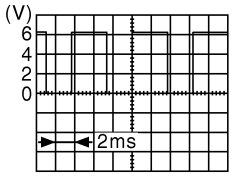
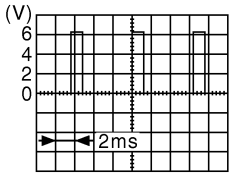
PHYSICAL VALUES

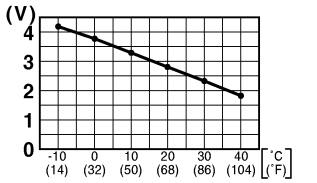
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
1 (R)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
2 (L)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
4 (LG)	Ground	Front wiper LO	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch LO	Battery voltage
5 (Y)	Ground	Front wiper HI	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch HI	Battery voltage
7 (GR)	Ground	Tail, license plate lamps & illuminations	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 1ST	Battery voltage
10 (BR)	Ground	ECM relay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		0 V
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning ignition switch OFF)		Battery voltage

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
11 (P)	Ground	Steering lock unit power supply	Output	Ignition switch OFF	A few seconds after opening the driver door	Battery voltage
				Ignition switch LOCK	Press the push-button ignition switch	Battery voltage
				Ignition switch ACC or ON		0 V
12 (B/W)	Ground	Ground	—	Ignition switch ON		0 V
13 (SB)	Ground	Fuel pump power supply	Output	Approximately 1 second or more after turning the ignition switch ON		0 V
				• Approximately 1 second after turning the ignition switch ON • Engine running		Battery voltage
15 (W)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
16 (R)	Ground	Front wiper auto stop	Input	Ignition switch ON	Front wiper stop position	0 V
					Any position other than front wiper stop position	Battery voltage
17 (V)	Ground	Headlamp washer relay control	Input	Ignition switch ON	Headlamp washer deactivated	Battery voltage
					Headlamp washer activated	0 V
19 (Y)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
20 (B)	Ground	Ambient sensor ground	Output	Ignition switch ON		0 V
21 (O)	Ground	Ambient sensor	Input	Ignition switch ON **NOTE:** Changes depending to ambient temperature		 JSNIA0014GB
22 (SB)	Ground	Refrigerant pressure sensor ground	Output	Engine running	• Warm-up condition • Idle speed	0 V
23 (GR)	Ground	Refrigerant pressure sensor	Output	Engine running	• Warm-up condition • Both A/C switch and blower fan motor switch ON (Compressor operates)	1.0 - 4.0 V
24 (G)	Ground	Refrigerant pressure sensor power supply	Input	Ignition switch OFF		0 V
				Ignition switch ON		5.0 V
25 (GR)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
27 (W)	Ground	Ignition relay monitor	Input	Ignition switch OFF or ACC		Battery voltage
				Ignition switch ON		0 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
28 (SB)	Ground	Push-button ignition switch	Input	Press the push-button ignition switch		0 V
				Release the push-button ignition switch		Battery voltage
30 (BR)	Ground	Starter relay control	Input	Ignition switch ON	Selector lever in any position other than P or N	0 V
					Selector lever P or N	Battery voltage
32 (V)	Ground	Steering lock unit condition-1	Input	Steering lock is activated		0 V
				Steering lock is deactivated		Battery voltage
33 (G)	Ground	Steering lock unit condition-2	Input	Steering lock is activated		Battery voltage
				Steering lock is deactivated		0 V
34 (O)	Ground	Cooling fan relay-3 control	Input	Cooling fan stopped		Battery voltage
				Cooling fan at HI operation		0 V
35 (P)	Ground	Cooling fan relay-1 power supply	Input	Cooling fan stopped		Battery voltage
				Cooling fan at LO operation		6.0 V
36 (G)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
38 (GR)	Ground	Cooling fan relay-1 power supply	Output	Cooling fan not operating		0 V
				Cooling fan at LO operation		6.0 V
39 (P)	—	CAN-L	Input/ Output	—		—
40 (L)	—	CAN-H	Input/ Output	—		—
41 (B)	Ground	Ground	—	Ignition switch ON		0 V
42 (SB)	Ground	Cooling fan relay-2 control	Input	Cooling fan stopped		Battery voltage
				• Cooling fan MID operating • Cooling fan HI operating		0 V
43 (Y)	Ground	Control device (Detention switch)	Input	Ignition switch ON	Press the selector button (selector lever P)	Battery voltage
					• Selector lever in any position other than P • Release the selector button (selector lever P)	0 V
44 (G)	Ground	Horn relay control	Input	The horn is deactivated		Battery voltage
				The horn is activated		0 V
45 (O)	Ground	Horn switch	Input	The horn is deactivated		Battery voltage
				The horn is activated		0 V
46 (BR)	Ground	Starter relay control	Input	Ignition switch ON	Selector lever in any position other than P or N	0 V
					Selector lever P or N	Battery voltage
48 (Y/R)	Ground	A/C relay power supply	Output	Engine running	A/C switch OFF	0 V
					A/C switch ON (A/C compressor is operating)	Battery voltage

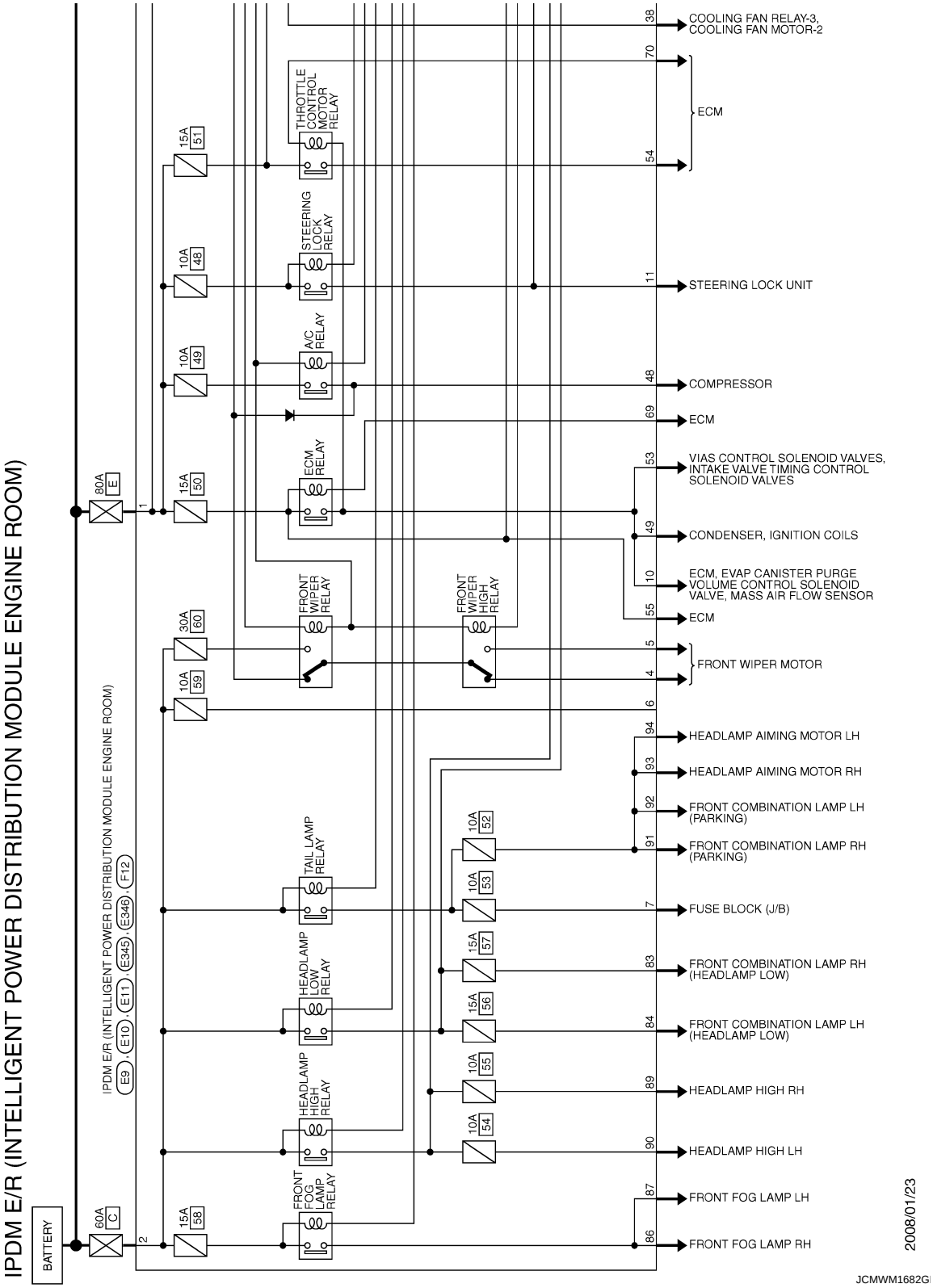
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
49 (R/B)	Ground	ECM relay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		0 V
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning ignition switch OFF)		Battery voltage
51 (LG)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
52 (Y/G)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
53 (R/W)	Ground	ECM relay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		0 V
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning ignition switch OFF)		Battery voltage
54 (G/W)	Ground	Throttle control motor relay power supply	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		0 V
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning ignition switch OFF)		Battery voltage
55 (W/L)	Ground	ECM power supply	Output	Ignition switch OFF		Battery voltage
56 (R/Y)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
57 (O)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
58 (Y)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage
69 (W/B)	Ground	ECM relay control	Output	Ignition switch OFF (More than a few seconds after turning ignition switch OFF)		Battery voltage
				• Ignition switch ON • Ignition switch OFF (For a few seconds after turning ignition switch OFF)		0 - 1.5 V
70 (O)	Ground	Throttle control motor relay control	Output	Ignition switch ON → OFF		0 -1.0 V ↓ Battery voltage ↓ 0 V
				Ignition switch ON		0 - 1.0 V
72 (R/B)	Ground	Starter relay control	Input	Ignition switch ON	Selector lever in any position other than P or N	0 V
					Selector lever P or N	Battery voltage
74 (Y)	Ground	Ignition relay power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		Battery voltage

