SECTION RF
ROOF

CONTENTS

PRECAUTION 3

PRECAUTIONS 3
Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" 3
Precaution for Work 3

PREPARATION 4

PREPARATION 4
Special Service Tool 4
Commercial Service Tools 4

SYSTEM DESCRIPTION 5

COMPONENT PARTS 5

MOONROOF 5
MOONROOF : Component Parts Location 5
MOONROOF : Component Description 5
MOONROOF : Moonroof Switch 6
MOONROOF : Moonroof Motor Assembly 6
MOONROOF : Sunshade Motor Assembly 6

SYSTEM 7

MOONROOF 7
MOONROOF : System Diagram 7
MOONROOF : System Description 7

DIAGNOSIS SYSTEM (BCM) 9

COMMON ITEM 9
COMMON ITEM : CONSULT Function (BCM - COMMON ITEM) 9

RETAINED PWR 9
RETAINED PWR : CONSULT Function (BCM - RETAINED PWR) 9

ECU DIAGNOSIS INFORMATION 11

BCM 11
List of ECU Reference 11

MOONROOF MOTOR ASSEMBLY 12
Reference Value 12

SUNSHADE MOTOR ASSEMBLY 14
Reference Value 14

WIRING DIAGRAM 15

MOONROOF SYSTEM 15
Wiring Diagram 15

BASIC INSPECTION 20

DIAGNOSIS AND REPAIR WORKFLOW 20
Work Flow 20

INSPECTION AND ADJUSTMENT 22

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT 22
ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement 22

DTC/CIRCUIT DIAGNOSIS 23

POWER SUPPLY AND GROUND CIRCUIT 23

BCM 23
BCM : Diagnosis Procedure 23

MOONROOF MOTOR ASSEMBLY 24
MOONROOF MOTOR ASSEMBLY : Description 24
MOONROOF MOTOR ASSEMBLY : Component Function Check 24
MOONROOF MOTOR ASSEMBLY : Diagnosis Procedure 24
MOONROOF MOTOR ASSEMBLY : Special Repair Requirement 26

SUNSHADE MOTOR ASSEMBLY 27
SUNSHADE MOTOR ASSEMBLY : Description 27

SUNSHADE MOTOR ASSEMBLY : Component Function Check 27
SUNSHADE MOTOR ASSEMBLY : Diagnosis Procedure 27

MOONROOF SWITCH 29
Description 29
Diagnosis Procedure 29
Component Inspection 30

DOOR SWITCH 32
Component Function Check 32
Diagnosis Procedure 32
Component Inspection 33

SYMPTOM DIAGNOSIS 34

MOONROOF DOES NOT OPERATE PROPERLY 34
Diagnosis Procedure 34

SUNSHADE SYSTEM DOES NOT OPERATE PROPERLY 35
Diagnosis Procedure 35

AUTO OPERATION DOES NOT OPERATE 36

MOONROOF 36
MOONROOF : Diagnosis Procedure 36

SUNSHADE 36
SUNSHADE : Diagnosis Procedure 36

ANTI-PINCH FUNCTION DOES NOT OPERATE 37

MOONROOF 37
MOONROOF : Diagnosis Procedure 37

SUNSHADE 37
SUNSHADE : Diagnosis Procedure 37

RETAINED POWER OPERATION DOES NOT OPERATE PROPERLY 38
Diagnosis Procedure 38

SQUEAK AND RATTLE TROUBLE DIAGNOSES 39
Work Flow 39
Generic Squeak and Rattle Troubleshooting 40
Diagnostic Worksheet 43

REMOVAL AND INSTALLATION 45

GLASS LID 45
Exploded View 45
Removal and Installation 45

MOONROOF MOTOR ASSEMBLY 47
Exploded View 47
Removal and Installation 47

MOONROOF UNIT ASSEMBLY 49
Inspection 49
Exploded View 53
Removal and Installation 53

SUNSHADE MOTOR ASSEMBLY 55
Removal and Installation 55

WIND DEFLECTOR 56
Removal and Installation 56

MOONROOF SWITCH 57
Removal and Installation 57

UNIT DISASSEMBLY AND ASSEMBLY ... 58

PANORAMIC ROOF GLASS 58
Exploded View 58
Disassembly and Assembly 58

SUNSHADE 60
Disassembly and Assembly 60

PRECAUTION

PRECAUTIONS

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

INFOID:0000000014907793

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. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, it is recommended that all maintenance and repair be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper repair, 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 SR section.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

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

WARNING:

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

Precaution for Work

INFOID:0000000014625575

- When removing or disassembling each component, be careful not to damage or deform it. If a component may be subject to interference, be sure to protect it with a shop cloth.
- When removing (disengaging) components with a screwdriver or similar tool, be sure to wrap the component with a shop cloth or vinyl tape to protect it.
- Protect the removed parts with a shop cloth and prevent them from being dropped.
- Replace a deformed or damaged clip.
- If a part is specified as a non-reusable part, always replace it with a new one.
- Be sure to tighten bolts and nuts securely to the specified torque.
- After installation is complete, be sure to check that each part works properly.
- Follow the steps below to clean components:

- Water soluble dirt:

- Dip a soft cloth into lukewarm water, wring the water out of the cloth and wipe the dirty area.
- Then rub with a soft, dry cloth.

- Oily dirt:

- Dip a soft cloth into lukewarm water with mild detergent (concentration: within 2 to 3%) and wipe the dirty area.
- Then dip a cloth into fresh water, wring the water out of the cloth and wipe the detergent off.
- Then rub with a soft, dry cloth.

- Do not use organic solvent such as thinner, benzene, alcohol or gasoline.
- For genuine leather seats, use a genuine leather seat cleaner.

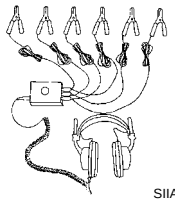
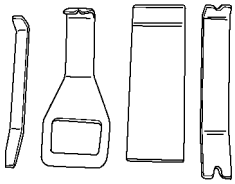
PREPARATION

PREPARATION

Special Service Tool

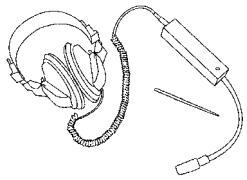
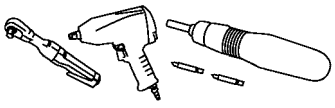
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The actual shape of the tools may differ from those illustrated here.

Tool number (TechMate No.) Tool name	Description
— (J-39570) Chassis Ear  SIIA0993E	Locating the noise
— (J-50397) NISSAN Squeak and Rattle Kit  ALJIA1232ZZ	Repairing the cause of noise
— (J-46534) Trim Tool Set  AWJIA0483ZZ	Removing trim components

Commercial Service Tools

INFOID:0000000014625577

(TechMate No.) Tool name	Description
(J-39565) Engine Ear  SIIA0995E	Locating the noise
(—) Power tool  PIIB1407E	Loosening nuts, screws and bolts

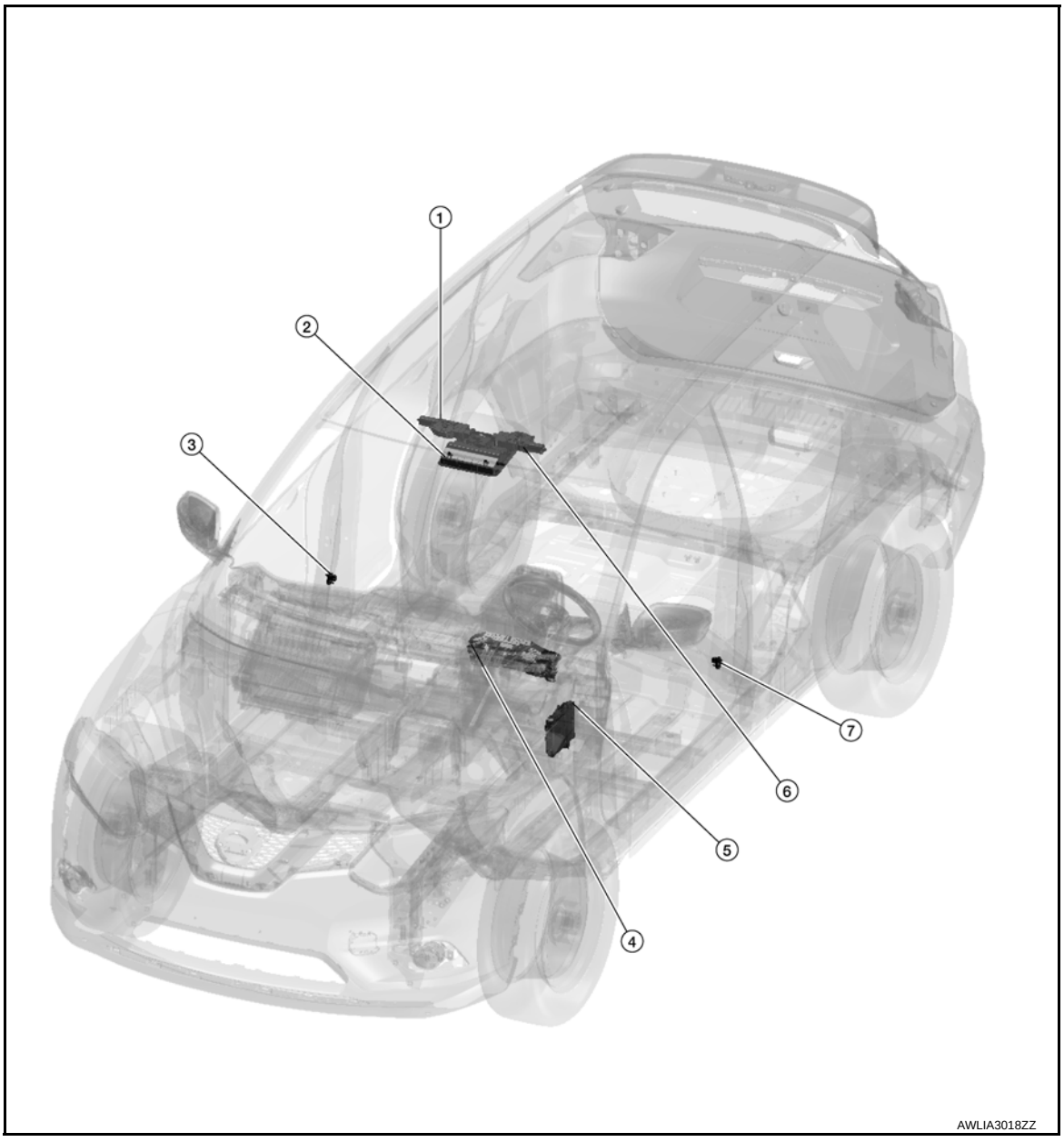
SYSTEM DESCRIPTION

COMPONENT PARTS

MOONROOF

MOONROOF : Component Parts Location

INFOID:0000000014625578



MOONROOF : Component Description

INFOID:0000000014625579

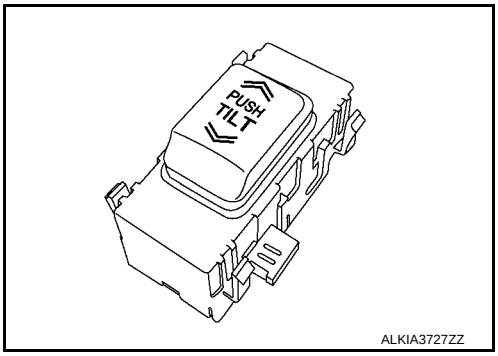
No.	Component	Function
1.	Moonroof motor assembly	Refer to RF-6, "MOONROOF : Moonroof Motor Assembly".
2.	Moonroof switch	Refer to RF-6, "MOONROOF : Moonroof Switch".
3.	Front door switch RH	Detects door open/close condition and transmits to BCM. Refer to DLK-332, "Removal and Installation" for detailed installation information.
4.	Combination meter	Transmits the vehicle speed signal to BCM via CAN communication. Refer to MWI-81, "Removal and Installation" for detailed installation information.

No.	Component	Function
5.	BCM	Supplies the power supply to the moonroof & sunshade motor assembly. Refer to BCS-73, "Removal and Installation" for detailed installation information.
6.	Sunshade motor assembly	Refer to RF-6, "MOONROOF : Sunshade Motor Assembly".
7.	Front door switch LH	Detects door open/close condition and transmits to BCM. Refer to DLK-332, "Removal and Installation" for detailed installation information.

MOONROOF : Moonroof Switch

INFOID:0000000015221565

- Transmits tilt up/slide close and tilt down/slide open signal to moonroof motor and sunshade motor assemblies.

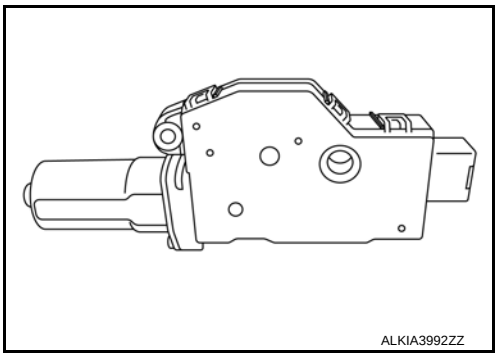


ALKIA3727ZZ

MOONROOF : Moonroof Motor Assembly

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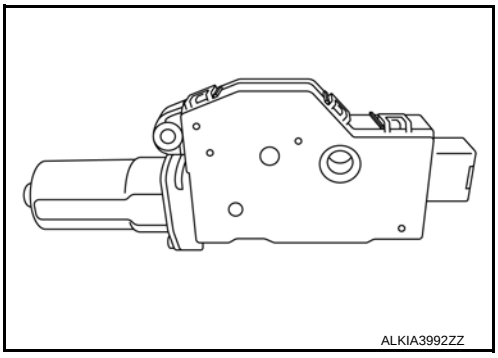
- Moonroof motor and CPU are integrated in moonroof motor assembly.
- Moonroof motor assembly operates moonroof to tilt up/down or slide open/close by sunroof switch operation.


ALKIA3992ZZ

MOONROOF : Sunshade Motor Assembly

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- Activated with a signal from the sunshade switch.


ALKIA3992ZZ

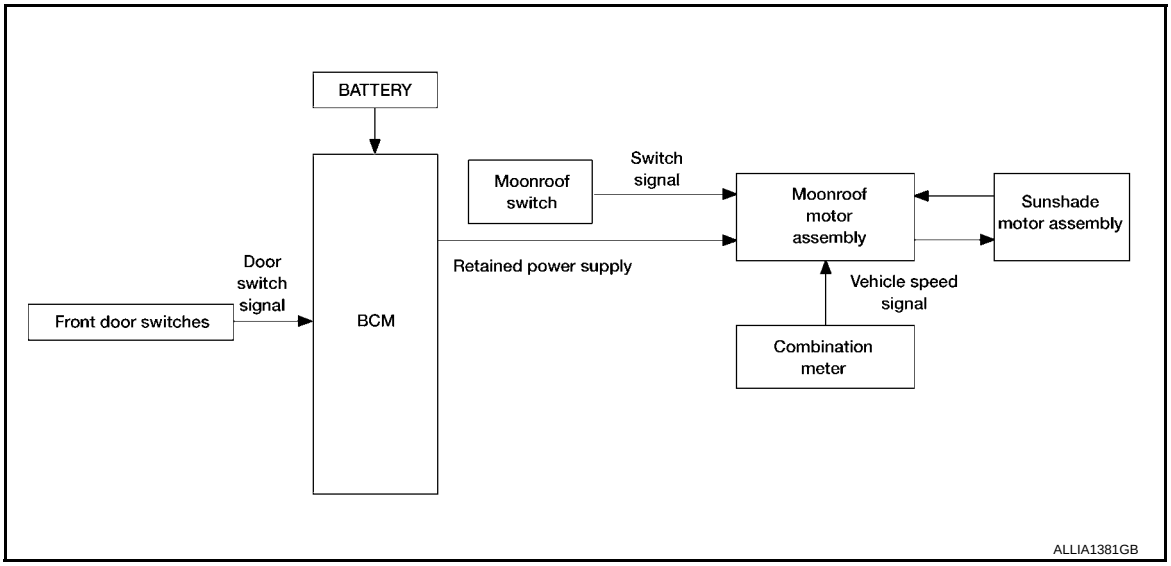
SYSTEM

MOONROOF

MOONROOF : System Diagram

INFOID:0000000014625580

MOONROOF & SUNSHADE



MOONROOF : System Description

INFOID:0000000014625581

MOONROOF SYSTEM

INPUT/OUTPUT SIGNAL CHART

Item	Input signal to moonroof motor assembly	Moonroof motor function	Actuator
Moonroof switch	Moonroof signal (tilt up/down or slide open/close)	Receives signal and moves the moonroof and sunshade assembly to the correct position.	Moonroof motor and/or Sunshade motor
	Sunshade signal (slide open/close)		
Combination meter	Vehicle speed signal	Receives speed signal and determines the amount of torque the motor requires.	
BCM	RAP signal	Retained power after the key is turned off and the front doors stay closed.	

MOONROOF AND SUNSHADE OPERATION

- Moonroof motor and sunshade motor assembly operates with the power supply that is output from the BCM while the ignition switch is ON or retained power is operating.
- Tilt up/down & slide open/close signals from the moonroof switch enable the moonroof motor and sunshade motor to move.
- Moonroof motor assembly receives a vehicle speed signal from the combination meter and controls the moonroof motor torque of tilt down at the time of high speed operation.

AUTO OPERATION

Moonroof and Sunshade AUTO feature makes it possible to slide open and slide closed the moonroof and sunshade without holding the moonroof switch in the slide open/close position.

RETAINED POWER OPERATION

- Retained power operation is an additional power supply function that enables the moonroof and sunshade system to operate for 45 seconds after the ignition switch is turned off and the front doors remain closed.

Retained power function cancel conditions:

- Door CLOSE (door switch OFF)→OPEN (door switch ON).
- When ignition switch is ON again.
- When timer time passes (45 seconds).

ANTI-PINCH FUNCTION

The moonroof and sunshade motor's built in CPU monitors the moonroof motor and sunshade motor operation and position.
If a restriction is detected during the slide closed operation the moonroof/sunshade motor will move the glass/sunshade in the open positions.

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:0000000015221593

APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM.

Direct Diagnostic Mode	Description
Ecu Identification	The BCM part number is displayed.
Self Diagnostic Result	The BCM self diagnostic results are displayed.
Data Monitor	The BCM input/output data is displayed in real time.
Active Test	The BCM activates outputs to test components.
Work support	The settings for BCM functions can be changed.
Configuration	• The vehicle specification can be read and saved. • The vehicle specification can be written when replacing BCM.
CAN Diag Support Mntr	The result of transmit/receive diagnosis of CAN communication is displayed.

SYSTEM APPLICATION

BCM can perform the following functions.

System	Sub System	Direct Diagnostic Mode						
		Ecu Identification	Self Diagnostic Result	Data Monitor	Active Test	Work support	Configuration	CAN Diag Support Mntr
Door lock	DOOR LOCK		×	×	×	×		
Rear window defogger	REAR DEFOGGER			×	×	×		
Warning chime	BUZZER			×	×			
Interior room lamp timer	INT LAMP			×	×	×		
Exterior lamp	HEADLAMP			×	×	×		
Wiper and washer	WIPER			×	×	×		
Turn signal and hazard warning lamps	FLASHER			×	×			
Intelligent Key system	INTELLIGENT KEY		×	×	×	×		
Combination switch	COMB SW			×				
BCM	BCM	×	×			×	×	×
Immobilizer	IMMU		×	×	×			
Interior room lamp battery saver	BATTERY SAVER			×	×			
Back door open	TRUNK			×				
Vehicle security system	THEFT ALM			×	×	×		
RAP system	RETAINED PWR			×				
Signal buffer system	SIGNAL BUFFER			×	×			

RETAINED PWR

RETAINED PWR : CONSULT Function (BCM - RETAINED PWR)

INFOID:0000000015221594

DATA MONITOR

Monitor Item [Unit]	Description
DOOR SW-DR [On/Off]	Indicates condition of front door switch LH.
DOOR SW-AS [On/Off]	Indicates condition of front door switch RH.

ECU DIAGNOSIS INFORMATION

BCM

List of ECU Reference

INFOID:0000000014625586

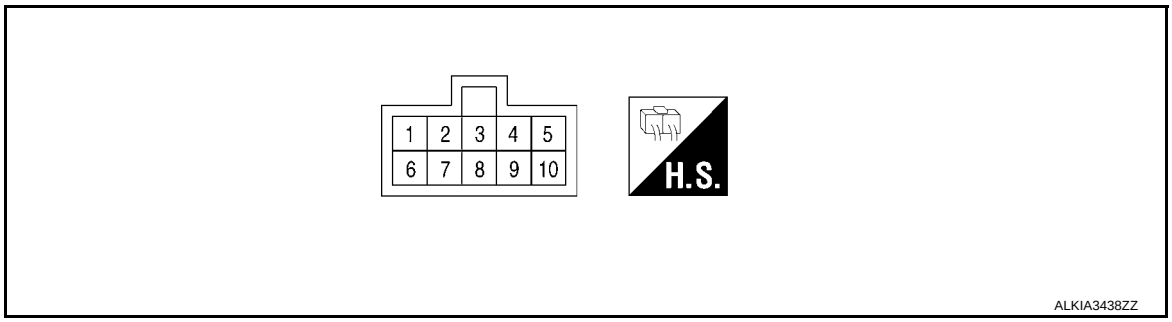
ECU	Reference
BCM	BCS-28, "Reference Value"
	BCS-46, "Fail-safe"
	BCS-47, "DTC Inspection Priority Chart"
	BCS-48, "DTC Index"

MOONROOF MOTOR ASSEMBLY

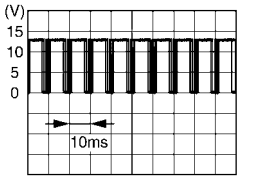
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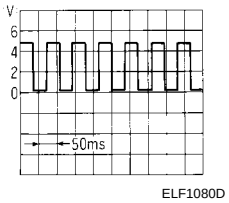
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TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Voltage (Approx.)
+	-	Signal name	Input/ Output		
1 (B)	Ground	Ground	—	—	0
2 (BR)	Ground	Sunshade open/close switch (second click) signal	Output	Moonroof switch in following (second click) position: • OPEN • CLOSE	0
3 (Y)	Ground	Ign power supply	Input	—	Battery voltage
4 (W)	Ground	Push switch signal	Input	Moonroof switch in following (second click to close sun-shade)	Battery voltage
					Battery voltage
					0
5 (L)	Ground	Moonroof OPEN switch signal	Input	Moonroof switch in following position • TILT DOWN • SLIDE OPEN	0
				Other than above	Battery voltage
6 (R)	Ground	Moonroof power supply	Input	—	Battery voltage
7 (GR)	Ground	Communication line	Input/ Output	Ignition switch ON	 JMKIB2719GB

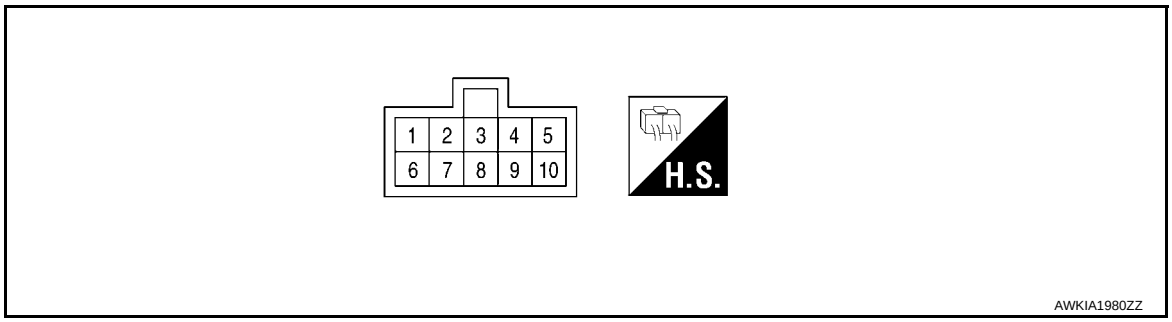
Terminal No. (Wire color)		Description		Condition	Voltage (Approx.)
+	-	Signal name	Input/ Output		
8 (G)	Ground	Vehicle speed signal	Input	Speedometer operated [When vehicle speed is approx.40km/ h (25MPH)]	 ELF1080D
10 (LG)	Ground	Moonroof CLOSE switch signal	Input	Moonroof switch in following position • TILT UP • SLIDE CLOSE	0
				Other than above	Battery voltage

SUNSHADE MOTOR ASSEMBLY

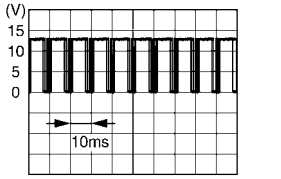
Reference Value

INFOID:0000000014625588

TERMINAL LAYOUT



PHYSICAL VALUES

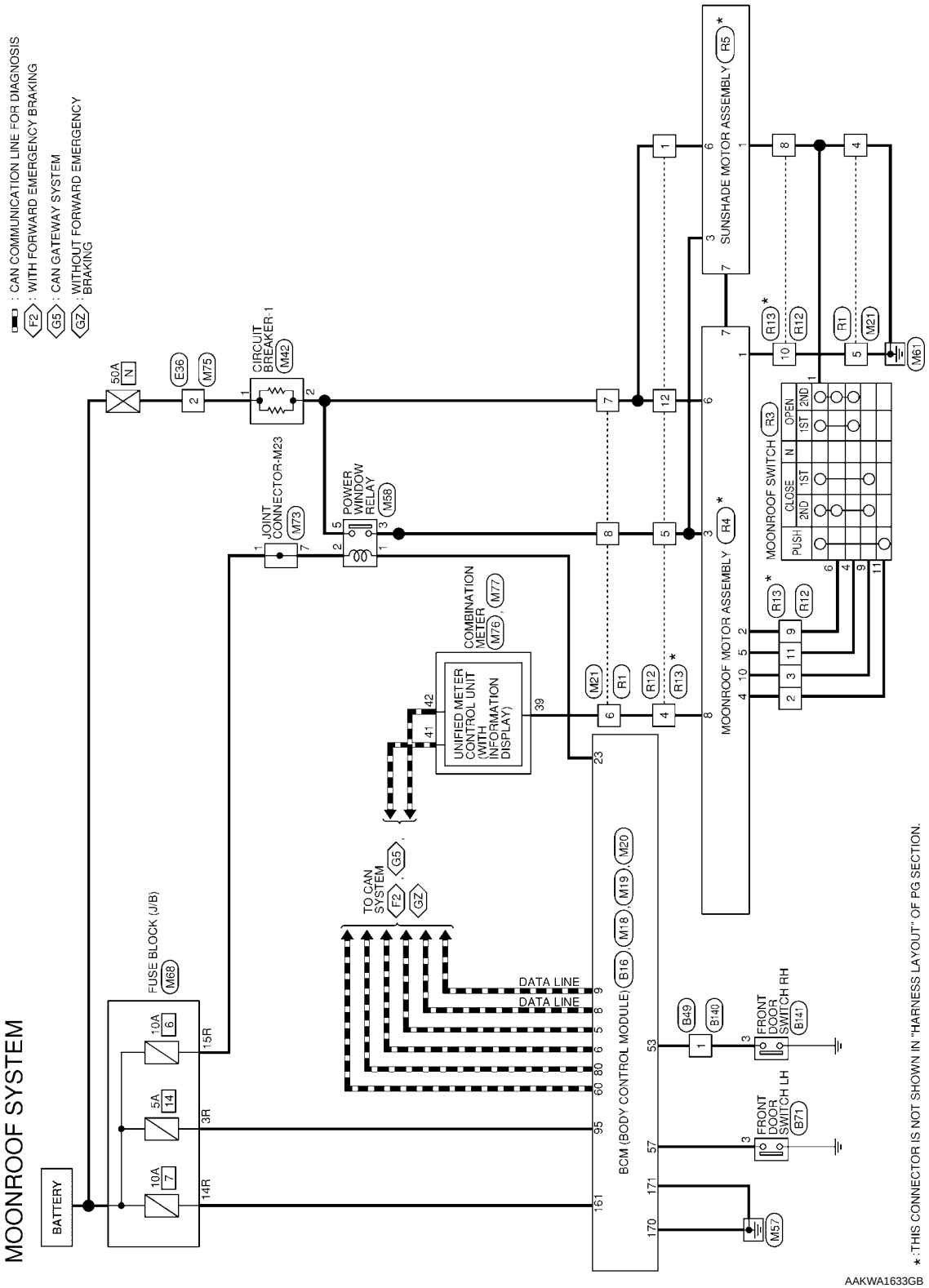
Terminal No. (Wire color)		Description		Condition	Voltage (Approx.)
+	-	Signal name	Input/ Output		
1 (P)	Ground	Ground	—	—	0
3 (Y)	Ground	Ign power supply	Input	Within 45 seconds after the ignition is turned off	Battery voltage
				When the driver side or passenger side door is opened during retained power operation.	0
6 (V)	Ground	Bat + power supply	—	—	Battery voltage
7 (GR)	Ground	Communication line	Input/ Output	Ignition switch ON	 JMKIB2719GB

WIRING DIAGRAM

MOONROOF SYSTEM

Wiring Diagram

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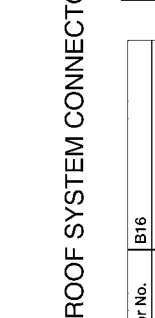


AAKWA1633GB

MOONROOF SYSTEM CONNECTORS

Connector No.	B16
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH
Connector Color	GREEN

H.S.