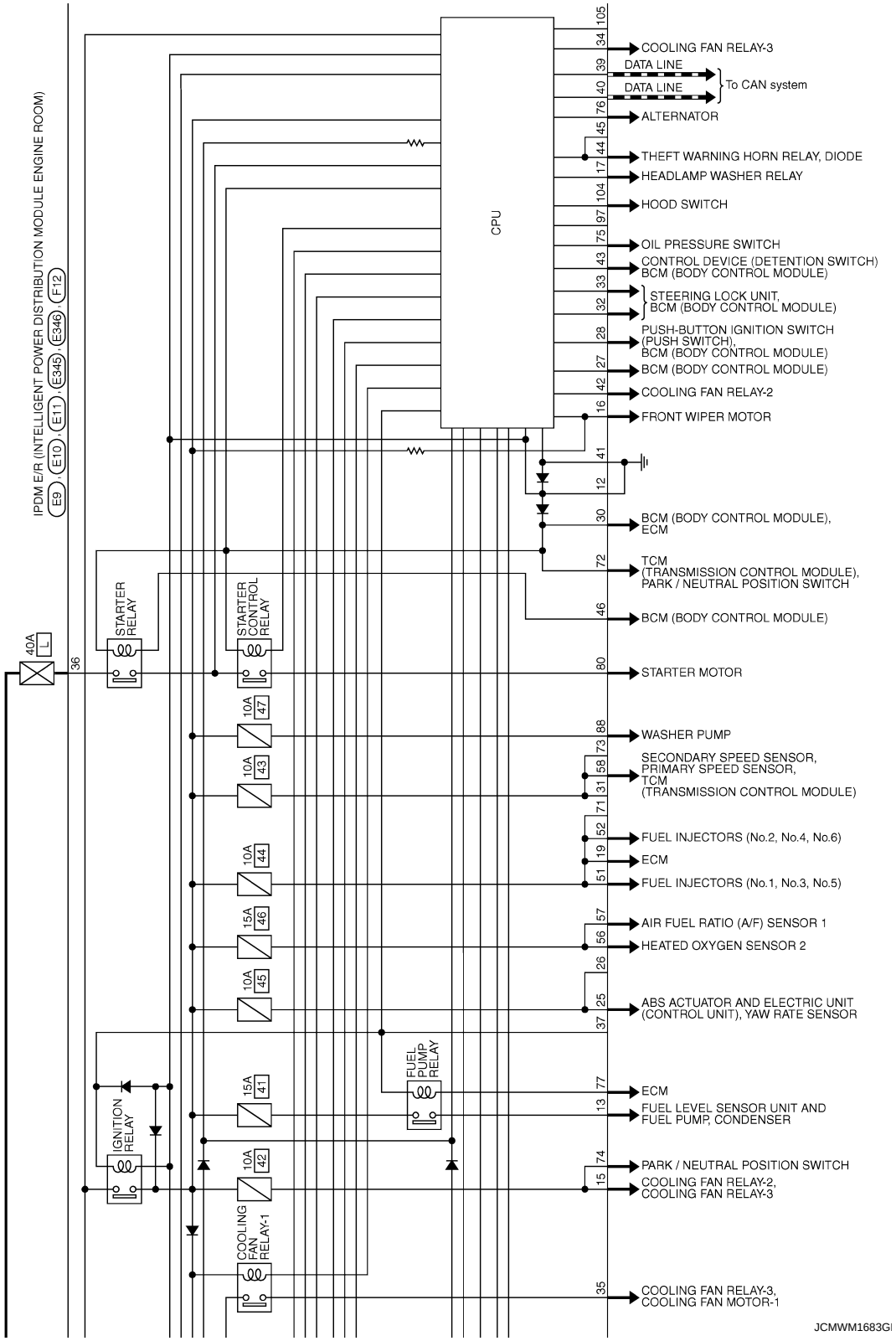
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
75 (P/L)	Ground	Oil pressure switch	Input	Ignition switch ON	Engine stopped	0 V
					Engine running	Battery voltage
76 (SB)	Ground	Power generation command signal	Output	Ignition switch ON		 JPMIA0001GB 6.3 V
				40% is set on “ACTIVE TEST”, “ALTERNATOR DUTY” of “ENGINE”		 JPMIA0002GB 3.8 V
				80% is set on “ACTIVE TEST”, “ALTERNATOR DUTY” of “ENGINE”		 JPMIA0003GB 1.4 V
77 (GR)	Ground	Fuel pump relay control	Output	• Approximately 1 second after turning the ignition switch ON • Engine running		0 - 1.5 V
				Approximately 1 second or more after turning the ignition switch ON		Battery voltage
80 (B/W)	Ground	Starter motor	Output	At engine cranking		Battery voltage
83 (Y)	Ground	Headlamp LO (RH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 2ND	Battery voltage
84 (SB)	Ground	Headlamp LO (LH)	Output	Ignition switch ON	Lighting switch OFF	0 V
					Lighting switch 2ND	Battery voltage
86 (L)	Ground	Front fog lamp (RH)	Output	Lighting switch 2ND	• Front fog lamp switch ON • Daytime running light activated (Only for Canada)	Battery voltage
					Front fog lamp switch OFF	0 V
87 (R)	Ground	Front fog lamp (LH)	Output	Lighting switch 2ND	• Front fog lamp switch ON • Daytime running light activated (Only for Canada)	Battery voltage
					Front fog lamp switch OFF	0 V

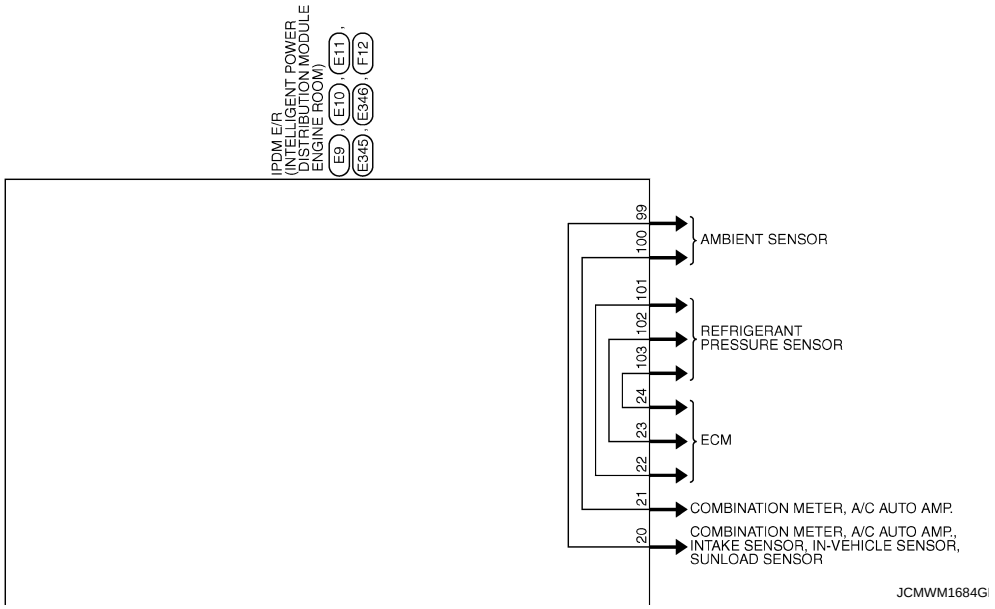
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
88 (P)	Ground	Washer pump power supply	Output	Ignition switch ON		Battery voltage
89 (W)	Ground	Headlamp HI (RH)	Output	Ignition switch ON	• Lighting switch HI • Lighting switch PASS	Battery voltage
					Lighting switch OFF	0 V
90 (O)	Ground	Headlamp HI (LH)	Output	Ignition switch ON	• Lighting switch HI • Lighting switch PASS	Battery voltage
					Lighting switch OFF	0 V
91 (O)	Ground	Parking lamp (RH)	Output	Ignition switch ON	Lighting switch 1ST	Battery voltage
					Lighting switch OFF	0 V
92 (L)	Ground	Parking lamp (LH)	Output	Ignition switch ON	Lighting switch 1ST	Battery voltage
					Lighting switch OFF	0 V
93 (BR)	Ground	Headlamp aiming motor (RH)	Output	Ignition switch ON	Lighting switch 1ST	Battery voltage
					Lighting switch OFF	0 V
94 (Y)	Ground	Headlamp aiming motor (LH)	Output	Ignition switch ON	Lighting switch 1ST	Battery voltage
					Lighting switch OFF	0 V
99 (W)	Ground	Ambient sensor ground	Input	Ignition switch ON		0 V
100 (SB)	Ground	Ambient sensor	Output	Ignition switch ON **NOTE:** Changes depending to ambient temperature		 JSNIA0014GB
101 (GR)	Ground	Refrigerant pressure sensor ground	Input	Engine running	• Warm-up condition • Idle speed	0 V
102 (R)	Ground	Refrigerant pressure sensor	Input	Engine running	• Warm-up condition • Both A/C switch and blower fan motor switch ON (Compressor operates)	1.0 - 4.0 V
103 (P)	Ground	Refrigerant pressure sensor power supply	Output	Ignition switch OFF		0 V
				Ignition switch ON		5.0 V
104 (LG)	Ground	Hood switch	Output	Close the hood		Battery voltage
				Open the hood		0 V

Wiring Diagram - IPDM E/R -

INFOID:0000000003894351




IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E9, E10, E11, E345, E346, F12
CPU
105
34 COOLING FAN RELAY-3
39 DATA LINE
40 DATA LINE
To CAN system
76 ALTERNATOR
45
44 THEFT WARNING HORN RELAY, DIODE
17 HEADLAMP WASHER RELAY
104 HOOD SWITCH
97
75 OIL PRESSURE SWITCH
43 CONTROL DEVICE (DETENTION SWITCH)
BCM (BODY CONTROL MODULE)
33
32 STEERING LOCK UNIT,
BCM (BODY CONTROL MODULE)
28 PUSH-BUTTON IGNITION SWITCH
(PUSH SWITCH),
BCM (BODY CONTROL MODULE)
27 BCM (BODY CONTROL MODULE)
42 COOLING FAN RELAY-2
16 FRONT WIPER MOTOR
41
12
30 BCM (BODY CONTROL MODULE),
ECM
72 TCM
(TRANSMISSION CONTROL MODULE),
PARK / NEUTRAL POSITION SWITCH
46 BCM (BODY CONTROL MODULE)
80 STARTER MOTOR
88 WASHER PUMP
73
58
31 SECONDARY SPEED SENSOR,
PRIMARY SPEED SENSOR,
TCM
(TRANSMISSION CONTROL MODULE)
71
52 FUEL INJECTORS (No.2, No.4, No.6)
19 ECM
51 FUEL INJECTORS (No.1, No.3, No.5)
57 AIR FUEL RATIO (A/F) SENSOR 1
56 HEATED OXYGEN SENSOR 2
26
25 ABS ACTUATOR AND ELECTRIC UNIT
(CONTROL UNIT), YAW RATE SENSOR
37
77 ECM
13 FUEL LEVEL SENSOR UNIT AND
FUEL PUMP, CONDENSER
74 PARK / NEUTRAL POSITION SWITCH
15 COOLING FAN RELAY-2,
COOLING FAN RELAY-3
35 COOLING FAN RELAY-3,
COOLING FAN MOTOR-1
40A L
36
STARTER RELAY
STARTER CONTROL RELAY
10A 47
10A 43
10A 44
15A 46
10A 45
15A 41
10A 42
IGNITION RELAY
FUEL PUMP RELAY
COOLING FAN RELAY-1
JCMWM1683GI


IPDM E/R
(INTELLIGENT POWER
DISTRIBUTION MODULE
ENGINE ROOM)
E9
E10
E11
E345
E346
F12
99
100
AMBIENT SENSOR
101
102
103
REFRIGERANT
PRESSURE SENSOR
24
23
22
ECM
21
COMBINATION METER, A/C AUTO AMP.
20
COMBINATION METER, A/C AUTO AMP.,
INTAKE SENSOR, IN-VEHICLE SENSOR,
SUNLOAD SENSOR
JCMWM1684G

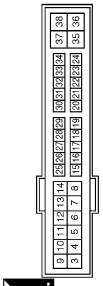
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

Connector No.	E9
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	L02FB-MC



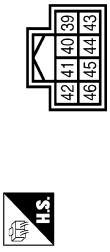
Terminal No.	Color of Wire	Signal Name [Specification]
1	R	–
2	L	–

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH20FW-CS12-M4-1Y



Terminal No.	Color of Wire	Signal Name [Specification]
4	LG	–
5	Y	–
7	GR	–
10	BR	–
11	P	–
12	B/W	–
13	SB	–
15	W	–
16	R	–
17	V	–
19	Y	–
20	B	–
21	O	–
22	SB	–
23	GR	–
24	G	–
25	GR	–
27	W	–
28	SB	–
30	BR	–
32	V	–
33	G	–
34	O	–
35	P	–
36	G	–
38	GR	–

Connector No.	E11
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH08FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
39	P	–
40	L	–
41	B	–
42	SB	–
43	Y	–
44	G	–
46	BR	–
70	O	–
72	R/B	–
74	Y	–
75	P/L	–
76	SB	–
77	GR	–
80	B/W	–

Connector No.	E345
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS08FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
83	Y	–
84	SB	–
86	L	–
87	R	–
88	P	–
89	W	–
90	O	–

Connector No.	E346
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH16FW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
91	O	–
92	L	–
93	BR	–
94	Y	–
99	W	–
100	SB	–
101	GR	–
102	R	–
103	P	–
104	LG	–

Connector No.	F12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH20FW-CS12-M4

Terminal No.	Color of Wire	Signal Name [Specification]
48	Y/R	–
49	R/B	–
51	LG	–
52	Y/G	–
53	R/W	–
54	G/W	–
55	W/L	–
56	R/Y	–
57	O	–
58	Y	–
69	W/B	–

JCMWM1685GI

Fail-safe

INFOID:0000000003894352

CAN COMMUNICATION CONTROL

When CAN communication with ECM and BCM is impossible, IPDM E/R performs fail-safe control. After CAN communication recovers normally, it also returns to normal control.

If No CAN Communication Is Available With ECM

Control part	Fail-safe operation
Cooling fan	• Turns ON the cooling fan relay-2 and the cooling fan relay-3 when ignition switch is turned ON (Cooling fan operates at HI) • Turns OFF the cooling fan relay-1, the cooling fan relay-2 and the cooling fan relay-3 when the ignition switch is turned OFF (Cooling fan does not operate)
A/C compressor	A/C relay OFF
Alternator	Outputs the power generation command signal (PWM signal) 0%

If No CAN Communication Is Available With BCM

Control part	Fail-safe operation
Headlamp	• Turns ON the headlamp low relay when the ignition switch is turned ON • Turns OFF the headlamp low relay when the ignition switch is turned OFF • Headlamp high relay OFF
• Parking lamps • License plate lamps • Illuminations • Tail lamps	• Turns ON the tail lamp relay when the ignition switch is turned ON • Turns OFF the tail lamp relay when the ignition switch is turned OFF
Front wiper	• The status just before activation of fail-safe control is maintained until the ignition switch is turned OFF while the front wiper is operating at LO or HI speed. • The wiper is operated at LO speed until the ignition switch is turned OFF if the fail-safe control is activated while the front wiper is set in the INT mode and the front wiper motor is operating.
Front fog lamps	Front fog lamp relay OFF
Horn	Horn OFF
Ignition relay	The status just before activation of fail-safe is maintained.
Starter motor	Starter control relay OFF
Steering lock unit	Steering lock relay OFF
Headlamp washer relay	Headlamp washer relay OFF

IGNITION RELAY MALFUNCTION DETECTION FUNCTION

- IPDM E/R monitors the voltage at the contact circuit and excitation coil circuit of the ignition relay inside it.
- IPDM E/R judges the ignition relay error if the voltage differs between the contact circuit and the excitation coil circuit.
- If the ignition relay cannot turn OFF due to contact seizure, it activates the tail lamp relay for 10 minutes to alert the user to the ignition relay malfunction when the ignition switch is turned OFF.

Voltage judgment		IPDM E/R judgment	Operation
Ignition relay contact side	Ignition relay excitation coil side		
ON	ON	Ignition relay ON normal	—
OFF	OFF	Ignition relay OFF normal	—
ON	OFF	Ignition relay ON stuck	• Detects DTC “B2098: IGN RELAY ON” • Turns ON the tail lamp relay for 10 minutes
OFF	ON	Ignition relay OFF stuck	Detects DTC “B2099: IGN RELAY OFF”

FRONT WIPER CONTROL

IPDM E/R detects front wiper stop position by a front wiper auto stop signal.
When a front wiper auto stop signal is in the conditions listed below, IPDM E/R stops power supply to wiper after repeating a front wiper 10 seconds activation and 20 seconds stop five times.

Ignition switch	Front wiper switch	Front wiper auto stop signal
ON	OFF	The front wiper auto stop signal (stop position) cannot be input for 10 seconds.
	ON	The front wiper auto stop signal does not change for 10 seconds.

NOTE:
This operation status can be confirmed on the IPDM E/R “Data Monitor” that displays “BLOCK” for the item “WIP PROT” while the wiper is stopped.

STARTER MOTOR PROTECTION FUNCTION

IPDM E/R turns OFF the starter control relay to protect the starter motor when the starter control relay remains active for 90 seconds.

DTC Index

INFOID:0000000003894353

NOTE:
- The details of time display are as follows.
- CRNT: A malfunction is detected now
- PAST: A malfunction was detected in the past.
- IGN counter is displayed on FFD (Freeze Frame data).
- The number is 0 when is detected now
- The number increases like 1 → 2 ··· 38 → 39 after returning to the normal condition whenever IGN OFF → ON.
- The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.

×: Applicable

CONSULT display	Fail-safe	Refer to
No DTC is detected. further testing may be required.	—	—
U1000: CAN COMM CIRCUIT	×	PCS-16
B2098: IGN RELAY ON	×	PCS-17
B2099: IGN RELAY OFF	—	PCS-18
B2108: STRG LCK RELAY ON	—	SEC-96
B2109: STRG LCK RELAY OFF	—	SEC-97
B210A: STRG LCK STATE SW	—	SEC-98
B210B: START CONT RLY ON	—	SEC-102
B210C: START CONT RLY OFF	—	SEC-103
B210D: STARTER RELAY ON	—	SEC-104
B210E: STARTER RELAY OFF	—	SEC-105
B210F: INTRLCK/PNP SW ON	—	SEC-107
B2110: INTRLCK/PNP SW OFF	—	SEC-109

SYMPTOM DIAGNOSIS

EXTERIOR LIGHTING SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000003811996

CAUTION:
Perform the self-diagnosis with CONSULT-III before the symptom diagnosis. Perform the trouble diagnosis if any DTC is detected.

Symptom		Possible cause	Inspection item
Headlamp (HI) is not turned ON.	One side	• Fuse • Halogen bulb (HI) • Harness between IPDM E/R and the headlamp high • IPDM E/R	Headlamp (HI) circuit Refer to EXL-227.
	Both sides	**Symptom diagnosis** "BOTH SIDE HEADLAMPS (HI) ARE NOT TURNED ON" Refer to EXL-331.	
Headlamp (HI) is not turned OFF.	When ignition switch is turned ON.		
	When ignition switch is turned OFF.	IPDM E/R	—
High beam indicator lamp is not turned ON. [Headlamp (HI) is turned ON.]		Combination meter	• Combination meter Data monitor "HI-BEAM IND" • BCM (HEAD LAMP) Active test "HEADLAMP"
Headlamp (LO) is not turned ON.	One side	• Fuse • Halogen bulb (LO) • Harness between IPDM E/R and the front combination lamp • IPDM E/R	Headlamp (LO) circuit Refer to EXL-229.
	Both sides	**Symptom diagnosis** "BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON" Refer to EXL-332.	
Headlamp (LO) is not turned OFF.	When ignition switch is turned ON.		
	When ignition switch is turned OFF.	IPDM E/R	—
Each lamps are not turned ON/OFF with lighting switch AUTO.		• Combination switch • Harness between the combination switch and BCM • BCM	Combination switch Refer to BCS-76.
		• Optical sensor • Harness between the optical sensor and BCM • BCM	Optical sensor circuit Refer to EXL-238.
Front fog lamp is not turned ON.	One side	• Front fog lamp bulb • Harness between IPDM E/R and the front fog lamp • Front fog lamp • IPDM E/R	Front fog lamp circuit Refer to EXL-231.
	Both sides	**Symptom diagnosis** "BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON" Refer to EXL-334.	
Front fog lamp is not turned ON.			
Front fog lamp indicator is not turned ON. (Front fog lamp is turned ON.)		Combination meter	• Combination meter Data monitor "FR FOG IND" • BCM (HEAD LAMP) Active test "FR FOG LAMP"

Symptom		Possible cause	Inspection item
Parking lamp is not turned ON.		• Parking lamp bulb • Harness between IPDM E/R and the front combination lamp • Front combination lamp • IPDM E/R	Parking lamp circuit Refer to EXL-233.
Tail lamp is not turned ON.		• Harness between IPDM E/R and the rear combination lamp • Rear combination lamp	Tail lamp circuit Refer to EXL-243.
License plate lamp is not turned ON.		• License plate lamp bulb • Harness between IPDM E/R and the license plate lamp • License plate lamp	License plate lamp circuit Refer to EXL-245.
Tail lamp and the license plate lamp are not turned ON.		• Fuse • Harness between IPDM E/R and the rear combination lamp • IPDM E/R	License plate lamp circuit Refer to EXL-245.
• Parking lamp, the tail lamp and the license plate lamp are not turned ON. • Parking lamp, the tail lamp and the license plate lamp are not turned OFF. (Each illumination is turned ON/OFF.)		**Symptom diagnosis** “PARKING, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON” Refer to EXL-333.	
Tail lamp indicator is not turned ON. (Parking, tail lamps are turned ON.)		Combination meter	• Combination meter Data monitor “LIGHT IND” • BCM (HEAD LAMP) Active test “TAIL LAMP”
Turn signal lamp does not blink.	Indicator lamp is normal. (Applicable side performs the high flasher activation.)	• Harness between BCM and each turn signal lamp • Turn signal lamp bulb	Turn signal circuit Refer to EXL-235.
	Indicator lamp is included.	• Combination switch • Harness between the combination switch and BCM • BCM	Combination switch Refer to BCS-38.
Turn signal indicator lamp does not blink. (Turn signal indicator lamp is normal.)	One side	Combination meter	—
	Both sides (Always)	• Turn signal indicator lamp signal - BCM • Combination meter	• Combination meter Data monitor “TURN IND” • BCM (FLASHER) Active test “FLASHER”
	Both sides (Only when activating hazard warning lamp with the ignition switch OFF)	• Combination meter power supply and the ground circuit • Combination meter	Combination meter Power supply and the ground circuit Refer to MWI-42.
• Hazard warning lamp does not activate. • Hazard warning lamp continues activating. (Turn signal is normal.)		• Hazard switch • Harness between the hazard switch and BCM • BCM	Hazard switch Refer to EXL-241.

Symptom		Possible cause	Inspection item
Rear fog lamp is not turned ON.	Rear fog lamp indicator lamp is normal.	• Harness between BCM and the rear fog lamp • Rear fog lamp bulb • BCM	Rear fog lamp circuit Refer to EXL-246.
	Rear fog lamp indicator lamp is included.	• Combination switch • Harness between the combination switch and BCM • BCM	Combination switch Refer to BCS-38.
Rear fog lamp indicator lamp is not turn ON. (Rear fog lamp turns ON)		• Rear fog lamp status signal - BCM • Combination meter	• Combination meter Data monitor “RR FOG IND” • BCM (HEAD LAMP) Active test “RR FOG LAMP”

BOTH SIDE HEADLAMPS (HI) ARE NOT TURNED ON

Description

INFOID:0000000003773716

Both side headlamps (HI) are not turned ON when setting to the lighting switch HI or PASS.

Diagnosis Procedure

INFOID:0000000003773717

1.CHECK COMBINATION SWITCH

Check the combination switch. Refer to BCS-76, "Symptom Table".

Is the combination switch normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning part.

2.CHECK HEADLAMP (HI) REQUEST SIGNAL INPUT

CONSULT-III DATA MONITOR

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

Monitor item	Condition		Monitor status
HL HI REQ	Lighting switch (2ND)	HI or PASS	On
		LO	Off

Is the item status normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-78, "Exploded View".

3.HEADLAMP (HI) CIRCUIT INSPECTION

Check the headlamp (HI) circuit. Refer to EXL-227, "Component Function Check".

Is the headlamp (HI) circuit normal?

YES >> Replace IPDM E/R.
NO >> Repair or replace the malfunctioning part.

BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON

Description

INFOID:0000000003773718

Both side headlamps (LO) are not turned ON in any condition.

Diagnosis Procedure

INFOID:0000000003773719

1.CHECK COMBINATION SWITCH

Check the combination switch. Refer to BCS-76, "Symptom Table".

Is the combination switch normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning part.

2.CHECK HEADLAMP (LO) REQUEST SIGNAL INPUT

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.

Monitor item	Condition		Monitor status
HL LO REQ	Lighting switch	2ND	On
		OFF	Off

Is the item status normal?

YES >> GO TO 3.
NO >> Replace BCM. Refer to BCS-78, "Exploded View".

3.HEADLAMP (LO) CIRCUIT INSPECTION

Check the headlamp (LO) circuit. Refer to EXL-229, "Component Function Check".

Is the headlamp (LO) circuit normal?