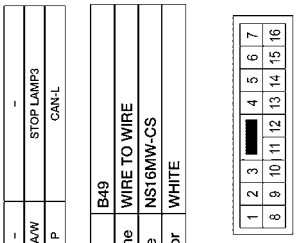


Terminal No.	Color of Wire	Signal Name
41	–	–
42	–	–
43	–	–
44	–	–
45	–	–
46	R	SES BACKDOOR BUTTON SW
47	–	–
48	–	–
49	G	NO TOUCH TGATE SENSOR
50	W	RR DOOR SW
51	LG	TGATE SW
52	R	RL DOOR SW
53	SB	AS DOOR2 SW
54	–	–
55	LA/G	RR AUTOSTOP SW
56	Y	TGATE OPENER SW
57	SB	DR DOOR2 SW
58	–	–
59	–	–
60	L	CAN-H
61	V	SES EXT REAR ANTENNA B
62	Y	SES INT MIDDLE ANTENNA B
63	L	SES INT MIDDLE ANTENNA A
64	LG	SES EXT REAR ANTENNA A
65	–	–
66	–	–
67	–	–
68	–	–
69	–	–
70	–	–
71	–	–
72	–	–
73	–	–
74	–	–
75	–	–
76	–	–
77	V	SHIFT LOCK RLY

78	–	–
79	LA/W	STOP LAMP3
80	P	CAN-L

Connector No.	B49
Connector Name	WIRE TO WIRE
Connector Type	NS16MW-CS
Connector Color	WHITE

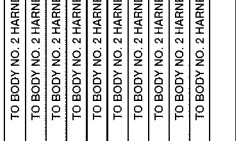
H.S.



Terminal No.	Color of Wire	Signal Name
1	SB	TO BODY NO. 2 HARNESS
2	W	TO BODY NO. 2 HARNESS
3	LA/W	TO BODY NO. 2 HARNESS
4	V	TO BODY NO. 2 HARNESS
5	SB	TO BODY NO. 2 HARNESS
6	LA/BR	TO BODY NO. 2 HARNESS
7	P	TO BODY NO. 2 HARNESS
8	LA/W	TO BODY NO. 2 HARNESS
9	LA/BR	TO BODY NO. 2 HARNESS
10	R	TO BODY NO. 2 HARNESS
11	LA/G	TO BODY NO. 2 HARNESS
12	LA/P	TO BODY NO. 2 HARNESS
13	–	TO BODY NO. 2 HARNESS
14	–	TO BODY NO. 2 HARNESS
15	G	TO BODY NO. 2 HARNESS
16	V	TO BODY NO. 2 HARNESS

Connector No.	B71
Connector Name	FRONT DOOR SWITCH LH
Connector Type	TH04FW-NH
Connector Color	WHITE

H.S.

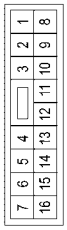


Terminal No.	Color of Wire	Signal Name
1	–	–
2	–	–
3	–	–
4	SB	I DR DOOR2 SW

4	–	–

Connector No.	B140
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS
Connector Color	WHITE

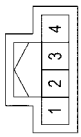
H.S.



Terminal No.	Color of Wire	Signal Name
1	GR	TO BODY HARNESS
2	W	TO BODY HARNESS
3	LA/Y	TO BODY HARNESS
4	V	TO BODY HARNESS
5	SB	TO BODY HARNESS
6	LA/BR	TO BODY HARNESS
7	LA/V	TO BODY HARNESS
8	L	TO BODY HARNESS
9	Y	TO BODY HARNESS
10	R	TO BODY HARNESS
11	V	TO BODY HARNESS
12	LG	TO BODY HARNESS
13	L	TO BODY HARNESS
14	Y	TO BODY HARNESS
15	LA/GR	TO BODY HARNESS
16	LA/LG	TO BODY HARNESS

Connector No.	B141
Connector Name	FRONT DOOR SWITCH RH
Connector Type	TH04FW-NH
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
1	–	–
2	–	–
3	GR	I AS DOOR2 SW
4	–	–

Connector No.	E36
Connector Name	WIRE TO WIRE
Connector Type	L02FB-MC
Connector Color	BLACK

H.S.

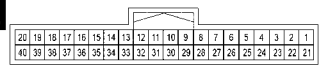
Terminal No.	Color of Wire	Signal Name
1	–	TO MAIN HARNESS
2	W	TO MAIN HARNESS

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MOONROOF SYSTEM CONNECTORS

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FGY-NH
Connector Color	GRAY

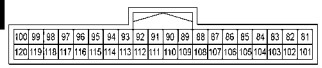
H.S.



Terminal No.	Color of Wire	Signal Name
1	L	LIN 3 D
2	LA/G	DI FR LEFT D
3	LA/Y	DI FR RIGHT D
4	P	SPARE4 RL N
5	R	CAN-L
6	L	CAN-H
7	–	–
8	L	CAN-H
9	R	CAN-L
10	BG	DOORLOCK SW
11	Y	HAZARD SW D
12	W	PWR AUTOLIGHT SENSOR
13	–	–
14	–	–
15	–	–
16	–	–
17	L	PWR ATDVC
18	–	–
19	LG	AUTOLIGHT SENSOR
20	–	–
21	–	–
22	–	–
23	G	WL AUTHORIZATION RL
24	LA/R	DEFROSTER RL D
25	BR	BAT TEMP1 RL
26	–	–
27	Y	IGN1 RL
28	LA/W	IGN2 RL
29	–	–
30	V	GND AUTOLIGHT SENSOR
31	–	–
32	–	–
33	LG	CSW 5
34	Y	CSW 5
35	BG	SECURITY LED
36	G	CSW 4
37	GR	CSW 4
38	V	CSW 1
39	W	CSW 2
40	SB	DOORUNLOCK SW

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH
Connector Color	BLACK

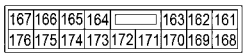
H.S.



Terminal No.	Color of Wire	Signal Name
81	–	–
82	W	SES FR HANDLE BUTTON SW
83	–	–
84	BR	CSW 2
85	SB	CSW 1
86	P	CSW 3
87	BG	CSW 4
88	W	START SW BACKLIGHT LED
89	Y	START WO ESCL SW
90	–	–
91	–	–
92	BR	KEY CYLINDER LOCK SW
93	P	KEY CYLINDER UNLOCK SW
94	G	AT LOCKED IN PARK SW
95	V	SHORTING PIN
96	–	–
97	–	–
98	–	–
99	–	–
100	V	SES EXT DR ANTENNA A
101	–	–
102	–	–
103	–	–
104	R	DR KNOB SW
105	Y	SES DR HANDLE BUTTON SW
106	W	AUTO ACC2
107	–	–
108	–	–
109	–	–
110	BG	MR OUTPUT
111	–	–
112	–	–
113	–	–
114	Y	IMMOBILIZER KAZASHI B
115	W	IMMOBILIZER KAZASHI A
116	BG	SES INT FRONT ANTENNA B
117	GR	SES INT FRONT ANTENNA A
118	SB	SES EXT AS ANTENNA B
119	P	SES EXT AS ANTENNA A
120	BR	SES EXT DR ANTENNA B

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS16FBR-CS
Connector Color	BROWN

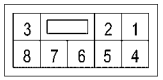
H.S.



Terminal No.	Color of Wire	Signal Name
161	W	PWR ECU
162	SB	PWM ROOMLAMP 1
163	L	AS LOCK OR UNLOCK D
164	–	–
165	V	DR OR FR LOCK D
166	–	–
167	LA/V	PWR DOORLOCK1
168	BG	PWR FLASHERS
169	GR	PWR STOP LAMP
170	B	GND1
171	B	GND2
172	G	FR OR DR UNLOCK D
173	–	–
174	–	–
175	R	PWR DOORLOCK2
176	LG	PWR WIPER

Connector No.	M21
Connector Name	WIRE TO WIRE
Connector Type	NS08FW-CS
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
1	–	TO ROOM LAMP HARNESS
2	V	TO ROOM LAMP HARNESS
3	B	TO ROOM LAMP HARNESS
4	B	TO ROOM LAMP HARNESS
5	–	TO ROOM LAMP HARNESS
6	W	TO ROOM LAMP HARNESS
7	R	TO ROOM LAMP HARNESS
8	Y	TO ROOM LAMP HARNESS

Connector No.	M42
Connector Name	CIRCUIT BREAKER-1
Connector Type	M02FW-P-LC
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
1	W	BATTERY
2	P	PWD PTC

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MOONROOF SYSTEM CONNECTORS

Connector No.	M58
Connector Name	POWER WINDOW RELAY
Connector Type	24347_9F900
Connector Color	BLUE

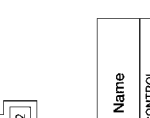
H.S.



Terminal No.	Color of Wire	Signal Name
1	G	RELAY CONTROL
2	W	BATTERY
3	L	RELAY OUTPUT
5	P	BATTERY

Connector No.	M68
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FBR-CS
Connector Color	BROWN

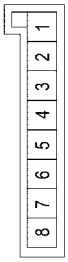
H.S.



Terminal No.	Color of Wire	Signal Name
1R	V	ILLUMINATION +
2R	G	IGNITION
3R	V	BATTERY
4R	–	–
5R	–	–
6R	LA/L	ACCESSORY
7R	LA/V	BATTERY
8R	–	–
9R	–	–
10R	GR	BATTERY
11R	–	–
12R	–	–
13R	–	–
14R	W	BATTERY
15R	W	BATTERY
16R	GR	ACCESSORY

Connector No.	M73
Connector Name	JOINT CONNECTOR-M23
Connector Type	SAC08JW
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
1	W	BATTERY
2	GR	BATTERY
3	W	BATTERY
4	W	BATTERY
5	W	BATTERY
6	W	BATTERY
7	W	BATTERY
8	W	BATTERY

Connector No.	M75
Connector Name	WIRE TO WIRE
Connector Type	L02MB-MC
Connector Color	BLACK

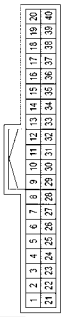
H.S.



Terminal No.	Color of Wire	Signal Name
1	–	TO ENGINE ROOM HARNESS
2	W	TO ENGINE ROOM HARNESS

Connector No.	M76
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
1	B	GND
2	–	–
3	–	–
4	–	–
5	–	–
6	–	–
7	BG	SECURITY
8	–	–
9	GR	ECO MODE SW
10	–	–
11	–	–
12	–	–
13	–	–
14	–	–
15	L	OUTSIDE TEMP SENSOR
16	–	–
17	BG	SATELLITE SW GND
18	SB	TRIP RESET SW
19	–	–
20	Y	OUTSIDE TEMP GND
21	L	GND (STRG SW GND)
22	Y	STRG SW A
23	GR	STRG SW B
24	BR	WASHER SW
25	V	BRAKE OIL SW
26	G	PKB SW
27	–	–
28	Y	DR BELT SW
29	R	SPORT MODE SW
30	LG	M RANGE
31	SB	NOT M RANGE
32	BG	AT SHIFT UP
33	BR	AT SHIFT DOWN
34	–	–
35	–	–
36	GR	ILL UP SW
37	V	ILL DOWN SW
38	G	8P/R OUTPUT

39	W	2P/R OUTPUT
40	–	–

Connector No.	M77
Connector Name	COMBINATION METER
Connector Type	TH12FW-NH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
41	L	CAN-H
42	P	CAN-L
43	R	ILL CONT OUT
44	LA/B	FUEL SENSOR GND
45	G	BAT
46	V	IGN
47	SB	M-CAN H
48	LG	M-CAN L
49	–	–
50	–	–
51	LA/L	FUEL SENSOR
52	B	G1

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MOONROOF SYSTEM CONNECTORS

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Type	NS08MW-CS
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	–	TO MAIN HARNESS
2	P	TO MAIN HARNESS
3	B	TO MAIN HARNESS
4	B	TO MAIN HARNESS
5	–	TO MAIN HARNESS
6	W	TO MAIN HARNESS
7	Y	TO MAIN HARNESS
8	R	TO MAIN HARNESS

Connector No.	R3
Connector Name	MOONROOF SWITCH
Connector Type	TH12FW-NH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	B	GROUND
2	–	–
3	–	–
4	G	OPEN SW
5	–	–
6	LG	2ND CLICK SW
7	–	–
8	–	–
9	W	CLOSE SW
10	–	–
11	P	PUSH SW
12	–	–

Connector No.	R4
Connector Name	MOONROOF MOTOR ASSEMBLY
Connector Type	YEA10FGY
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
1	B	GROUND
2	BR	2ND CLICK SW
3	Y	IGN
4	W	PUSH SW
5	L	OPEN SW
6	R	BATTERY
7	GR	SERIAL
8	G	VEHICLE SPEED
9	–	–
10	LG	CLOSE SW

Connector No.	R5
Connector Name	SUNSHADE MOTOR ASSEMBLY
Connector Type	YEA10FGY
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
1	P	GROUND
2	–	–
3	Y	IGN
4	–	–
5	–	–
6	V	BATTERY
7	GR	SERIAL
8	–	–
9	–	–
10	–	–

Connector No.	R12
Connector Name	WIRE TO WIRE
Connector Type	NS12FW-CS
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	Y	TO ROOM LAMP SUB HARNESS
2	P	TO ROOM LAMP SUB HARNESS
3	W	TO ROOM LAMP SUB HARNESS
4	W	TO ROOM LAMP SUB HARNESS
5	R	TO ROOM LAMP SUB HARNESS
6	–	–
7	–	–
8	B	TO ROOM LAMP SUB HARNESS
9	LG	TO ROOM LAMP SUB HARNESS
10	B	TO ROOM LAMP SUB HARNESS
11	G	TO ROOM LAMP SUB HARNESS
12	Y	TO ROOM LAMP SUB HARNESS

Connector No.	R13
Connector Name	WIRE TO WIRE
Connector Type	NS12MW-CS
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	V	TO ROOM LAMP SUB HARNESS
2	W	TO ROOM LAMP SUB HARNESS
3	LG	TO ROOM LAMP SUB HARNESS
4	G	TO ROOM LAMP SUB HARNESS
5	Y	TO ROOM LAMP SUB HARNESS
6	–	–
7	–	–
8	P	TO ROOM LAMP SUB HARNESS
9	BR	TO ROOM LAMP SUB HARNESS
10	B	TO ROOM LAMP SUB HARNESS
11	L	TO ROOM LAMP SUB HARNESS
12	R	TO ROOM LAMP SUB HARNESS