YES >> Replace IPDM E/R.
NO >> Repair or replace the malfunctioning part.

PARKING, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON

Description

INFOID:0000000003894354

The parking, license plate, tail lamps and each illumination are not turned ON in any condition.

Diagnosis Procedure

INFOID:0000000003894355

1.CHECK FUSE

Check that the following fuse is fusing.

Unit	Location	Fuse No.	Capacity
Parking lamp	IPDM E/R	#52	10 A
• Tail lamp • License plate lamp		#53	10 A

Is the fuse fusing?

YES >> Repair the applicable circuit. And then replace the fuse.
NO >> GO TO 2.

2.COMBINATION SWITCH INSPECTION

Check the combination switch. Refer to BCS-76, "Symptom Table".

Is the combination switch normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunctioning part.

3.CHECK TAIL LAMP RELAY REQUEST SIGNAL INPUT

CONSULT-III DATA MONITOR
1. Select “TAIL & CLR REQ” of IPDM E/R data monitor item.
2. With operating the lighting switch, check the monitor status.

Monitor item	Condition		Monitor status
TAIL & CLR REQ	Lighting switch	1ST	On
		OFF	Off

Is the item status normal?

YES >> GO TO 4.
NO >> Replace BCM. Refer to BCS-78, "Exploded View".

4.TAIL LAMP CIRCUIT INSPECTION

Check the tail lamp circuit. Refer to EXL-243, "Component Function Check".

Is the tail lamp circuit normal?

YES >> Replace IPDM E/R.
NO >> Repair or replace the malfunctioning part.

BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON

Description

INFOID:0000000003894356

The front fog lamps are not turned ON in any condition.

Diagnosis Procedure

INFOID:0000000003894357

1.CHECK FUSE

Check that the following fuse is fusing.

Unit	Location	Fuse No.	Capacity
Front fog lamp	IPDM E/R	#58	15 A

Is the fuse fusing?

YES >> Repair the applicable circuit. And then replace the fuse.
NO >> GO TO 2.

2.COMBINATION SWITCH INSPECTION

Check the combination switch. Refer to BCS-76, "Symptom Table".

Is the combination switch normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunctioning part.

3.CHECK FRONT FOG LAMP REQUEST SIGNAL INPUT

CONSULT-III DATA MONITOR

1. Select “FR FOG REQ” of IPDM E/R data monitor item.
2. With operating the front fog lamp switch, check the monitor status.

Monitor item	Condition		Monitor status
FR FOG REQ	Front fog lamp switch (With lighting switch 1ST)	ON	On
		OFF	Off

Is the item status normal?

YES >> GO TO 4.
NO >> Replace BCM. Refer to BCS-78, "Exploded View".

4.FRONT FOG LAMP CIRCUIT INSPECTION

Check the front fog lamp circuit. Refer to EXL-231, "Component Function Check".

Is the front fog lamp circuit normal?

YES >> Replace IPDM E/R.
NO >> Repair or replace the malfunctioning part.

PRECAUTION

PRECAUTIONS

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

INFOID:0000000003829239

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the “SRS AIRBAG” and “SEAT BELT” of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the “SRS AIRBAG”.**
- **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.**

ON-VEHICLE MAINTENANCE

HEADLAMP AIMING ADJUSTMENT

Description

INFOID:0000000003829238

PREPARATION BEFORE ADJUSTING

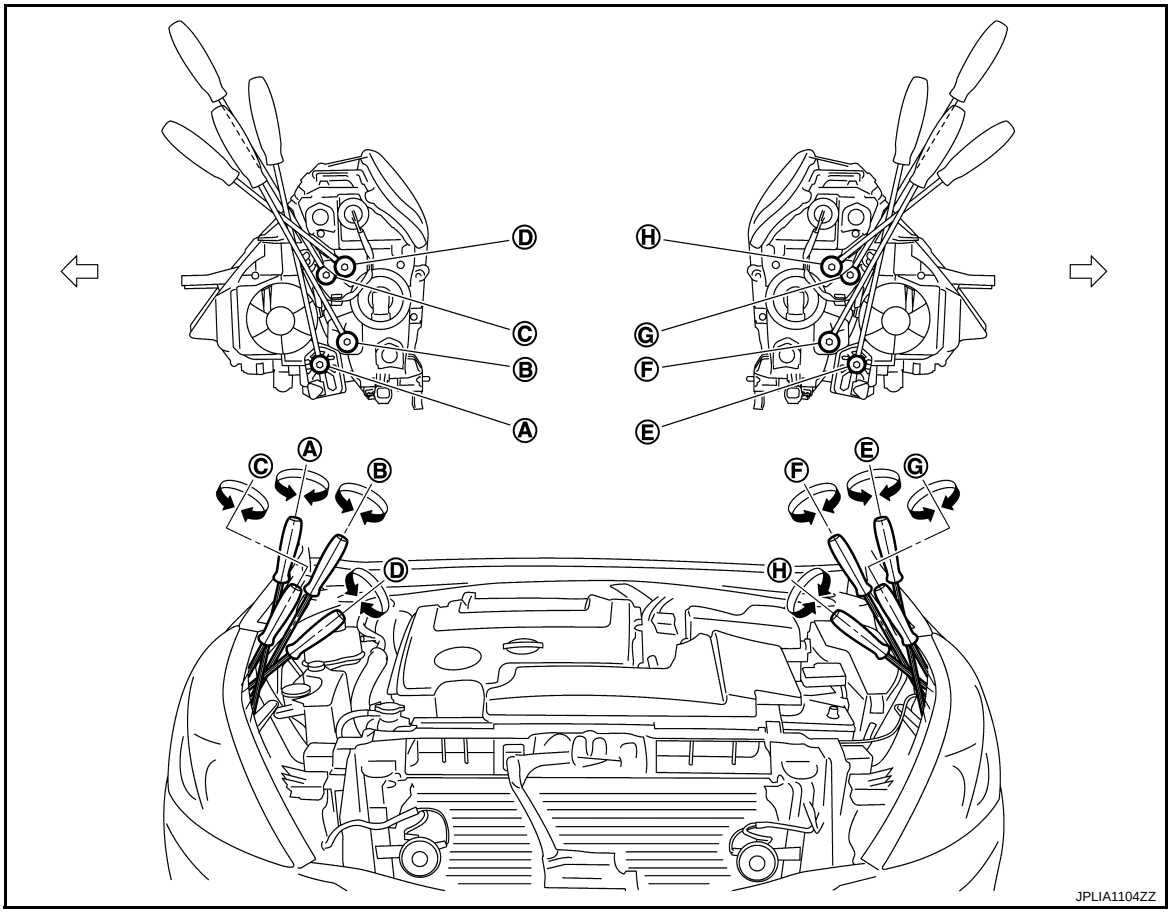
NOTE:

- For details, refer to the regulations in your own country.
- Perform aiming if the vehicle front body has been repaired and/or the headlamp assembly has been replaced.

Before performing aiming adjustment, check the following.

- Adjust the tire pressure to the specification.
- Fill with fuel, engine coolant and each oil.
- Maintain the unloaded vehicle condition. (Remove luggage from the passenger compartment and the trunk room.)
  NOTE:
  Do not remove the temporary tire, jack and on-vehicle tool.
- Wipe out dirt on the headlamp.
  CAUTION:
  Never use organic solvent (thinner, gasoline etc.)
- Ride alone on the driver seat.
- Headlamp aiming switch sets to “0”.

AIMING ADJUSTMENT SCREW



A. Headlamp (LO) RH (UP/DOWN) adjustment screw
B. Headlamp (HI) RH (UP/DOWN) adjustment screw
C. Headlamp (LO) RH (UP-OUTSIDE/DOWN-INSIDE) adjustment screw
D. Headlamp (HI) RH (UP-INSIDE/DOWN-OUTSIDE) adjustment screw
E. Headlamp (LO) LH (UP/DOWN) adjustment screw
F. Headlamp (HI) LH (UP/DOWN) adjustment screw
G. Headlamp (LO) LH (UP-OUTSIDE/DOWN-INSIDE) adjustment screw
H. Headlamp (HI) LH (UP-INSIDE/DOWN-OUTSIDE) adjustment screw

⇦: Vehicle center

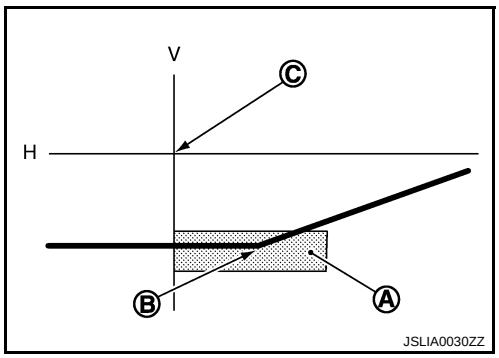
Adjustment screw		Screw driver rotation	Facing direction
A	Headlamp (LO) RH (UP/DOWN)	Clockwise	UP
		Counterclockwise	DOWN
B	Headlamp (HI) RH (UP/DOWN)	Clockwise	UP
		Counterclockwise	DOWN
C	Headlamp (LO) RH (UP-OUTSIDE/DOWN-INSIDE)	Clockwise	DOWN-INSIDE
		Counterclockwise	UP-OUTSIDE
D	Headlamp (HI) RH (UP-INSIDE/DOWN-OUTSIDE)	Clockwise	DOWN-OUTSIDE
		Counterclockwise	UP-INSIDE
E	Headlamp (LO) LH (UP/DOWN)	Clockwise	UP
		Counterclockwise	DOWN
F	Headlamp (HI) LH (UP/DOWN)	Clockwise	UP
		Counterclockwise	DOWN
G	Headlamp (LO) LH (UP-OUTSIDE/DOWN-INSIDE)	Clockwise	DOWN-INSIDE
		Counterclockwise	UP-OUTSIDE
H	Headlamp (HI) LH (UP-INSIDE/DOWN-OUTSIDE)	Clockwise	DOWN-OUTSIDE
		Counterclockwise	UP-INSIDE

Aiming Adjustment Procedure (Low Beam)

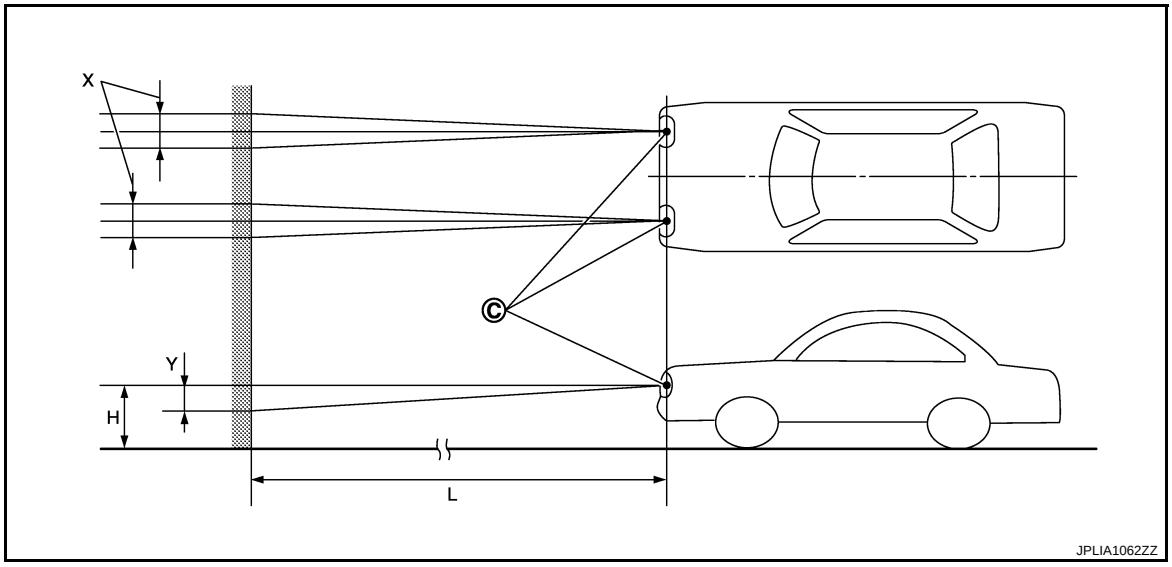
INFOID:0000000003829236

1. Place the screen.
   NOTE:
   • Stop the vehicle at the perpendicular angle to the wall.
   • Set the screen so that it is perpendicular to a level load surface.
2. Face the vehicle squarely toward the screen and make the distance between the headlamp center and the screen 10 m (32.8 ft).
3. Start the engine and illuminate the headlamp (LO).
   NOTE:
   Block light from the headlamp that is not being adjusted with a thick fabric or another object, so that it does not reach the adjustment screen.
   CAUTION:
   Do not cover lens surface with tape, etc. because it is made from plastic.
4. Use the aiming adjustment screw to adjust the elbow point projected by the low beams on the screen, so that it is within the aiming adjustment area.

Low beam distribution on the screen



A. Aiming adjustment area
B. Elbow point
C. Headlamp center
H. Horizontal center line of headlamp
V. Vertical center line of headlamp



C. Vertical center line of headlamp
H. Horizontal center line of headlamp
L. Distance from headlamp center to screen
X. Aiming adjustment area (lateral)
Y. Aiming adjustment area (Vertical)

Distance from headlamp center to screen (L) : 10m (32.8 ft)

Unit: mm (in)

Aiming adjustment area		
Vertical direction (Y) (Lower side from headlamp center height)		Lateral direction (X) (Right and left side from headlamp centerline)
Highest light axis	100 (3.94)	0-100 (3.94)
Target light axis	120 (4.72)	
Lowest light axis	150 (5.91)	

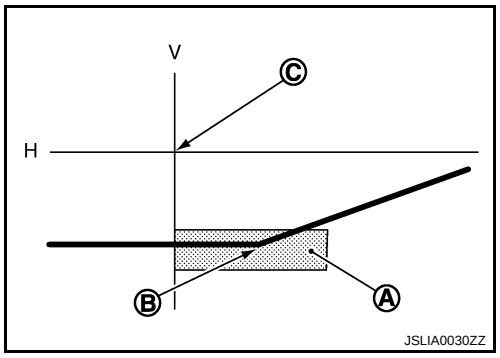
Aiming Adjustment Procedure (High Beam)

INFOID:0000000003829237

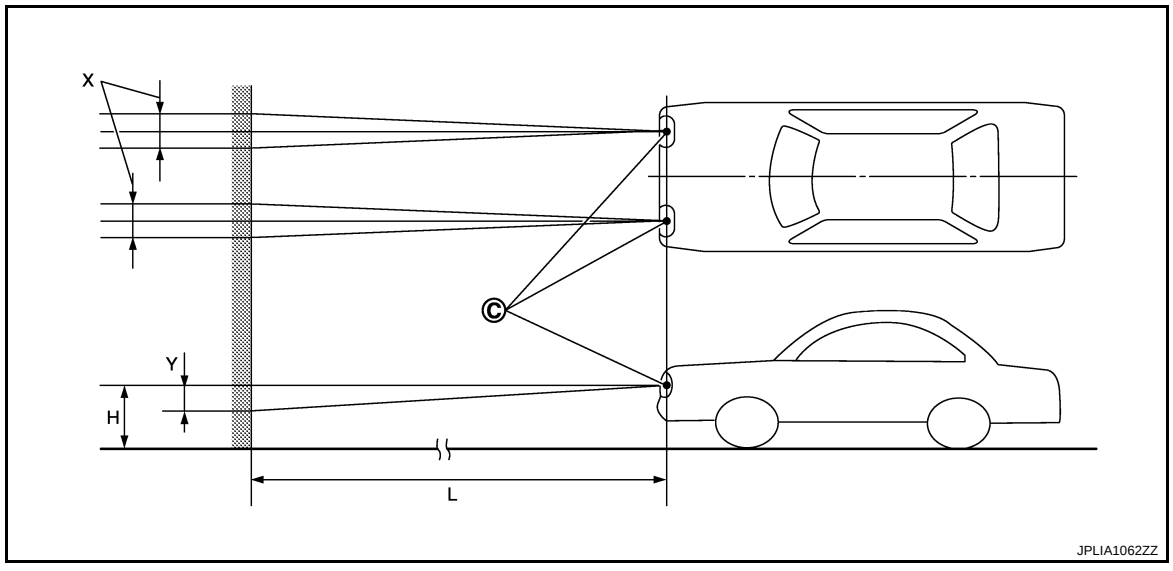
1. Place the screen.
NOTE:
- Stop the vehicle at the perpendicular angle to the wall.
- Set the screen so that it is perpendicular to a level load surface.

2. Face the vehicle squarely toward the screen and make the distance between the headlamp center and the screen 10 m (32.8 ft).
3. Start the engine and illuminate the headlamp (HI).
   NOTE:
   Block light from the headlamp that is not being adjusted with a thick fabric or another object, so that it does not reach the adjustment screen.
   CAUTION:
   Do not cover lens surface with tape, etc. because it is made from plastic.
4. Use the aiming adjustment screw to adjust the elbow point projected by the low beams on the screen, so that it is within the aiming adjustment area.

High beam distribution on the screen



A. Aiming adjustment area
B. Elbow point
C. Headlamp center
H. Horizontal center line of headlamp
V. Vertical center line of headlamp



C. Vertical center line of headlamp
H. Horizontal center line of headlamp
L. Distance from headlamp center to screen
X. Aiming adjustment area (lateral)
Y. Aiming adjustment area (Vertical)

Distance from headlamp center to screen (L) : 10m (32.8 ft)

Unit: mm (in)

Aiming adjustment area		
Vertical direction (Y) (Lower side from headlamp center height)		Lateral direction (X) (Right and left side from headlamp centerline)
Highest light axis	106 (4.17)	0-100 (3.94)
Target light axis	120 (4.72)	
Lowest light axis	164 (6.46)	

FRONT FOG LAMP AIMING ADJUSTMENT

Description

INFOID:0000000003894358

PREPARATION BEFORE ADJUSTING

NOTE:

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

Before performing aiming adjustment, check the following.

- Adjust the tire pressure to the specification.
- Fill with fuel, engine coolant and each oil.
- Maintain the unloaded vehicle condition. (Remove luggage from the passenger compartment and the luggage room.)
  NOTE:
  Do not remove the temporary tire, jack and on-vehicle tool.
- Wipe out dirt on the headlamp.
  CAUTION:
  Never use organic solvent (thinner, gasoline etc.)
- Ride alone on the driver seat.

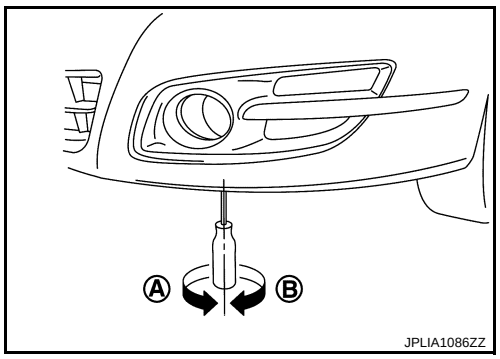
AIMING ADJUSTMENT SCREW

- Turn the aiming adjusting screw for adjustment.

  A: UP

  B: DOWN

- For the position and direction of the adjusting screw, refer to the figure.
  NOTE:
  A screwdriver or hexagonal wrench [6 mm (0.24 in)] can be used for adjustment.

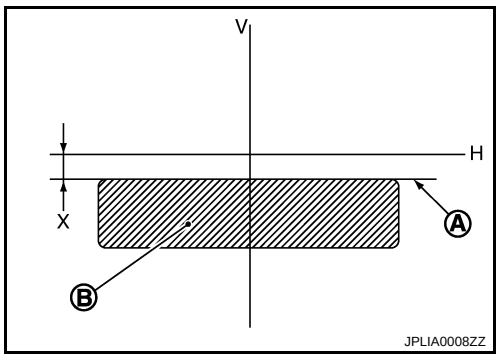


Aiming Adjustment Procedure

INFOID:0000000003894359

1. Place the screen.
   NOTE:
   - Stop the vehicle facing the wall.
   - Place the board on a plain road vertically.
2. Face the vehicle with the screen. Maintain 10 m (32.8 ft) between the front fog lamp center and the screen.
3. Start the engine. Illuminate the front fog lamp.
   CAUTION:
   Never cover the lens surface with a tape etc. The lens is made of resin.
   NOTE:
   Shut off the headlamp light with the board to prevent from illuminating the adjustment screen.
4. Adjust the cutoff line height (A) with the aiming adjustment screw so that the distance (X) between the horizontal center line of front fog lamp (H) and (A) becomes 200 mm (7.87 in).

Front fog lamp light distribution on the screen



A : Cutoff line
B : High illuminance area
H : Horizontal center line of front fog lamp
V : Vertical center line of front fog lamp
X : Cutoff line height

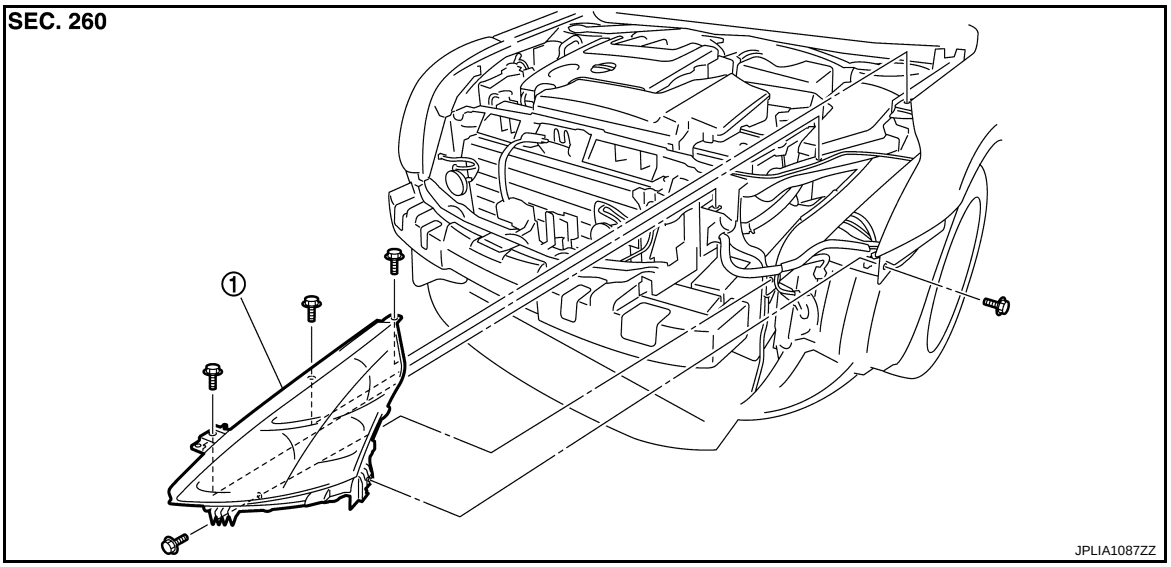
ON-VEHICLE REPAIR

FRONT COMBINATION LAMP

Exploded View

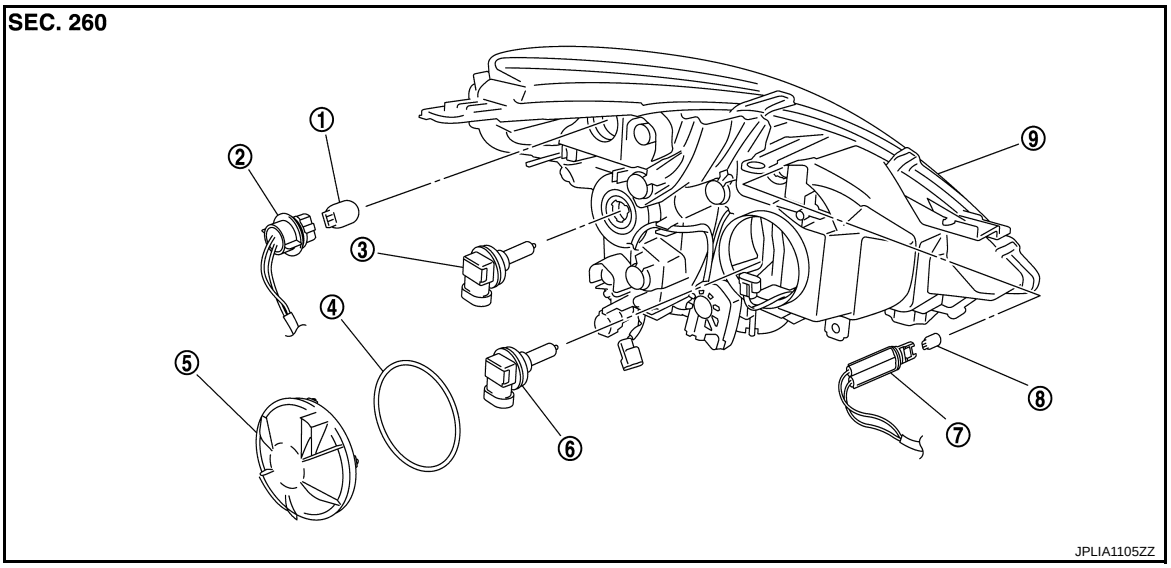
INFOID:0000000003773730

REMOVAL



1. Front combination lamp

DISASSEMBLY



1. Front turn signal lamp bulb
2. Front turn signal lamp bulb socket
3. Halogen bulb (HI)
4. Seal packing
5. Resin cap
6. Halogen bulb (LO)
7. Parking lamp bulb socket
8. Parking lamp bulb
9. Headlamp housing assembly