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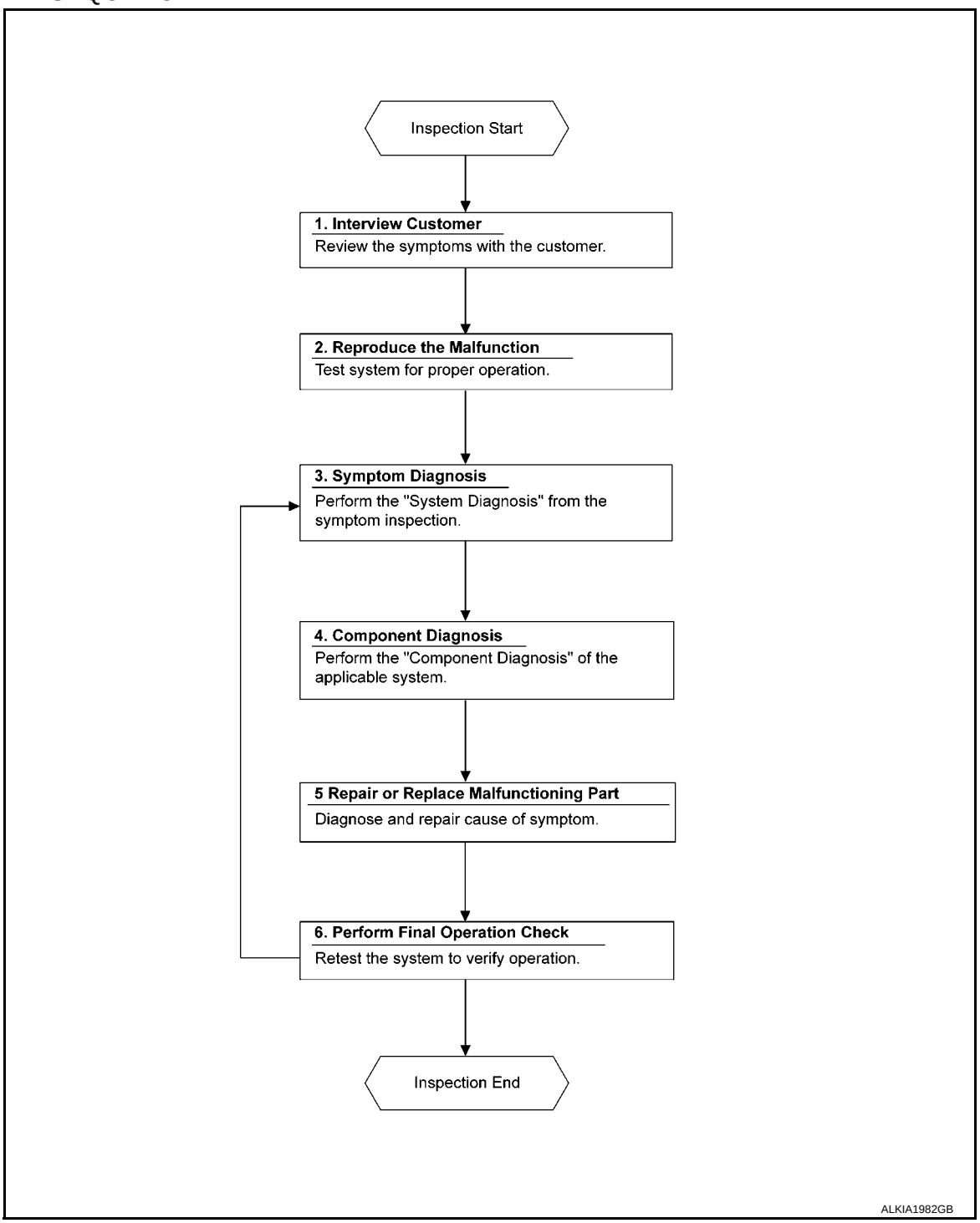
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000014625590

OVERALL SEQUENCE



DETAILED FLOW

1. OBTAIN INFORMATION ABOUT SYMPTOM

Interview the customer to obtain as much information as possible about the conditions and environment under which the malfunction occurred.

>> GO TO 2.

2. CONFIRM CONCERN

Check the malfunction on the vehicle that the customer describes.
Inspect the relation of the symptoms and the condition when the symptoms occur.

>> GO TO 3.

3. IDENTIFY THE MALFUNCTIONING SYSTEM WITH SYMPTOM DIAGNOSIS

Use Symptom diagnosis from the symptom inspection result in step 2 and then identify where to start performing the diagnosis based on possible causes and symptoms.

>> GO TO 4.

4. PERFORM THE COMPONENT DIAGNOSIS OF THE APPLICABLE SYSTEM

Perform the diagnosis with Component diagnosis of the applicable system.

>> GO TO 5.

5. REPAIR OR REPLACE THE MALFUNCTIONING PARTS

Repair or replace the specified malfunctioning parts.

>> GO TO 6.

6. FINAL CHECK

Check that malfunctions are not reproduced when obtaining the malfunction information from the customer, referring to the symptom inspection result in step 2.

Are the malfunctions corrected?

YES >> Inspection End.
NO >> GO TO 3.

INSPECTION AND ADJUSTMENT
ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT
ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement

INFOID:0000000015246288

INITIALIZATION PROCEDURE

Moonroof

If the moonroof does not open or close automatically, use the following procedure to return moonroof operation to normal.

1. Place the ignition switch in the ON position.
   NOTE:
   It is best if engine is running during initialization.
2. Fully close the moonroof glass and sunshade by pressing the moonroof switch in the close position.
   NOTE:
   If required, bump the moonroof switch repeatedly until the moonroof glass and sunshade are completely closed (not in tilt-up position).
3. Press and hold the close switch until the moonroof glass and sunshade operate through several small movements (10 - 20 seconds).
4. Once the moonroof has been motionless for 5 seconds, release the close switch and quickly (within less than a second) press and hold the close switch again. The moonroof glass will cycle to full open and back to close. Hold the close switch until both the moonroof glass and sunshade have completed their movement, then release the close switch.
5. Verify moonroof and sunshade operation by tilting the moonroof glass to vent, opening and closing the moonroof and sunshade.
   NOTE:
   Repeat this procedure if the moonroof and/or sunshade still do not operate normally. It may be necessary to repeat the procedure up to 5 times. After 5 tries, if the moonroof and/or sunshade still do not operate normally, clear the memory by holding the moonroof switch in the open position for 15 seconds. Then, close the moonroof and sunshade and repeat the initialization procedure.

ANTI-PINCH FUNCTION

Moonroof/Sunshade

1. Fully open the moonroof to the full open position.
2. Place a piece of wood at the fully closed position.
3. Close the moonroof completely with auto-slide close function.
4. Moonroof should make contact and then tilt up or travel in reverse.

CAUTION:

- **Do not test the anti-pinch function with your hands or other body parts because they may be pinched.**
- **Depending on the environment and driving conditions, if a similar impact or load is applied to the moonroof it may lower.**
- **Test the auto-slide operation before inspection when the initialization procedure is performed.**
- **Perform the initialization procedure when the auto-slide operation or anti-pinch function does not operate normally.**

DTC/CIRCUIT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT

BCM

BCM : Diagnosis Procedure

INFOID:0000000015221575

Regarding Wiring Diagram information, refer to BCS-51, "Wiring Diagram".

1. CHECK FUSE

Check that the following fuses are not blown.

Terminal No.	Signal name	Fuse No.
161	BCM power supply	7 (10A)
167	Power door lock battery power supply	5 (20A)
168	Turn signal/hazard battery power supply	1 (15A)
169	Stop lamp battery power supply	10 (10A)
175	Power door lock2 battery power supply	3 (20A)
176	Rear wiper battery power supply	4 (15A)

Is the fuse blown?

YES >> Replace the blown fuse after repairing the affected circuit.
NO >> GO TO 2.

2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect BCM connector M20.
2. Check voltage between BCM connector M20 and ground.

BCM		Ground	Voltage (Approx.)
Connector	Terminal		
M20	161	—	Battery voltage
	167		
	168		
	169		
	175		
	176		

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness or connectors.

3. CHECK GROUND CIRCUIT

Check continuity between BCM connector M20 and ground.

BCM		Ground	Continuity
Connector	Terminal		
M20	170	—	Yes
	171		

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair or replace harness or connectors.

MOONROOF MOTOR ASSEMBLY

MOONROOF MOTOR ASSEMBLY : Description

INFOID:0000000014625594

- BCM supplies the moonroof motor assembly with power.
- CPU is integrated in moonroof motor assembly.
- Tilts up/down & slides open/close by moonroof switch operation.
- In order to close the moonroof during high speed driving, the Combination meter will send a speed signal to the moonroof CPU to adjust the torque of the motor during the tilt-down operation.

MOONROOF MOTOR ASSEMBLY : Component Function Check

INFOID:0000000014625595

1. CHECK MOONROOF MOTOR FUNCTION

Does the tilt up/down & slide open/close functions operate normally with moonroof switch?

Is the inspection result normal?

YES >> Moonroof motor assembly is OK.
NO >> Refer to RF-24, "MOONROOF MOTOR ASSEMBLY : Diagnosis Procedure".

MOONROOF MOTOR ASSEMBLY : Diagnosis Procedure

INFOID:0000000014625596

Regarding Wiring Diagram information, refer to RF-15, "Wiring Diagram".

MOONROOF MOTOR ASSEMBLY

1. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect the moonroof motor assembly connector.
3. Turn ignition switch ON.
4. Check voltage between moonroof motor assembly connector and ground.

(+)		(–)	Voltage (Approx.)
Moonroof motor assembly connector	Terminal		
R4	3	Ground	Battery voltage
	6		

Is the inspection result normal?

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

2. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between moonroof motor assembly connector and ground.

Moonroof motor assembly connector	Terminal	Ground	Continuity
R4	1		Yes

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace harness.

3. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect power window relay connector.

3. Check continuity between power window relay harness connector and moonroof motor assembly harness connector.

Power window relay		Moonroof motor assembly		Continuity
Connector	Terminal	Connector	Terminal	
M58	3	R4	3	Yes

4. Check continuity between power window relay harness connector and ground.

Power window relay		Ground	Continuity
Connector	Terminal		
M58	3		No

Is the inspection result normal?

YES >> Refer to PWC-46, "Diagnosis Procedure".
NO >> Repair or replace harness.

4. CHECK MOONROOF SWITCH INPUT SIGNAL

1. Connect moonroof motor assembly.
2. Turn ignition switch ON.
3. Check voltage between the moonroof motor assembly connector and ground.

Moonroof motor assembly connector	Terminals		Condition	Voltage (Approx.)
	(+)	(–)		
R4	5	Ground	Moonroof switch is operated TILT DOWN or SLIDE OPEN	0
			Other than above	Battery voltage
	10		Moonroof switch is operated TILT UP or SLIDE CLOSE	0
			Other than above	Battery voltage

Is the inspection result normal?

YES >> GO TO 8.
NO >> GO TO 6.

5. CHECK MOONROOF SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect the moonroof motor assembly and moonroof switch.
3. Check continuity between the moonroof motor assembly connector and moonroof switch connector.

Moonroof motor assembly connector	Terminal	Moonroof switch connector	Terminal	Continuity
R4	5	R3	4	Yes
	10		9	

4. Check continuity between the moonroof motor assembly connector and ground.

Moonroof motor assembly connector	Terminal	Ground	Continuity
R4	5		No
	10		

Is the inspection result normal?

YES >> GO TO 7.
NO >> Repair or replace harness.

6. CHECK MOONROOF SWITCH GROUND CIRCUIT

1. Connect moonroof motor assembly.
2. Check continuity between the moonroof switch connector and ground.

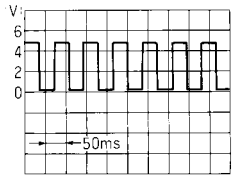
Moonroof switch connector	Terminal	Ground	Continuity
R3	1		Yes

Is the inspection result normal?

YES >> Refer to RF-30, "Component Inspection".
NO >> Repair or replace harness.

7. CHECK COMBINATION METER SIGNAL

1. Connect the moonroof motor assembly connector.
2. Turn ignition switch ON.
3. Check the signal between the moonroof motor assembly connector and ground with oscilloscope.

(+)		(-)	Condition	Signal (Reference value)
Moonroof motor assembly connector	Terminal			
R4	8	Ground	Speedometer operated [When vehicle speed is approx.40km/h (25MPH)]	

ELF1080D

Is the inspection result normal?

YES >> Replace moonroof motor assembly. Refer to RF-47, "Removal and Installation". After that, refer to RF-22, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".
NO >> GO TO 9.

8. CHECK COMBINATION METER CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter.
3. Check continuity between the combination meter connector and the moonroof motor assembly connector.

Combination meter connector	Terminal	Moonroof motor assembly connector	Terminal	Continuity
M76	39	R4	8	Yes

4. Check continuity between the combination meter connector and ground.

Combination meter connector	Terminal	Ground	Continuity
M76	39		No

Is the inspection result normal?

YES >> Replace combination meter. Refer to BCS-74, "Removal and Installation".
NO >> Repair or replace harness.

MOONROOF MOTOR ASSEMBLY : Special Repair Requirement

INFOID:0000000014625597

1. PERFORM INITIALIZATION PROCEDURE

Perform the initialization procedure.
Refer to RF-26, "MOONROOF MOTOR ASSEMBLY : Special Repair Requirement".

>> GO TO 2.

2. CHECK ANTI-PINCH OPERATION

Check the anti-pinch operation.
Refer to RF-26, "MOONROOF MOTOR ASSEMBLY : Special Repair Requirement".

Is the inspection result normal?

YES >> Inspection End.
NO >> Check fitting adjustment.

SUNSHADE MOTOR ASSEMBLY

SUNSHADE MOTOR ASSEMBLY : Description

INFOID:0000000014625598

- BCM supplies the sunshade motor assembly with power.
- CPU is integrated in sunshade motor assembly.
- Slide open/close controlled by the moonroof switch operation.

SUNSHADE MOTOR ASSEMBLY : Component Function Check

INFOID:0000000014625599

1. CHECK SUNSHADE MOTOR FUNCTION

Does the slide open and close functions operate normally with the moonroof switch?

Is the inspection result normal?

YES >> Sunshade motor assembly is OK.
NO >> Refer to RF-27, "SUNSHADE MOTOR ASSEMBLY : Diagnosis Procedure".

SUNSHADE MOTOR ASSEMBLY : Diagnosis Procedure

INFOID:0000000014625600

Regarding Wiring Diagram information, refer to RF-15, "Wiring Diagram".

1. CHECK POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect sunshade motor assembly connector.
3. Turn ignition switch ON.
4. Check voltage between sunshade motor assembly harness connector and ground.

(+)		(–)	Voltage (Approx.)
Sunshade motor assembly			
Connector	Terminal		
R5	3	Ground	Battery voltage

Is the inspection result normal?

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

2. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between sunshade motor assembly harness connector and ground.

Sunshade motor assembly		Ground	Continuity
Connector	Terminal		
R5	1		Yes

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace the harness.

3. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect power window relay connector.
3. Check continuity between power window relay harness connector and moonroof motor assembly harness connector.

Power window relay		Moonroof motor assembly		Continuity
Connector	Terminal	Connector	Terminal	
M58	3	R4	3	Yes

4. Check continuity between power window relay harness connector and ground.

Power window relay		Ground	Continuity
Connector	Terminal		
M58	3		No

Is the inspection result normal?

YES >> Refer to PWC-46, "Diagnosis Procedure".
NO >> Repair or replace harness.

MOONROOF SWITCH

Description

INFOID:0000000014625601

Transmits switch operation signal to moonroof motor and sunshade motor assembly.

Diagnosis Procedure

INFOID:0000000014625602

Regarding Wiring Diagram information, refer to RF-15, "Wiring Diagram".

1.CHECK MOONROOF SWITCH INPUT SIGNAL

1. Turn ignition switch ON.
2. Check voltage between moonroof motor assembly harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
Moonroof motor assembly				
Connector	Terminals			
R4	5	Ground	Moonroof switch is operated OPEN (1st)	0
			Other than above	Battery voltage
	10		Moonroof switch is operated CLOSE (2nd)	0
			Other than above	Battery voltage
	2		Moonroof switch is operated OPEN (2nd click to open sunshade)	0
			Other than above	Battery voltage
	4		Moonroof switch is operated CLOSE (2nd click to close sunshade)	0
			Other than above	Battery voltage

Is the inspection result normal?

YES >> Inspection End.
NO >> GO TO 2.

2.CHECK MOONROOF SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect moonroof motor assembly connector and moonroof switch connector.
3. Check continuity between moonroof motor assembly harness connector and moonroof switch harness connector.