Removal and Installation

INFOID:0000000003773731

REMOVAL

CAUTION:

Disconnect the battery negative terminal or remove the fuse.

1. Remove the front bumper fascia. Refer to EXT-11, "Exploded View".
2. Remove the headlamp mounting bolts.
3. Remove the harness clips from the headlamp housing.
4. Pull out the headlamp assembly forward the vehicle.
5. Disconnect the connector before removing the headlamp assembly.

INSTALLATION

Install in the reverse order of removal.

NOTE:

After installation, perform aiming adjustment. Refer to EXL-336, "Description".

Replacement

INFOID:0000000003773732

CAUTION:

- **Disconnect the battery negative terminal or remove the fuse.**
- **After installing the bulb, install the resin cap and the bulb socket securely for watertightness.**
- **Never touch the glass of bulb directly by hand. Keep grease and other oily matters away from it.**
- **Never touch bulb by hand while it is lit or right after being turned off.**
- **Never leave bulb out of lamp reflector for a long time because dust, moisture smoke, etc. may affect the performance of lamp. When replacing bulb, be sure to replace it with new one.**

HEADLAMP BULB (LO)

1. Remove the fender protector. Keep a service area. Refer to EXT-22, "FENDER PROTECTOR : Exploded View".
2. Rotate the resin cap counterclockwise and unlock it.
3. Disconnect the headlamp bulb (LO) connector.
4. Rotate the bulb counterclockwise and unlock it.
5. Remove the bulb from the headlamp housing.

HEADLAMP BULB (HI)

1. Remove the fender protector. Keep a service area. Refer to EXT-22, "FENDER PROTECTOR : Exploded View".
2. Disconnect the headlamp bulb (HI) connector.
3. Rotate the bulb counterclockwise and unlock it.
4. Remove the bulb from the headlamp housing.

PARKING LAMP BULB

1. Remove the fender protector. Keep a service area. Refer to EXT-22, "FENDER PROTECTOR : Exploded View".
2. Rotate the parking lamp bulb socket counterclockwise and unlock it.
3. Remove the bulb from the parking lamp bulb socket.

FRONT TURN SIGNAL LAMP BULB

1. Remove the relay box cover*. Refer to PCS-34, "Exploded View".
   *: When replace a left
2. Rotate the front turn signal lamp bulb socket counterclockwise and unlock it.
3. Remove the bulb from the front turn signal lamp bulb socket.

Disassembly and Assembly

INFOID:0000000003773733

DISASSEMBLY

1. Rotate the resin cap counterclockwise and unlock it
2. Disconnect the headlamp bulb (LO) connector.
3. Rotate the headlamp bulb (LO) counterclockwise and unlock it
4. Remove the bulb from the headlamp housing.
5. Rotate the headlamp bulb (HI) counterclockwise and unlock it

6. Remove the bulb from the headlamp housing.
7. Rotate the parking lamp bulb socket counterclockwise and unlock it.
8. Remove the bulb from the parking lamp bulb socket.
9. Rotate the front turn signal lamp bulb socket counterclockwise and unlock it.
10. Remove the bulb from the front turn signal lamp bulb socket.

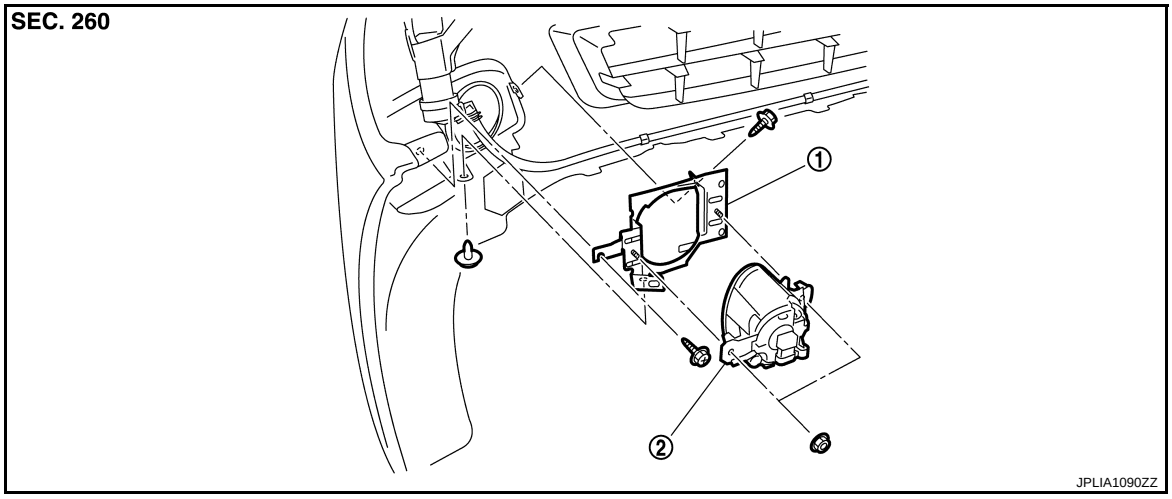
ASSEMBLY

Assemble in the reverse order of disassembly.

FRONT FOG LAMP

Exploded View

INFOID:0000000003894360



1. Front fog lamp bracket
2. Front fog lamp

Removal and Installation

INFOID:0000000003894361

CAUTION:
Disconnect the battery negative terminal or remove the fuse.

REMOVAL

1. Remove the front fender protector. Keep a service area. Refer to EXT-22, "FENDER PROTECTOR : Exploded View".
2. Remove the front fog lamp connector.
3. Remove the mounting nuts. And then remove the front fog lamp.

NOTE:
Never remove a front fog lamp bracket, when the front fog lamp is replaced.

INSTALLATION

Installation is the reverse order of removal.
NOTE:
After installation, perform aiming adjustment. Refer to EXL-341, "Description".

Replacement

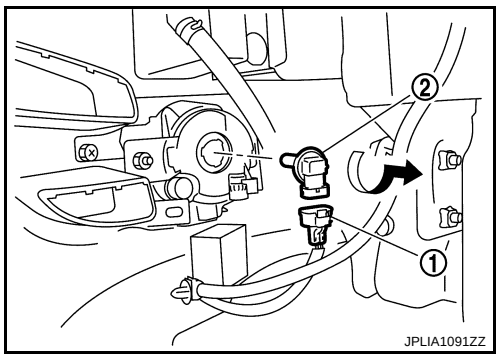
INFOID:0000000003894362

CAUTION:
- **Disconnect the battery negative terminal or remove the fuse.**
- **Never touch the glass of bulb directly by hand. Keep grease and other oily matters away from it. Never touch bulb by hand while it is lit or right after being turned off.**
- **Never leave bulb out of lamp reflector for a long time because dust, moisture smoke, etc. may affect the performance of lamp. When replacing bulb, be sure to replace it with new one.**

FRONT FOG LAMP BULB

1. Remove the front fender protector. Keep a service area. Refer to EXT-22, "FENDER PROTECTOR : Exploded View".

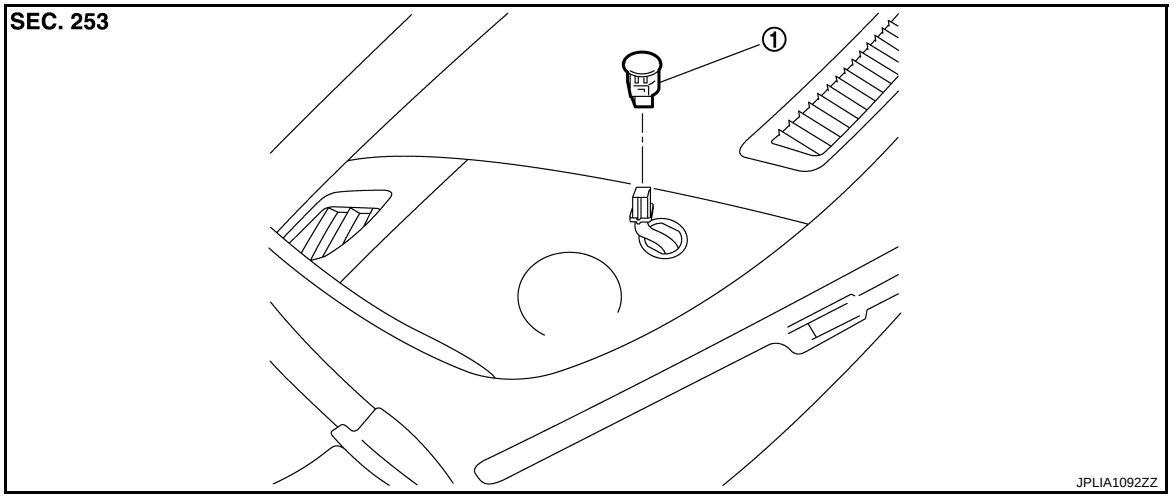
2. Remove the front fog lamp bulb connector (1).
3. Rotate the bulb (2) counterclockwise and unlock it.



OPTICAL SENSOR

Exploded View

INFOID:0000000003894363



1. Optical sensor

Removal and Installation

INFOID:0000000003894364

REMOVAL

1. Insert an appropriate tool between the optical sensor and the speaker grille (RH). Pull out the optical sensor upward.
2. Disconnect the optical sensor connector. And then remove the optical sensor.

INSTALLATION

Install in the reverse order of removal.

LIGHTING & TURN SIGNAL SWITCH

Exploded View

INFOID:0000000003894365

Removal and Installation

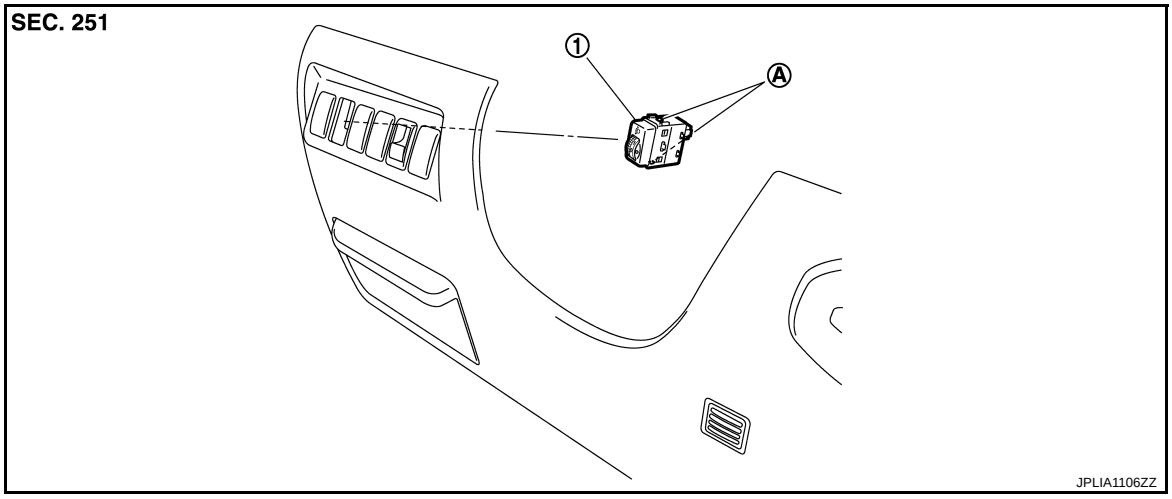
INFOID:0000000003894366

Lighting & turn signal switch is integrated in the combination switch. Refer to BCS-79, "Exploded View".

HEADLAMP AIMING SWITCH

Exploded View

INFOID:0000000003773632



1. Headlamp aiming switch

A. Pawls

Removal and Installation

INFOID:0000000003773633

REMOVAL

1. Remove the instrument driver lower panel. Refer to IP-11, "Exploded View".
2. Disengage the pawls. And then remove the headlamp aiming switch.

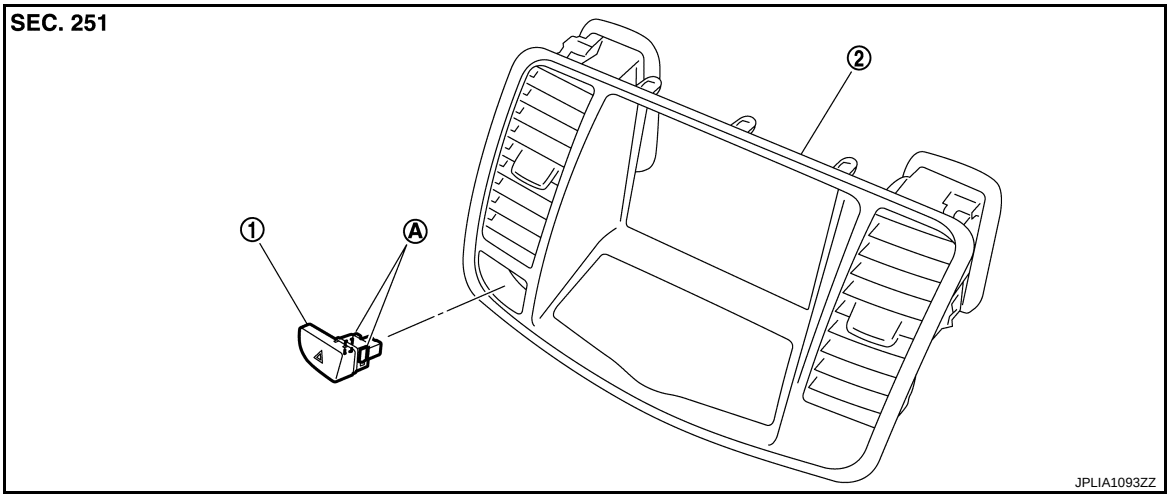
INSTALLATION

Install in the reverse order of removal.

HAZARD SWITCH

Exploded View

INFOID:0000000003894367



1. Hazard switch
2. Cluster lid D

A. Pawls

Removal and Installation

INFOID:0000000003894368

REMOVAL

1. Remove the cluster lid D. Refer to IP-11, "Exploded View".
2. Disengage the pawls. And then remove the hazard switch.

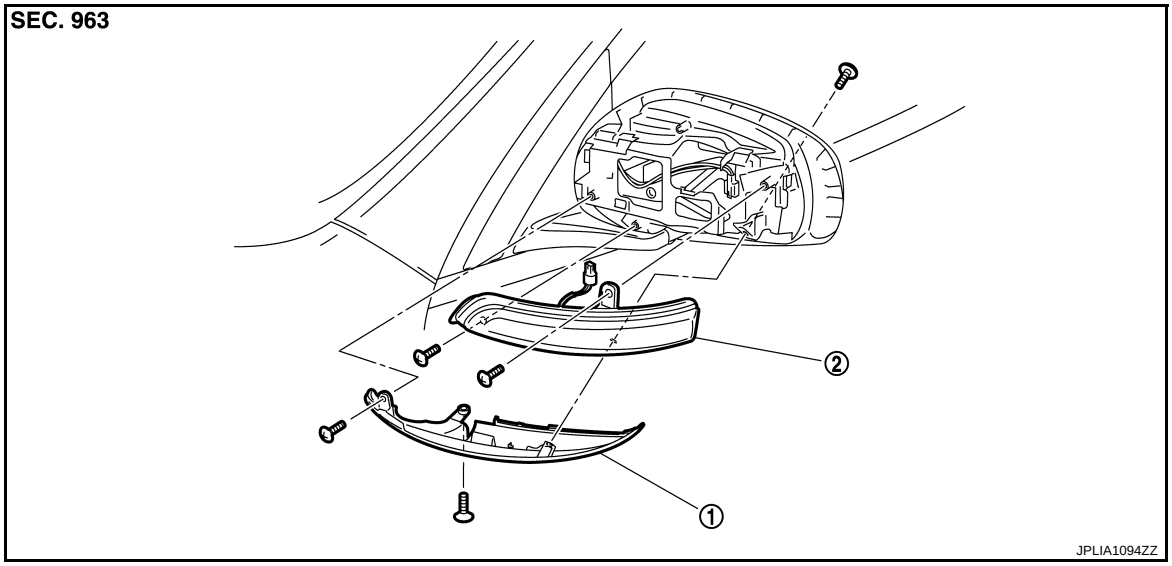
INSTALLATION

Install in the reverse order of removal.

SIDE TURN SIGNAL LAMP

Exploded View

INFOID:0000000003894369



1. Side turn signal lamp
2. Door mirror under cover

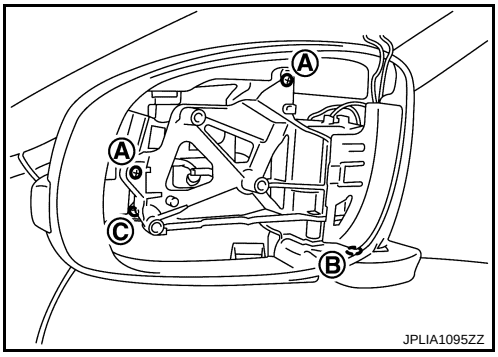
Removal and Installation

INFOID:0000000003894370

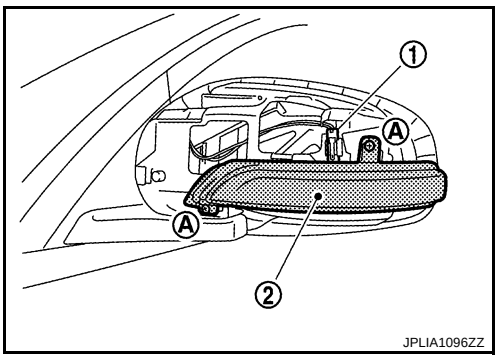
CAUTION:
Disconnect battery negative terminal or remove the fuse.

REMOVAL

1. Remove the door mirror glass. Refer to MIR-18, "GLASS MIRROR : Exploded View".
2. Remove the door mirror outer cover. Refer to MIR-19, "DOOR MIRROR COVER : Exploded View".
3. Remove the door mirror actuator mounting screws (A) and (B). And then remove the side turn signal lamp mounting screw (C).



4. Remove the door mirror under cover. Refer to MIR-19, "DOOR MIRROR COVER : Exploded View".
5. Remove the screws (A) and connector (1). And then remove the side turn signal lamp (2).



INSTALLATION

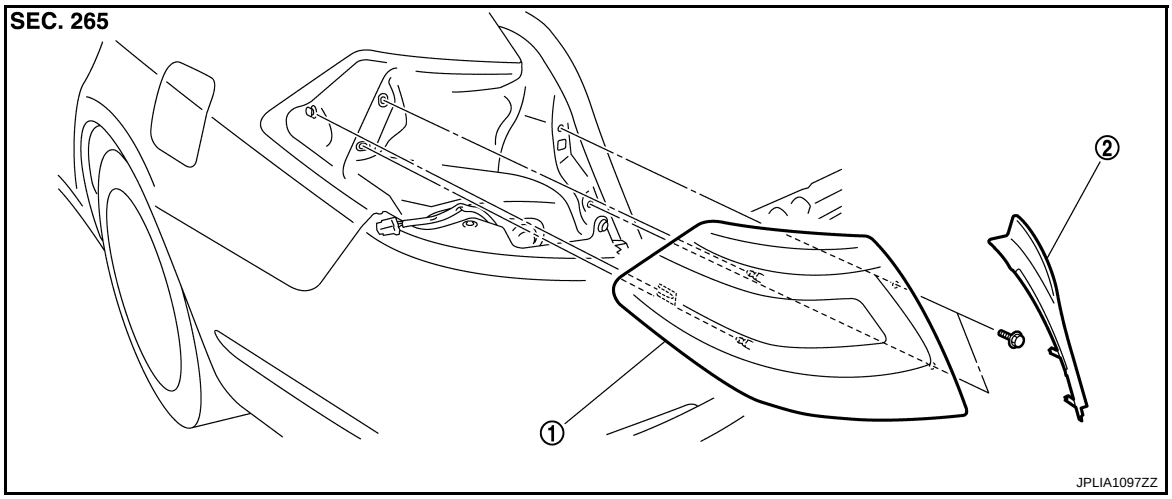
Install in the reverse order of removal.

REAR COMBINATION LAMP

Exploded View

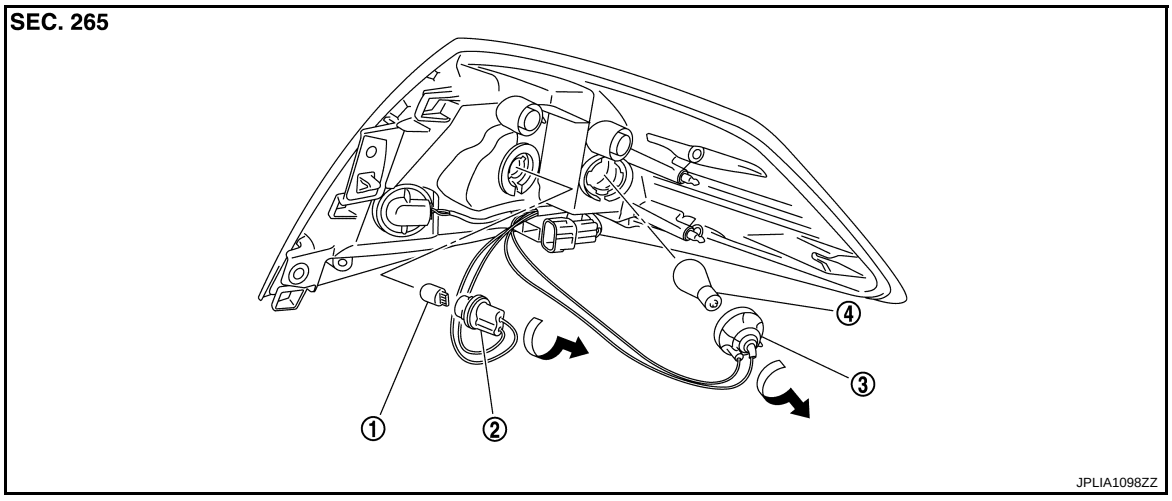
INFOID:0000000003894373

REMOVAL



1. Rear combination lamp
2. Rear combination lamp finisher

DISASSEMBLY



1. Back-up lamp bulb
2. Back-up lamp bulb socket
3. Rear turn signal lamp bulb socket
4. Rear turn signal lamp bulb

Removal and Installation

INFOID:0000000003894374

CAUTION:
Disconnect the battery negative terminal or remove the fuse.