Moonroof motor assembly		Moonroof switch		Continuity
Connector	Terminal	Connector	Terminal	
R4	2	R3	6	Yes
	4		11	
	5		4	
	10		9	

4. Check continuity between moonroof motor assembly harness connector and ground.

Moonroof motor assembly			Continuity
Connector	Terminal		
R4	2	Ground	No
	4		
	5		
	10		

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace the harness.

3. CHECK MOONROOF SWITCH GROUND CIRCUIT

Check continuity between moonroof switch harness connector and ground.

Moonroof switch			Continuity
Connector	Terminal		
R3	1	Ground	Yes

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace the harness.

4. CHECK MOONROOF SWITCH

Check moonroof switch.
Refer to RF-30, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace moonroof switch. Refer to RF-57, "Removal and Installation".

5. CHECK INTERMITTENT INCIDENT

Refer to GI-54, "Intermittent Incident".

>> Inspection End.

Component Inspection

INFOID:0000000014625603

MOONROOF SWITCH

1. CHECK MOONROOF SWITCH

1. Turn ignition switch OFF.
2. Disconnect moonroof switch.
3. Check continuity between moonroof switch terminals.

Terminals		Condition	Continuity
4	1	Moonroof switch is operated - OPEN	Yes
		Other than above	No
9		Moonroof switch is operated - CLOSE	Yes
		Other than above	No
6		Moonroof switch is operated - HOLD OPEN or HOLD CLOSE	Yes
		Other than above	No
11		Moonroof switch is operated - HOLD OPEN or HOLD CLOSE	Yes
		Other than above	No

Is the inspection result normal?

YES >> Moonroof switch is OK.

NO >> Replace moonroof switch. Refer to RF-57, "Removal and Installation".

DOOR SWITCH

Component Function Check

INFOID:0000000014923215

1.CHECK FUNCTION

CONSULT
1. Select “DOOR LOCK” of “BCM”.
2. Select “DOOR SW-DR”, “DOOR SW-AS”, “DOOR SW-RL”, “DOOR SW-RR”, in “Data Monitor” mode.
3. Check that the function operates normally according to the following conditions:

Monitor item	Condition		Status
DOOR SW-DR	Front door LH	Open	On
		Closed	Off
DOOR SW-AS	Front door RH	Open	On
		Closed	Off
DOOR SW-RL	Rear door LH	Open	On
		Closed	Off
DOOR SW-RR	Rear door RH	Open	On
		Closed	Off

Is the inspection result normal?

YES >> Door switch is OK.
NO >> Refer to RF-32, "Diagnosis Procedure".

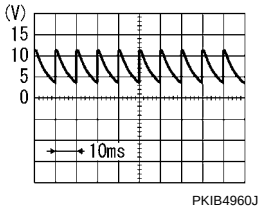
Diagnosis Procedure

INFOID:0000000014923216

Regarding Wiring Diagram information, refer to DLK-82, "Wiring Diagram".

1.CHECK DOOR SWITCH INPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect malfunctioning door switch connector.
3. Check signal between malfunctioning door switch harness connector and ground using oscilloscope.

(+)			(–)	Signal (Reference value)
Door switch				
Connector		Terminal		
Front LH	B71	3	Ground	 PKIB4960J 7.0 - 8.0 V
Front RH	B141			
Rear LH	B70			
Rear RH	B142			

Is the inspection result normal?

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

2.CHECK DOOR SWITCH CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between door switch harness connector and BCM harness connector.

Door switch			BCM		Continuity
Connector		Terminal	Connector	Terminal	
Front LH	B71	3	B16	57	Yes
Front RH	B141			53	
Rear LH	B70			52	
Rear RH	B142			50	

3. Check continuity between door switch harness connector and ground.

Door switch			Ground	Continuity
Connector		Terminal		
Front LH	B71	3		No
Front RH	B141			
Rear LH	B70			
Rear RH	B142			

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-73, "Removal and Installation".
NO >> Repair or replace harness.

3.CHECK DOOR SWITCH

Refer to RF-33, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace malfunctioning door switch. Refer to DLK-332, "Removal and Installation".

4.CHECK INTERMITTENT INCIDENT

Refer to GI-54, "Intermittent Incident".

>> Inspection End.

Component Inspection

INFOID:0000000014923217

1.CHECK DOOR SWITCH

1. Turn ignition switch OFF.
2. Disconnect malfunctioning door switch connector.
3. Check continuity between door switch terminals.

Door switch		Condition		Continuity
Terminal				
3	Ground contact is part of the switch.	Door switch	Pressed	No
			Released	Yes

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace malfunctioning door switch. Refer to DLK-332, "Removal and Installation".

SYMPTOM DIAGNOSIS

MOONROOF DOES NOT OPERATE PROPERLY

Diagnosis Procedure

INFOID:0000000014625611

1. CHECK BCM POWER SUPPLY AND GROUND CIRCUIT

Check BCM power supply and ground circuit.
Refer to BCS-66, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2. CHECK MOONROOF MOTOR ASSEMBLY POWER SUPPLY AND GROUND CIRCUIT

Check moonroof motor assembly power supply and ground circuit.
Refer to RF-34, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-54, "Intermittent Incident".
NO >> Repair or replace malfunctioning parts.

SUNSHADE SYSTEM DOES NOT OPERATE PROPERLY

Diagnosis Procedure

INFOID:0000000014625612

1.CHECK BCM POWER SUPPLY AND GROUND CIRCUIT

Check BCM power supply and ground circuit.
Refer to BCS-66, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning parts.

2.CHECK SUNSHADE MOTOR ASSEMBLY POWER SUPPLY AND GROUND CIRCUIT

Check sunshade motor assembly power supply and ground circuit.
Refer to RF-27, "SUNSHADE MOTOR ASSEMBLY : Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunctioning parts.

3.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-54, "Intermittent Incident".
NO >> GO TO 1.

AUTO OPERATION DOES NOT OPERATE

MOONROOF

MOONROOF : Diagnosis Procedure

INFOID:0000000014625613

1. PERFORM INITIALIZATION PROCEDURE

Perform initialization procedure.
Refer to RF-22, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".

Is the inspection result normal?

YES >> Moonroof system is normal.
NO >> GO TO 2.

2. CHECK MOONROOF SWITCH

Check moonroof switch.
Refer to RF-29, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunctioning parts.

3. CONFIRM THE OPERATION

Confirm the operation again.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-54, "Intermittent Incident".
NO >> GO TO 1.

SUNSHADE

SUNSHADE : Diagnosis Procedure

INFOID:0000000014625614

1. PERFORM INITILAZATION PROCEDURE

Refer to RF-22, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".

Is the inspection result normal?

YES >> Sunshade system is normal.
NO >> GO TO 2.

2. CHECK MOONROOF SWITCH

Check moonroof switch.
Refer to RF-29, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunctioning parts.

3. CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-54, "Intermittent Incident".
NO >> GO TO 1.

ANTI-PINCH FUNCTION DOES NOT OPERATE

MOONROOF

MOONROOF : Diagnosis Procedure

INFOID:0000000014625615

1. PERFORM INITIALIZATION PROCEDURE

Perform initialization procedure.
Refer to RF-22, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Perform basic inspection. Refer to RF-20, "Work Flow".

2. RETEST THE ANTI-PINCH FUNCTION

Check anti-pinch operation. Refer to RF-22, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace the moonroof motor assembly. Refer to RF-47, "Removal and Installation".

SUNSHADE

SUNSHADE : Diagnosis Procedure

INFOID:0000000014625616

1. CHECK SUNSHADE MECHANISM

Check the following:
- Operation malfunction caused by sunshade mechanism deformation, pinched harness or other foreign materials
- Operation malfunction and interference with other parts by poor installation

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning parts.

2. PERFORM INITILAZATION PROCEDURE

Perform anti-pinch procedure.
Refer to RF-22, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 1.

3. RETEST THE ANTI-PINCH FUNCTION

Check anti-pinch operation. Refer to RF-22, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace the sunshade motor assembly. Refer to RF-55, "Removal and Installation".

RETAINED POWER OPERATION DOES NOT OPERATE PROPERLY

Diagnosis Procedure

INFOID:0000000014625617

1.CHECK FRONT DOOR SWITCH

Check (LH and RH) front door switches.
Refer to DLK-206, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace the malfunctioning parts.

2.CONFIRM THE OPERATION

Confirm the operation again.

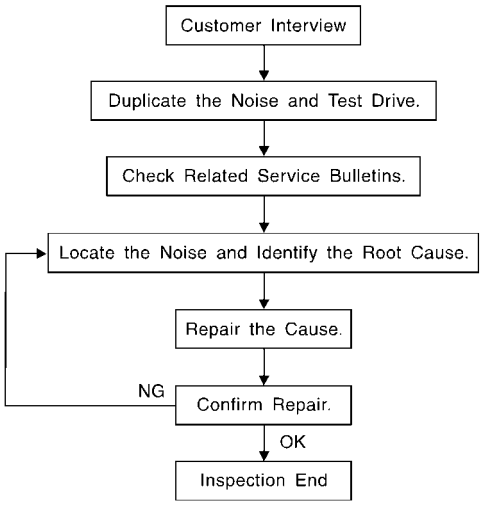
Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-54, "Intermittent Incident".
NO >> GO TO 1.

SQUEAK AND RATTLE TROUBLE DIAGNOSES

Work Flow

INFOID:0000000014625618



SBT842

CUSTOMER INTERVIEW

Interview the customer if possible, to determine the conditions that exist when the noise occurs. Use the Diagnostic Worksheet during the interview to document the facts and conditions when the noise occurs and any customer's comments; refer to RF-43, "Diagnostic Worksheet". This information is necessary to duplicate the conditions that exist when the noise occurs.

- The customer may not be able to provide a detailed description or the location of the noise. Attempt to obtain all the facts and conditions that exist when the noise occurs (or does not occur).
- If there is more than one noise in the vehicle, be sure to diagnose and repair the noise that the customer is concerned about. This can be accomplished by test driving the vehicle with the customer.
- After identifying the type of noise, isolate the noise in terms of its characteristics. The noise characteristics are provided so the customer, service adviser and technician are all speaking the same language when defining the noise.
- Squeak —(Like tennis shoes on a clean floor)
  Squeak characteristics include the light contact/fast movement/brought on by road conditions/hard surfaces = higher pitch noise/softer surfaces = lower pitch noises/edge to surface = chirping.
- Creak—(Like walking on an old wooden floor)
  Creak characteristics include firm contact/slow movement/twisting with a rotational movement/pitch dependent on materials/often brought on by activity.
- Rattle—(Like shaking a baby rattle)
  Rattle characteristics include the fast repeated contact/vibration or similar movement/loose parts/missing clip or fastener/incorrect clearance.
- Knock —(Like a knock on a door)
  Knock characteristics include hollow sounding/sometimes repeating/often brought on by driver action.
- Tick—(Like a clock second hand)
  Tick characteristics include gentle contacting of light materials/loose components/can be caused by driver action or road conditions.
- Thump—(Heavy, muffled knock noise)
  Thump characteristics include softer knock/dead sound often brought on by activity.
- Buzz—(Like a bumble bee)
  Buzz characteristics include high frequency rattle/firm contact.
- Often the degree of acceptable noise level will vary depending upon the person. A noise that you may judge as acceptable may be very irritating to the customer.
- Weather conditions, especially humidity and temperature, may have a great effect on noise level.

DUPLICATE THE NOISE AND TEST DRIVE

If possible, drive the vehicle with the customer until the noise is duplicated. Note any additional information on the Diagnostic Worksheet regarding the conditions or location of the noise. This information can be used to duplicate the same conditions when you confirm the repair.

If the noise can be duplicated easily during the test drive, to help identify the source of the noise, try to duplicate the noise with the vehicle stopped by doing one or all of the following:

1) Close a door.
2) Tap or push/pull around the area where the noise appears to be coming from.
3) Rev the engine.
4) Use a floor jack to recreate vehicle “twist”.
5) At idle, apply engine load (electrical load, half-clutch on M/T model, drive position on CVT and A/T models).
6) Raise the vehicle on a hoist and hit a tire with a rubber hammer.

- Drive the vehicle and attempt to duplicate the conditions the customer states exist when the noise occurs.
- If it is difficult to duplicate the noise, drive the vehicle slowly on an undulating or rough road to stress the vehicle body.

CHECK RELATED SERVICE BULLETINS

After verifying the customer concern or symptom, check ASIST for Technical Service Bulletins (TSBs) related to that concern or symptom.
If a TSB relates to the symptom, follow the procedure to repair the noise.

LOCATE THE NOISE AND IDENTIFY THE ROOT CAUSE

1. Narrow down the noise to a general area. To help pinpoint the source of the noise, use a listening tool (Chassis Ear: J-39570, Engine Ear: J-39565 and mechanic's stethoscope).
2. Narrow down the noise to a more specific area and identify the cause of the noise by:
   - removing the components in the area that you suspect the noise is coming from.
     Do not use too much force when removing clips and fasteners, otherwise clips and fasteners can be broken or lost during the repair, resulting in the creation of new noise.
   - tapping or pushing/pulling the component that you suspect is causing the noise.
     Do not tap or push/pull the component with excessive force, otherwise the noise will be eliminated only temporarily.
   - feeling for a vibration with your hand by touching the component(s) that you suspect is (are) causing the noise.
   - placing a piece of paper between components that you suspect are causing the noise.
   - looking for loose components and contact marks.
     Refer to RF-40, "Generic Squeak and Rattle Troubleshooting".

REPAIR THE CAUSE

- If the cause is a loose component, tighten the component securely.
- If the cause is insufficient clearance between components:

- separate components by repositioning or loosening and retightening the component, if possible.
- insulate components with a suitable insulator such as urethane pads, foam blocks, felt cloth tape or urethane tape. A NISSAN Squeak and Rattle Kit (J-50397) is available through your authorized NISSAN Parts Department.

CAUTION:
Do not use excessive force as many components are constructed of plastic and may be damaged.
NOTE:

- Always check with the Parts Department for the latest parts information.
- The materials contained in the NISSAN Squeak and Rattle Kit (J-50397) are listed on the inside cover of the kit; and can each be ordered separately as needed.
- The following materials not found in the kit can also be used to repair squeaks and rattles.

- SILICONE GREASE: Use instead of UHMW tape that will be visible or does not fit. The silicone grease will only last a few months.
- SILICONE SPRAY: Use when grease cannot be applied.
- DUCT TAPE: Use to eliminate movement.

CONFIRM THE REPAIR

Confirm that the cause of a noise is repaired by test driving the vehicle. Operate the vehicle under the same conditions as when the noise originally occurred. Refer to the notes on the Diagnostic Worksheet.

Generic Squeak and Rattle Troubleshooting

INFOID:0000000014625619

Refer to Table of Contents for specific component removal and installation information.

INSTRUMENT PANEL

Most incidents are caused by contact and movement between:

1. Cluster lid A and the instrument panel
2. Acrylic lens and combination meter housing
3. Instrument panel to front pillar finisher
4. Instrument panel to windshield
5. Instrument panel pins
6. Wiring harnesses behind the combination meter
7. A/C defroster duct and duct joint

These incidents can usually be located by tapping or moving the components to duplicate the noise or by pressing on the components while driving to stop the noise. Most of these incidents can be repaired by applying felt cloth tape or silicone spray (in hard to reach areas). Urethane pads can be used to insulate wiring harness.