REMOVAL

1. Remove the rear combination lamp finisher.
2. Remove the rear combination lamp mounting bolts.
3. Pull the rear combination lamp toward outside of the vehicle. And then remove the rear combination lamp.
4. Disconnect the rear combination lamp connector.

INSTALLATION

Install in the reverse order of removal.

Replacement

INFOID:0000000003894375

CAUTION:

- **Disconnect the battery negative terminal or remove the fuse.**
- **Never touch the glass of bulb directly by hand. Keep grease and other oily matters away from it. Never touch bulb by hand while it is lit or right after being turned off.**
- **Never leave bulb out of lamp reflector for a long time because dust, moisture smoke, etc. may affect the performance of lamp. When replacing bulb, be sure to replace it with new one.**

STOP/TAIL LAMP

Replacement integral with rear combination lamp. Refer to EXL-354, "Exploded View".

REAR TURN SIGNAL LAMP BULB

1. Remove the rear combination lamp. Refer to EXL-354, "Exploded View".
2. Rotate the rear turn signal lamp bulb socket counterclockwise, and unlock it.
3. Remove the bulb from the rear turn signal lamp bulb socket.

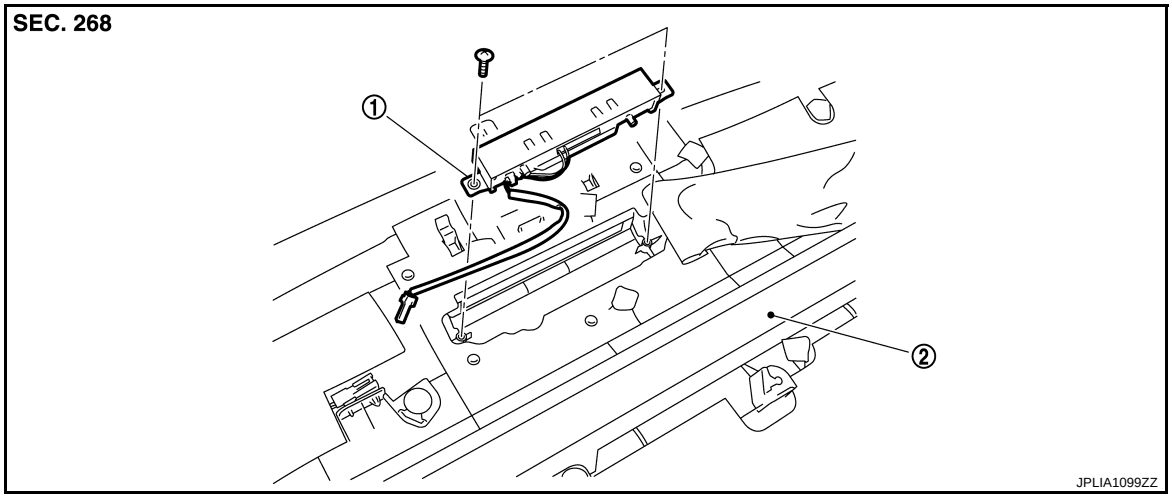
BACK-UP LAMP BULB

1. Remove the rear combination lamp. Refer to EXL-354, "Exploded View".
2. Rotate the back-up lamp bulb socket counterclockwise, and unlock it.
3. Remove the bulb from the back-up lamp bulb socket.

HIGH-MOUNTED STOP LAMP

Exploded View

INFOID:0000000003894376



1. High-mounted stop lamp
2. Rear parcel shelf finisher

Removal and Installation

INFOID:0000000003894377

CAUTION:
Disconnect battery negative terminal or remove the fuse.

REMOVAL

1. Remove the rear parcel shelf finisher. Refer to INT-43, "Exploded View".
2. Remove the screw. And then disconnect the connector.
3. Remove the high-mounted stop lamp.

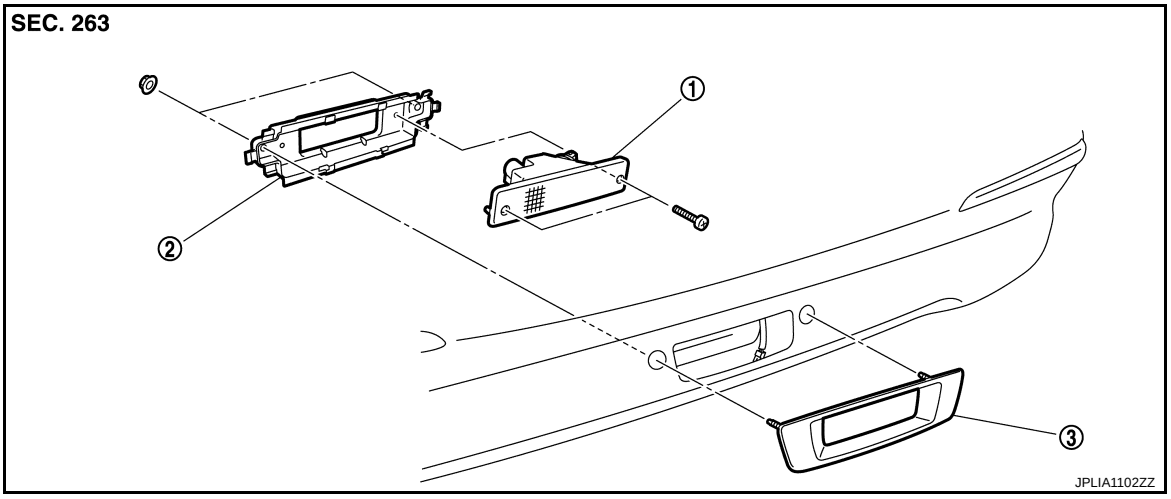
INSTALLATION

Install in the reverse order of removal.

REAR FOG LAMP

Exploded View

INFOID:0000000003894378



1. Rear fog lamp
2. Rear fog lamp bracket
3. Rear fog lamp finisher

Removal and Installation

INFOID:0000000003894379

CAUTION:
Disconnect battery negative terminal or remove the fuse.

REMOVAL

1. Disconnect the rear fog lamp connector.
2. Remove the nuts. And then remove the rear fog lamp rim.
3. Remove the screw. And then remove the rear fog lamp from the rear fog lamp rim.

INSTALLATION

Installation is the reverse order of removal.

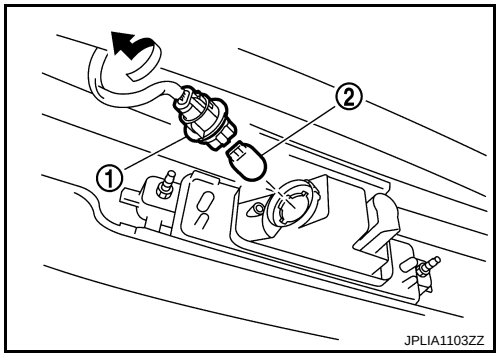
Replacement

INFOID:0000000003894380

CAUTION:
- **Disconnect the battery negative terminal or remove the fuse.**
- **Never touch the glass of bulb directly by hand. Keep grease and other oily matters away from it. Never touch bulb by hand while it is lit or right after being turned off.**
- **Never leave bulb out of lamp reflector for a long time because dust, moisture smoke, etc. may affect the performance of lamp. When replacing bulb, be sure to replace it with new one.**

REAR FOG LAMP BULB

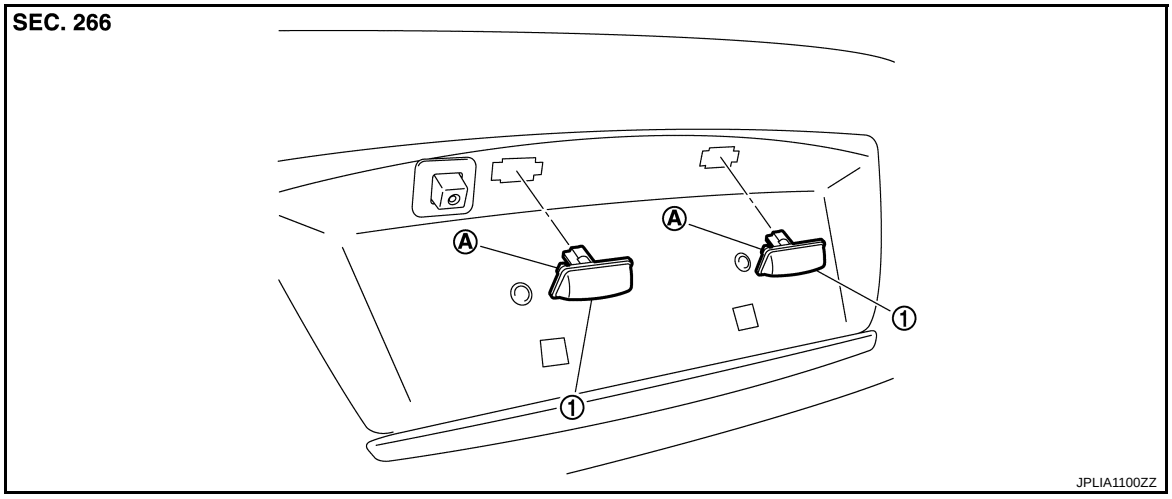
1. Turn the bulb socket (1) counterclockwise and unlock it.
2. Remove the bulb (2) from the rear fog lamp bulb socket.



LICENSE PLATE LAMP

Exploded View

INFOID:0000000003894381



1. License plate lamp
A. Resin clip

Removal and Installation

INFOID:0000000003894382

CAUTION:
Disconnect the battery negative terminal or remove the fuse.

REMOVAL

1. Remove the trunk lid finisher inner. Refer to INT-59, "Exploded View".
2. Remove the trunk lid finisher outer. Refer to INT-59, "Exploded View".
3. Remove the license plate lamp while pushing a resin clip.
4. Disconnect the license plate lamp connector.

INSTALLATION

Install in the reverse order of removal.

Replacement

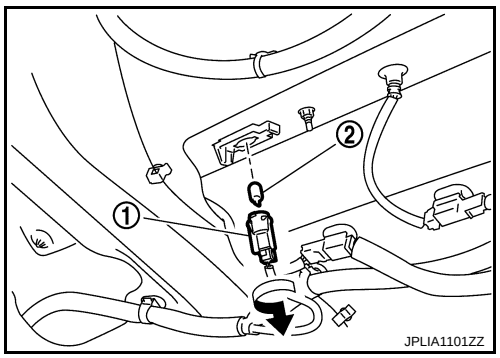
INFOID:0000000003894383

CAUTION:
- **Disconnect the battery negative terminal or remove the fuse.**
- **Never touch the glass of bulb directly by hand. Keep grease and other oily matters away from it. Never touch bulb by hand while it is lit or right after being turned off.**
- **Never leave bulb out of lamp reflector for a long time because dust, moisture smoke, etc. may affect the performance of lamp. When replacing bulb, be sure to replace it with new one.**

LICENSE PLATE LAMP BULB

1. Remove the trunk lid finisher inner. Refer to INT-59, "Exploded View".

2. Turn the license plate lamp bulb socket (1) counterclockwise and unlock it.
3. Remove the bulb (2) from the license plate lamp bulb socket.



SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Bulb Specifications

INFOID:0000000003773752

Item		Type	Wattage (W)
Front combination lamp	Headlamp (HI)	H9	65
	Headlamp (LO)	H11	55
	Parking Lamp	W5W	5
	Front turn signal	WY21W (Amber)	21
Front fog lamp		H11	55
Front side turn signal lamp (integrated into the door mirror)		LED	—
Rear combination lamp	Stop/tail lamp	LED	—
	Rear turn signal lamp	S25 (Amber)	21
	Back-up lamp	W16W	16
License plate lamp		W5W	5
High-mounted stop lamp		LED	—
Rear fog lamp		W21W	21