CAUTION:

Do not use silicone spray to isolate a squeak or rattle. If you saturate the area with silicone, you will not be able to recheck the repair.

CENTER CONSOLE

Components to pay attention to include:

1. Shift selector assembly cover to finisher
2. A/C control unit and cluster lid C
3. Wiring harnesses behind audio and A/C control unit

The instrument panel repair and isolation procedures also apply to the center console.

DOORS

Pay attention to the:

1. Finisher and inner panel making a slapping noise
2. Inside handle escutcheon to door finisher
3. Wiring harnesses tapping
4. Door striker out of alignment causing a popping noise on starts and stops

Tapping or moving the components or pressing on them while driving to duplicate the conditions can isolate many of these incidents. You can usually insulate the areas with felt cloth tape or insulator foam blocks from the NISSAN Squeak and Rattle Kit (J-50397) to repair the noise.

TRUNK

Trunk noises are often caused by a loose jack or loose items put into the trunk by the owner.
In addition look for:

1. Trunk lid bumpers out of adjustment
2. Trunk lid striker out of adjustment
3. The trunk lid torsion bars knocking together
4. A loose license plate or bracket

Most of these incidents can be repaired by adjusting, securing or insulating the item(s) or component(s) causing the noise.

SUNROOF/HEADLINING

Noises in the sunroof/headlining area can often be traced to one of the following:

1. Sunroof lid, rail, linkage or seals making a rattle or light knocking noise
2. Sun visor shaft shaking in the holder
3. Front or rear windshield touching headlining and squeaking

Again, pressing on the components to stop the noise while duplicating the conditions can isolate most of these incidents. Repairs usually consist of insulating with felt cloth tape.

OVERHEAD CONSOLE (FRONT AND REAR)

Overhead console noises are often caused by the console panel clips not being engaged correctly. Most of these incidents are repaired by pushing up on the console at the clip locations until the clips engage.
In addition look for:

1. Loose harness or harness connectors.
2. Front console map/reading lamp lens loose.

3. Loose screws at console attachment points.

SEATS

When isolating seat noise it's important to note the position the seat is in and the load placed on the seat when the noise is present. These conditions should be duplicated when verifying and isolating the cause of the noise.
Cause of seat noise include:

1. Headrest rods and holder
2. A squeak between the seat pad cushion and frame
3. The rear seatback lock and bracket

These noises can be isolated by moving or pressing on the suspected components while duplicating the conditions under which the noise occurs. Most of these incidents can be repaired by repositioning the component or applying urethane tape to the contact area.

UNDERHOOD

Some interior noise may be caused by components under the hood or on the engine wall. The noise is then transmitted into the passenger compartment.
Causes of transmitted underhood noise include:

1. Any component installed to the engine wall
2. Components that pass through the engine wall
3. Engine wall mounts and connectors
4. Loose radiator installation pins
5. Hood bumpers out of adjustment
6. Hood striker out of adjustment

These noises can be difficult to isolate since they cannot be reached from the interior of the vehicle. The best method is to secure, move or insulate one component at a time and test drive the vehicle. Also, engine rpm or load can be changed to isolate the noise. Repairs can usually be made by moving, adjusting, securing, or insulating the component causing the noise.

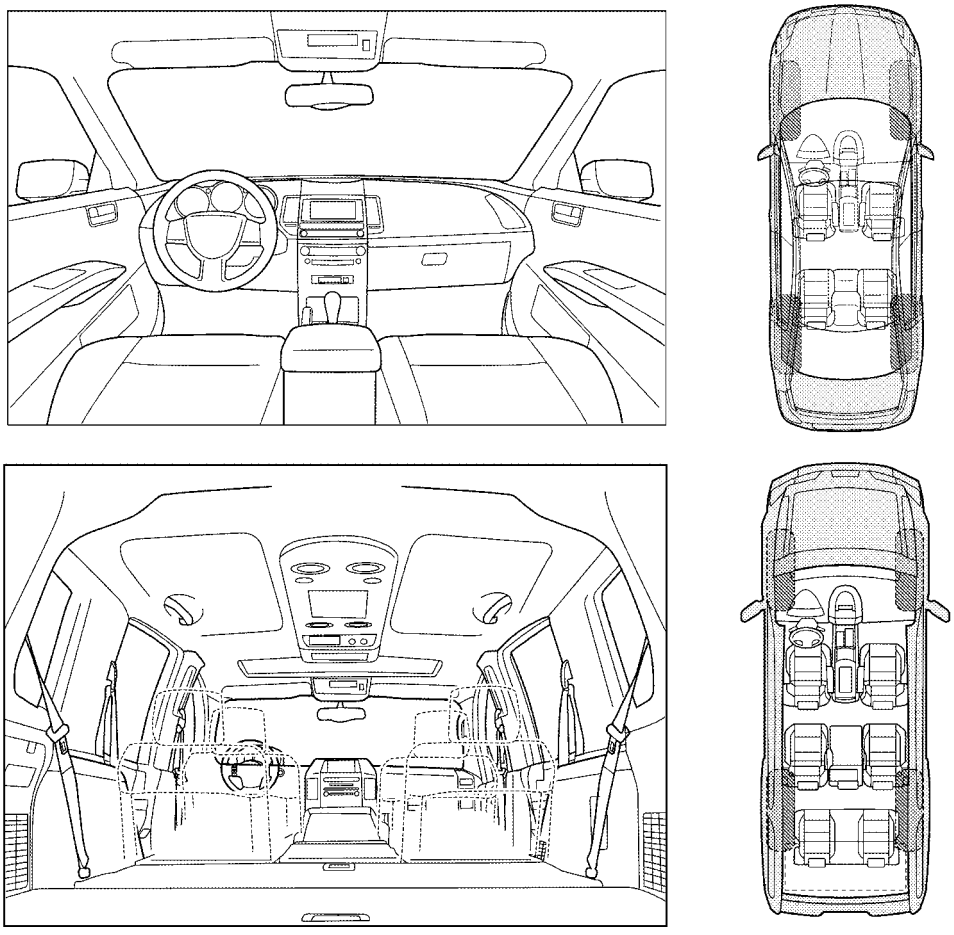
Diagnostic Worksheet

INFOID:0000000014625620

Dear Customer:
We are concerned about your satisfaction with your vehicle. Repairing a squeak or rattle sometimes can be very difficult. To help us fix your vehicle right the first time, please take a moment to note the area of the vehicle where the squeak or rattle occurs and under what conditions. You may be asked to take a test drive with a service advisor or technician to ensure we confirm the noise you are hearing.

SQUEAK & RATTLE DIAGNOSTIC WORKSHEET

I. WHERE DOES THE NOISE COME FROM? (circle the area of the vehicle)
The illustrations are for reference only, and may not reflect the actual configuration of your vehicle.



Continue to page 2 of the worksheet and briefly describe the location of the noise or rattle. In addition, please indicate the conditions which are present when the noise occurs.

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SQUEAK & RATTLE DIAGNOSTIC WORKSHEET - page 2

Briefly describe the location where the noise occurs:

_____

_____

II. WHEN DOES IT OCCUR? (please check the boxes that apply)

- ☐ Anytime
- ☐ 1st time in the morning
- ☐ Only when it is cold outside
- ☐ Only when it is hot outside
- ☐ After sitting out in the rain
- ☐ When it is raining or wet
- ☐ Dry or dusty conditions
- ☐ Other:

III. WHEN DRIVING:

- ☐ Through driveways
- ☐ Over rough roads
- ☐ Over speed bumps
- ☐ Only about ____ mph
- ☐ On acceleration
- ☐ Coming to a stop
- ☐ On turns: left, right or either (circle)
- ☐ With passengers or cargo
- ☐ Other: _____
- ☐ After driving _____ miles or _____ minutes

IV. WHAT TYPE OF NOISE

- ☐ Squeak (like tennis shoes on a clean floor)
- ☐ Creak (like walking on an old wooden floor)
- ☐ Rattle (like shaking a baby rattle)
- ☐ Knock (like a knock at the door)
- ☐ Tick (like a clock second hand)
- ☐ Thump (heavy muffled knock noise)
- ☐ Buzz (like a bumble bee)

TO BE COMPLETED BY DEALERSHIP PERSONNEL

Test Drive Notes:

_____

_____

_____

	YES	NO	Initials of person performing
Vehicle test driven with customer	☐	☐	_____
- Noise verified on test drive	☐	☐	_____
- Noise source located and repaired	☐	☐	_____
- Follow up test drive performed to confirm repair	☐	☐	_____

VIN: _____ Customer Name _____

W.O.# _____ Date: _____

This form must be attached to Work Order

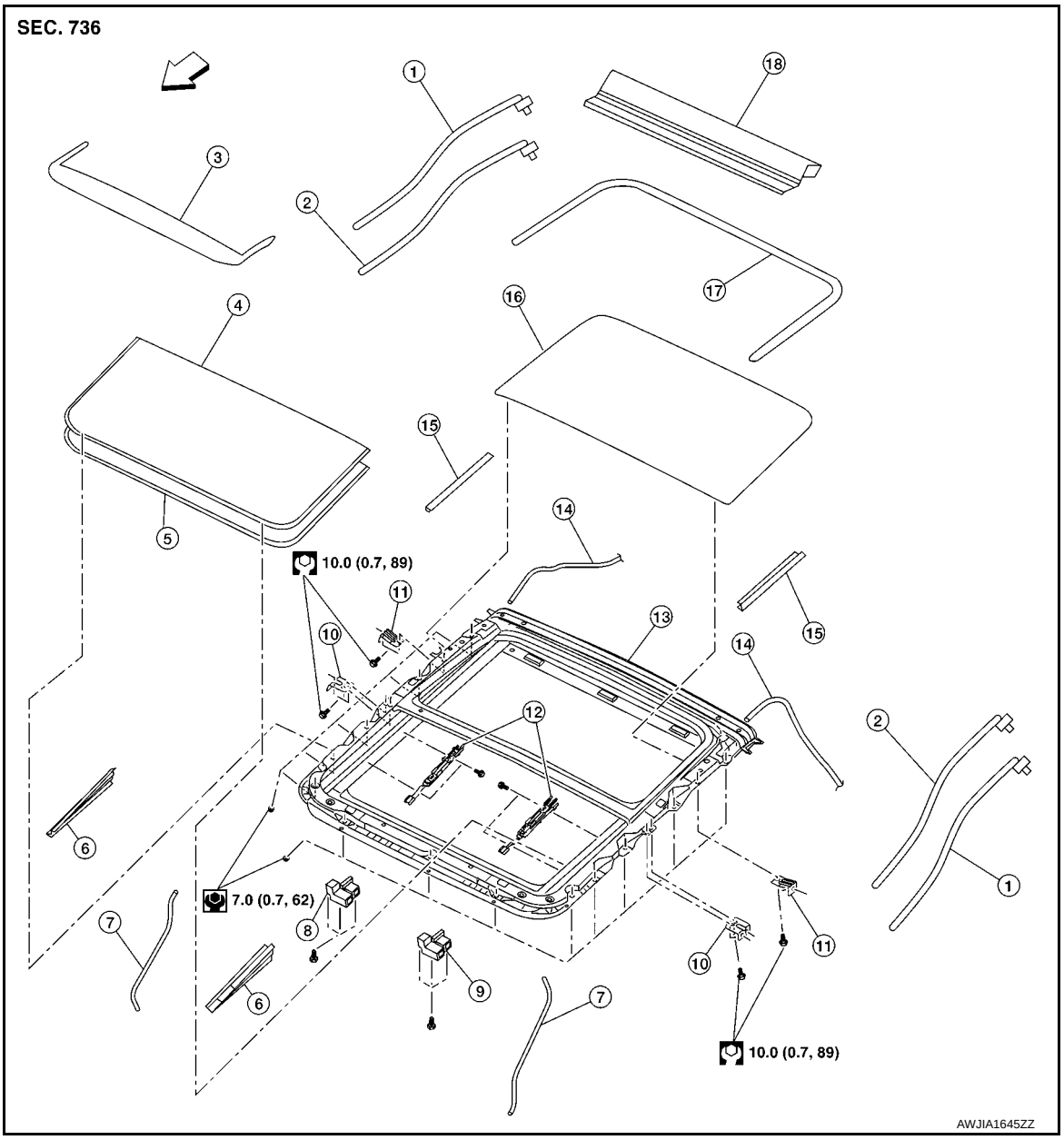
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REMOVAL AND INSTALLATION

GLASS LID

Exploded View

INFOID:0000000014625621



1. Sunshade cable (LH/RH)
2. Glass lid cable (LH/RH)
3. Wind deflector
4. Glass lid
5. Glass lid weather-strip
6. Side trim cover (LH/RH)
7. Front drain hose (LH/RH)
8. Moonroof motor assembly
9. Sunshade motor assembly
10. Moonroof front bracket (LH/RH)
11. Moonroof rear bracket (LH/RH)
12. Cable guide (LH/RH)
13. Moonroof unit assembly
14. Rear drain hose (LH/RH)
15. Rear trim covers (LH/RH)
16. Panoramic roof glass
17. Panoramic roof glass weather-strip
18. Sunshade

⇦ Front

Removal and Installation

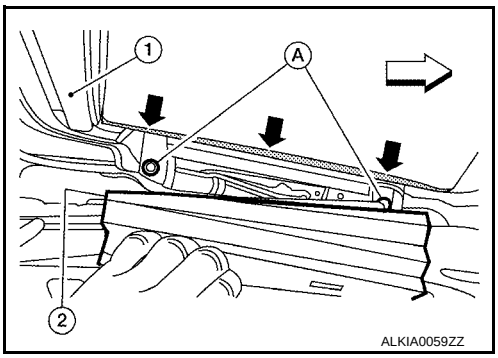
INFOID:0000000014625622

CAUTION:

Handle glass lid with care to prevent damage.

REMOVAL

1. Open sunshade (1) and close glass lid.
   ⇦ Front
2. Slide the side trim covers (2) (LH/RH) inward, then release from the glass lid inside edge and set aside.
3. Remove the glass lid bolts (A) on the (LH/RH) sides.



4. Remove glass lid from moonroof unit assembly.

INSTALLATION

Installation is in the reverse order of removal.

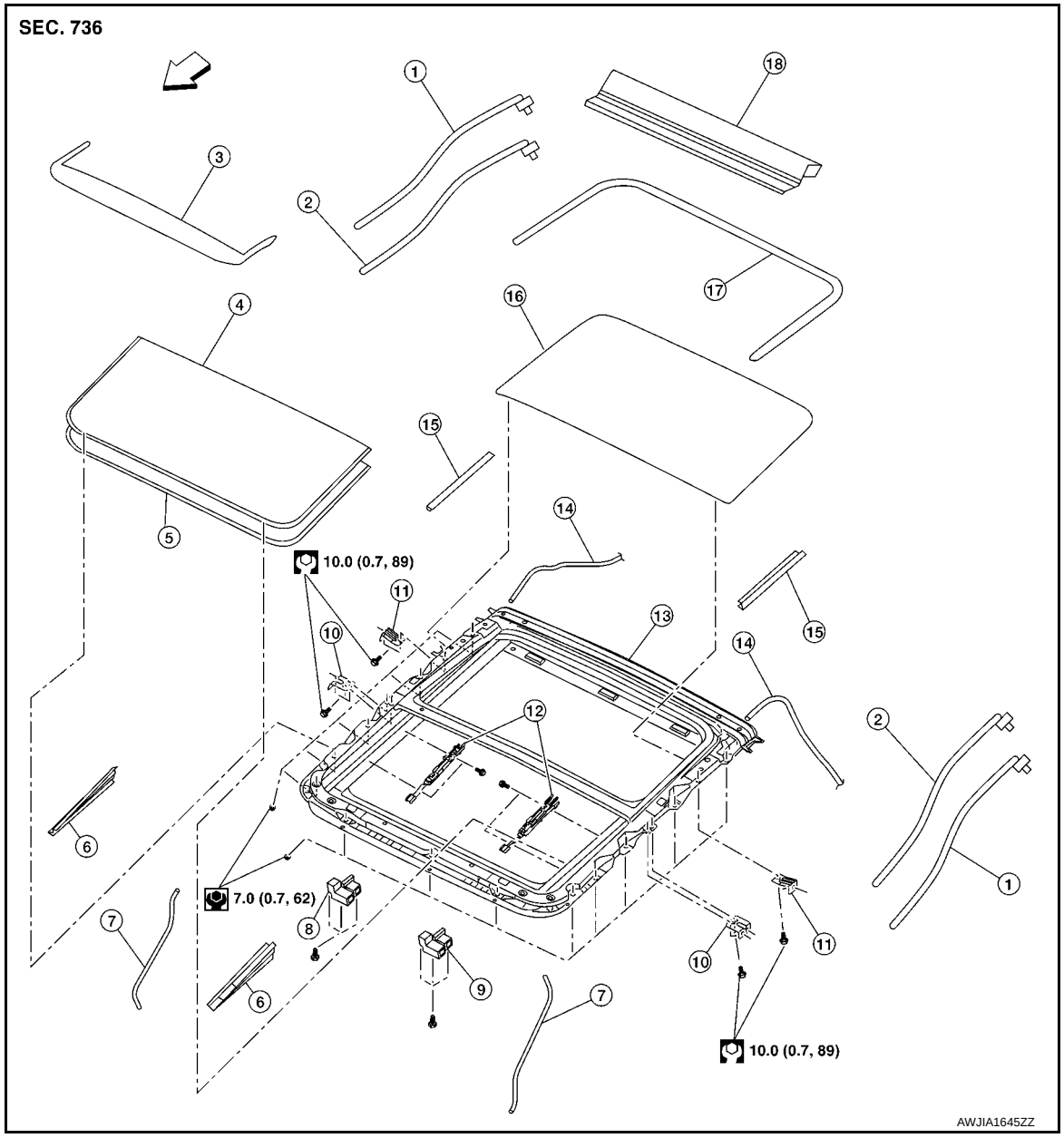
CAUTION:

- **First tighten left front bolt, then right rear bolt to prevent uneven alignment while tightening remaining bolt.**
- **After installing glass lid, check gap/height adjustments and operation. Refer to RF-49, "Inspection".**

MOONROOF MOTOR ASSEMBLY

Exploded View

INFOID:0000000014625623



1. Sunshade cable (LH/RH)
2. Glass lid cable (LH/RH)
3. Wind deflector
4. Glass lid
5. Glass lid weather-strip
6. Side trim cover (LH/RH)
7. Front drain hose (LH/RH)
8. Moonroof motor assembly
9. Sunshade motor assembly
10. Moonroof front bracket (LH/RH)
11. Moonroof rear bracket (LH/RH)
12. Cable guide (LH/RH)
13. Moonroof unit assembly
14. Rear drain hose (LH/RH)
15. Rear trim covers (LH/RH)
16. Panoramic roof glass
17. Panoramic roof glass weather-strip
18. Sunshade

⇦ Front

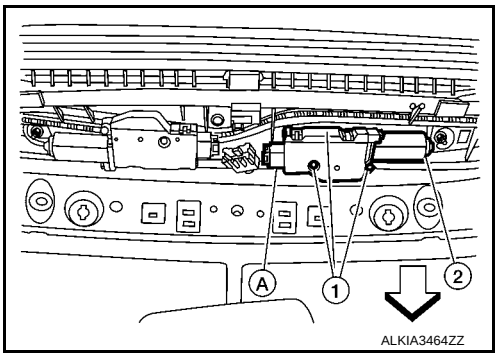
Removal and Installation

INFOID:0000000014625624

REMOVAL

1. Close glass lid.

2. Remove the headlining. Refer to INT-29, "Removal and Installation".
3. Remove moonroof motor assembly screws (1).
   ⇦ Front
4. Disconnect harness connector (A) and remove moonroof motor assembly (2) from moonroof unit assembly front end rail.
   CAUTION:
   Do not run the removed moonroof motor assembly as a single unit.



INSTALLATION

1. Move moonroof motor assembly laterally little by little so that the gear is completely engaged into the wire on the moonroof unit assembly, and the mounting surfaces become parallel. Install the moonroof motor assembly screws and tighten.
   CAUTION:
   Before installing the motor, be sure to place the link and wire assembly in the symmetrical and fully closed position.
   NOTE:
   If necessary, insert a suitable tool into the drive key and rotate right or left slightly to assist in complete moonroof motor gear alignment.
2. Remainder of installation is in the reverse order of removal.
3. Synchronize moonroof motor assembly with moonroof unit assembly. Refer to RF-22, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".

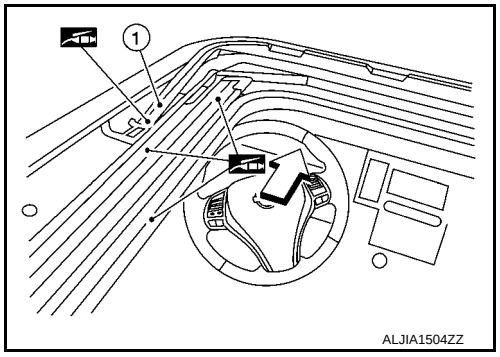
MOONROOF UNIT ASSEMBLY

Inspection

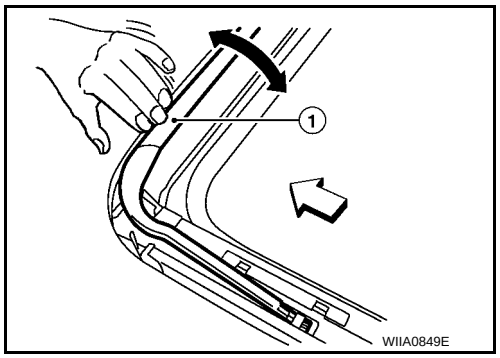
INFOID:0000000014625625

WIND DEFLECTOR

1. Open glass lid fully.
2. Visually check for proper installation, damaged/deteriorated components, or foreign objects within mechanism. Correct as required for smooth operation.
3. Check for grease at the wind deflector arm (1) and pivot areas. If necessary, apply a sufficient amount of grease for non-binding operation.
   ⇦ Front



4. Check that the wind deflector (1) moves freely within the moonroof unit assembly while manually pressing down and releasing. If a malfunction is detected, remove the moonroof unit assembly and visually inspect. If damage is found, replace either wind deflector (1) or moonroof unit assembly as required. Refer to RF-56, "Removal and Installation" (WIND DEFLECTOR) or RF-53, "Removal and Installation" (MOONROOF UNIT ASSEMBLY).
   ⇦ Front



LINK AND WIRE ASSEMBLY

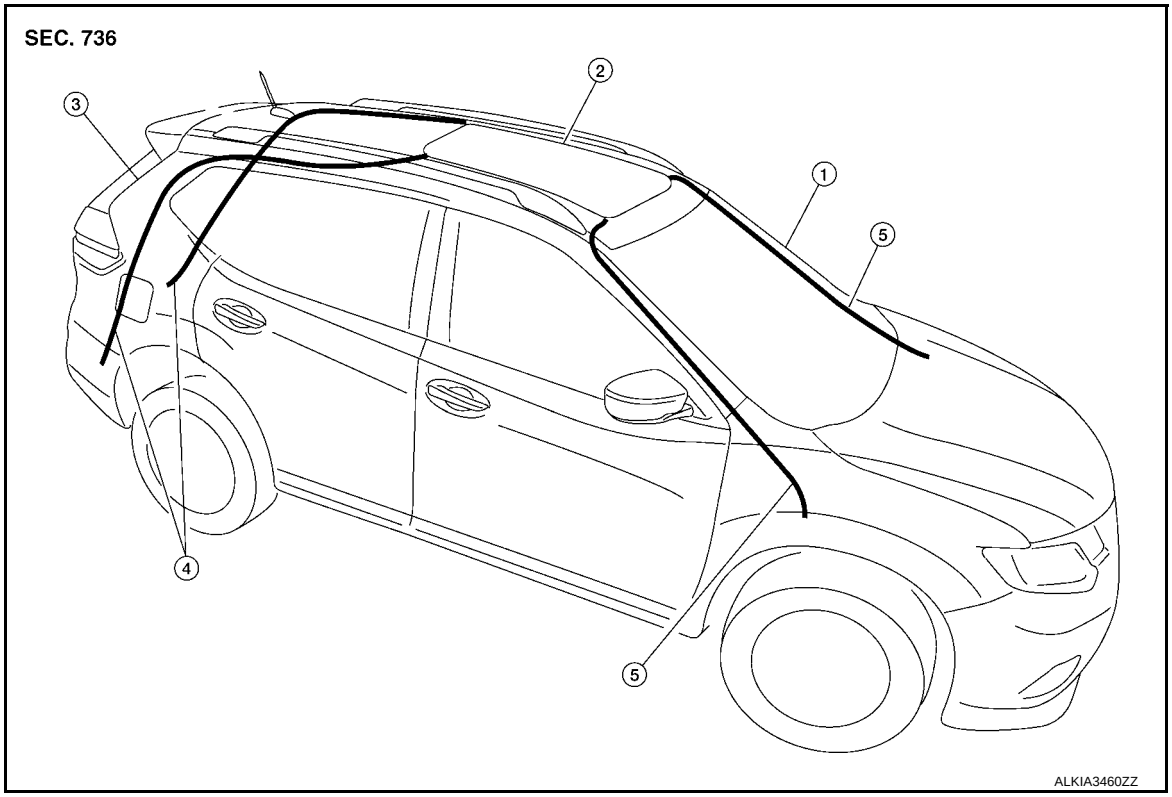
NOTE:
Before replacing a suspect part, make sure it is the source of noise being experienced.

1. Check link to determine if coating film has peeled off excessively enough that substrate is visible. Check also to determine if link is the source of noise. Replace as necessary.
2. Visually check to determine if a sufficient amount of grease has been applied to wire or rail groove. If not, add grease as required.
3. Check wire for any damage or deterioration. If any damage is found, replace moonroof unit assembly. Refer to RF-53, "Removal and Installation"

WEATHER-STRIP

1. Visually check weather-strip for damage, deterioration, or deformation.
   • Open glass lid partially to inspect front edge of weather-strip.
   • Tilt up glass lid fully to inspect sides and rear edge of weather-strip.
   If any area of the weather-strip is found to be damaged, replace the glass lid. Refer to RF-45, "Removal and Installation".
2. Check for leaks around glass lid.
   • Close glass lid.
   • Pour water around surface to determine area of concern.
   - For gaps or misalignment, adjust glass lid to specifications. Refer to ADJUSTMENT in this section.
   - For damaged sealing surfaces, either replace glass lid, refer to RF-45, "Removal and Installation" or repair the panel.

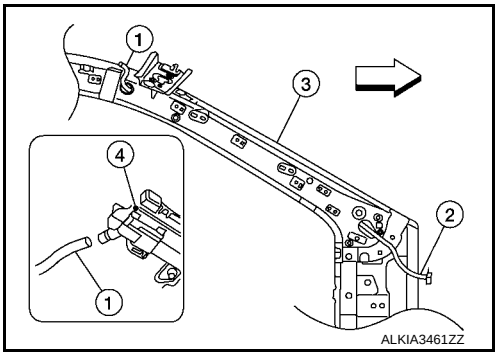
DRAIN HOSES



1. Front pillar
2. Moonroof unit assembly
3. Rear pillar
4. Rear drain hoses (LH/RH)
5. Front drain hoses (LH/RH)

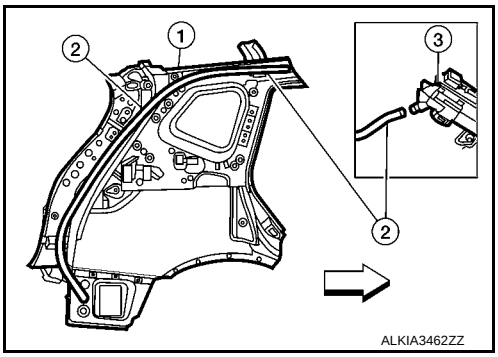
1. Remove the headlining. Refer toINT-29, "Removal and Installation".
2. From the inside front pillar (3) visually check drain hoses (1) for:
   - Proper connection at moonroof unit assembly (4) and drain hose connection at the exit base (2).
   - Damage, pinch, cracks, deterioration.

   ⇦ Front



3. Pour water through drain hoses to determine watertight performance.
   If damaged or leaking portions in any drain hose is found, replace entire drain hose as necessary.
4. From the inside of the rear quarter panel (1) visually check drain hoses (2) for damage, pinching, cracks, or deterioration.
5. Check for proper connection at moonroof unit assembly (3) and drain hose (2) and for proper routing along the rear inner quarter panel (1).

   ⇦ Front



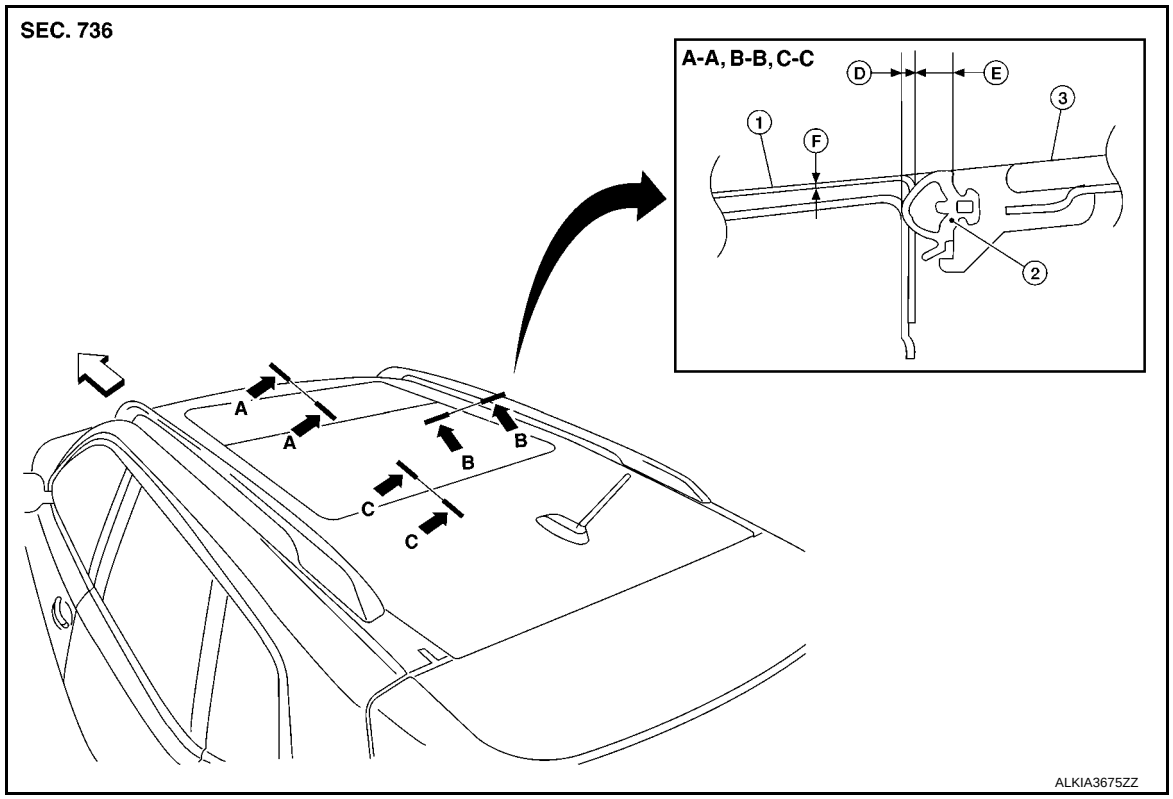
ADJUSTMENT

CAUTION:

- **Always work with a helper.**
- **Handle glass lid with care to prevent damage.**

NOTE:

- For easier and more accurate installation, always mark each point before removal.
- After any adjustment, check moonroof operation and glass lid alignment.



1. Roof panel
2. Weather-strip
3. Glass lid/panoramic roof glass

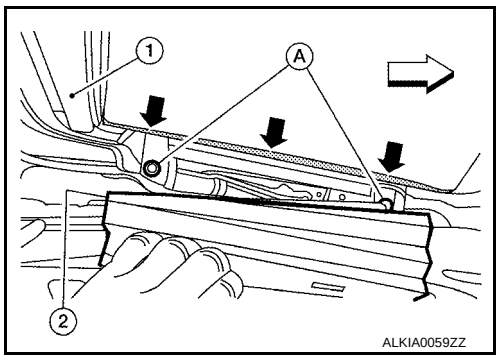
⇦ Front

Unit: mm (in)

Portion	Gap		Surface height difference
	D	E	F
A-A	1.4 ± 0.8 (0.06 ± 0.03)	7.3 ± 0.8 (0.29 ± 0.03)	0.7 ± 1.5 (0.03 ± 0.06)
B-B	1.4 ± 0.8 (0.06 ± 0.03)	7.3 ± 0.8 (0.29 ± 0.03)	0.7 ± 1.5 (0.03 ± 0.06)
C-C	1.4 ± 0.8 (0.06 ± 0.03)	7.3 ± 0.8 (0.29 ± 0.03)	0.7 ± 1.5 (0.03 ± 0.06)

Gap adjustment (Front and Rear)

1. Open sunshade (1).
   ⇦: Front
2. Tilt glass lid up, then release side trim cover (2) on each side and set aside.
   NOTE:
   LH side shown; RH similar.
3. Loosen glass lid bolts (A) (two each on LH and RH side), then tilt glass lid down.
4. Manually adjust glass lid from outside of vehicle until gaps A-A and C-C are within specification.
   NOTE:
   Temporarily loosely tighten glass lid bolts to prevent movement between each adjustment.
5. Tilt glass lid up and down several times using moonroof switch to check that it operates smoothly.



6. Tilt glass lid up and tighten bolts.
   NOTE:
   First tighten left front bolt, then right rear bolt on glass lid to prevent uneven torque while tightening remaining bolts.
7. Attach side trim covers (LH/RH), then tilt glass lid down.

Gap Adjustment (Sides)

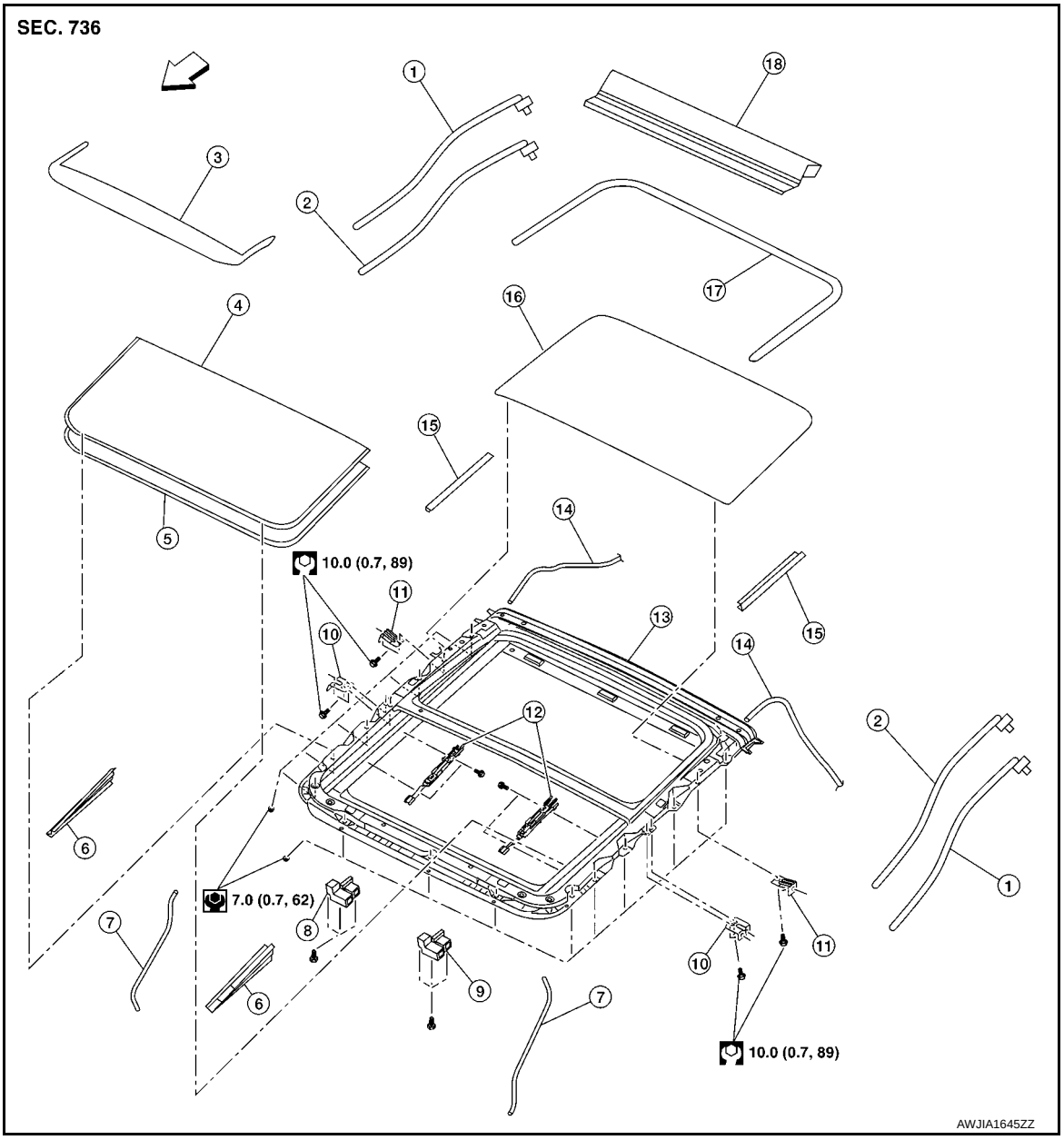
The moonroof unit assembly is mounted on locator pins and adjustment from side to side cannot be performed.

Surface Height Adjustment

1. Tilt glass lid up and down several times using moonroof switch to check that it operates smoothly.
2. Check height difference between roof surface and glass lid surface, then compare to specifications.
3. If necessary, adjust height difference by using the following procedure.
   - Loosen glass lid bolts.
   - Manually raise/lower glass lid until height difference is within specification.
     NOTE:
     If necessary, shims may be added between moonroof unit assembly and roof to increase adjustment range. Refer to RF-45, "Removal and Installation".
     Temporarily loosely tighten moonroof unit assembly bolts to prevent movement between each adjustment.
   - Tilt glass lid up and down several times using moonroof switch to check that it operates smoothly.
   - Tighten glass lid and moonroof side bracket bolts.
     NOTE:
     First tighten left front bolt, then right rear bolt on glass lid to prevent uneven torque while tightening remaining bolts.
   - After any adjustment, check moonroof operation and glass lid alignment.

Exploded View

INFOID:0000000014625626



1. Sunshade cable (LH/RH)
2. Glass lid cable (LH/RH)
3. Wind deflector
4. Glass lid
5. Glass lid weather-strip
6. Side trim cover (LH/RH)
7. Front drain hose (LH/RH)
8. Moonroof motor assembly
9. Sunshade motor assembly
10. Moonroof front bracket (LH/RH)
11. Moonroof rear bracket (LH/RH)
12. Cable guide (LH/RH)
13. Moonroof unit assembly
14. Rear drain hose (LH/RH)
15. Rear trim covers (LH/RH)
16. Panoramic roof glass
17. Panoramic roof glass weather-strip
18. Sunshade

⇦ Front

Removal and Installation

INFOID:0000000014625627

REMOVAL

CAUTION:

- **Always work with a helper.**
- **When taking moonroof unit assembly out, use cloths to protect the seats and trim from damage.**

1. Remove headlining. Refer to INT-29, "Removal and Installation".

2. Disconnect drain hoses (front/rear) from moonroof unit assembly. Refer to RF-49, "Inspection".
3. Disconnect harness connectors from moonroof motor assembly and sunshade motor assembly.
4. Remove nuts, then using a helper carefully lift each side and remove moonroof unit assembly out back of vehicle.

WARNING:
Bodily injury may occur if moonroof unit assembly is not supported properly when removing.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:
After installing the moonroof unit assembly, perform the leak test and check that there is no air or water intrusion. Refer to RF-49, "Inspection".

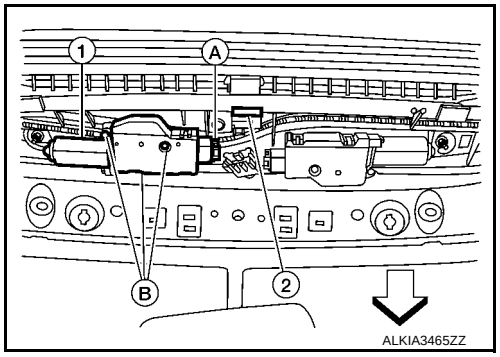
SUNSHADE MOTOR ASSEMBLY

Removal and Installation

INFOID:0000000014625628

REMOVAL

1. Remove the headlining. Refer to. INT-29, "Removal and Installation".
2. Disconnect the harness connector (A) from the sunshade motor assembly (1).
3. Remove sunshade motor assembly screws (B).
4. Remove the sunshade motor assembly from the moonroof unit assembly (2).
   ⇦ Front



INSTALLATION

Installation is in the reverse order of removal.

- Synchronize sunshade motor assembly with moonroof unit assembly. Refer to RF-22, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".

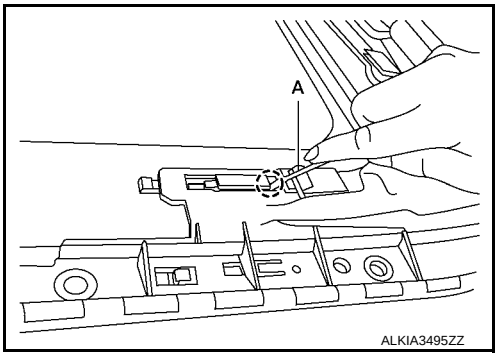
WIND DEFLECTOR

Removal and Installation

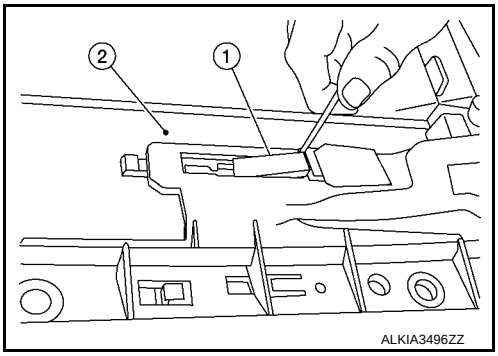
INFOID:0000000014625629

REMOVAL

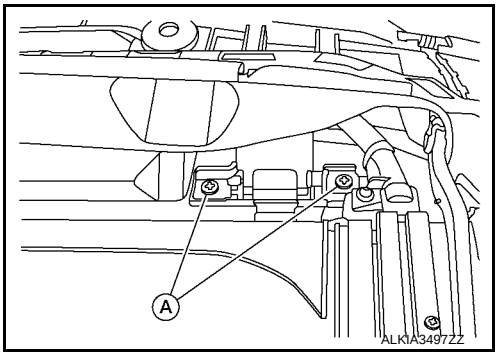
1. Open the glass lid to view the wind deflector.
2. Use suitable tool (A) release pawl on LH/RH side of wind deflector.
   ◌: Pawl



3. Release wind deflector retainer (1) from moonroof unit (2).



4. Remove screws (A) on both LH/RH sides of wind deflector.



INSTALLATION

Installation is in the reverse order of removal.

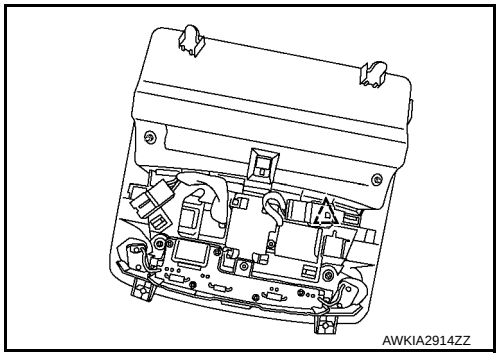
MOONROOF SWITCH

Removal and Installation

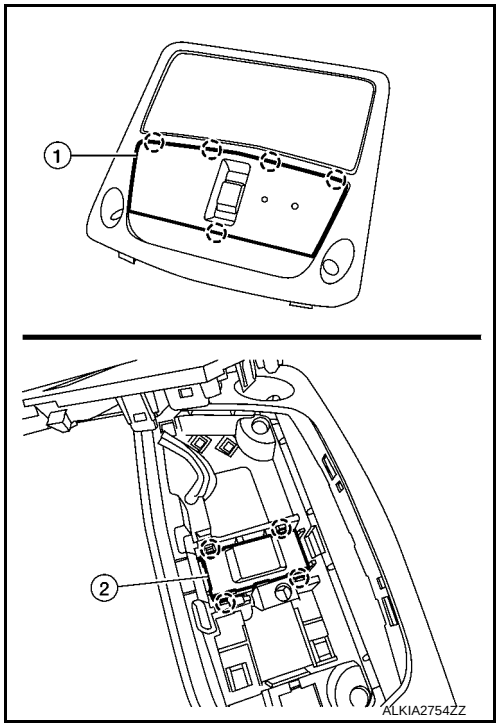
INFOID:0000000014625630

REMOVAL

1. Remove map lamp assembly. Refer to INL-52, "Removal and Installation".
2. Using a suitable tool release clip from harness connector.
   : Clip



3. Using a suitable tool release pawls and remove moonroof switch finisher (1).
4. Using a suitable tool release pawls and remove moonroof switch (2) from the front room/map lamp.
   : Pawl



INSTALLATION

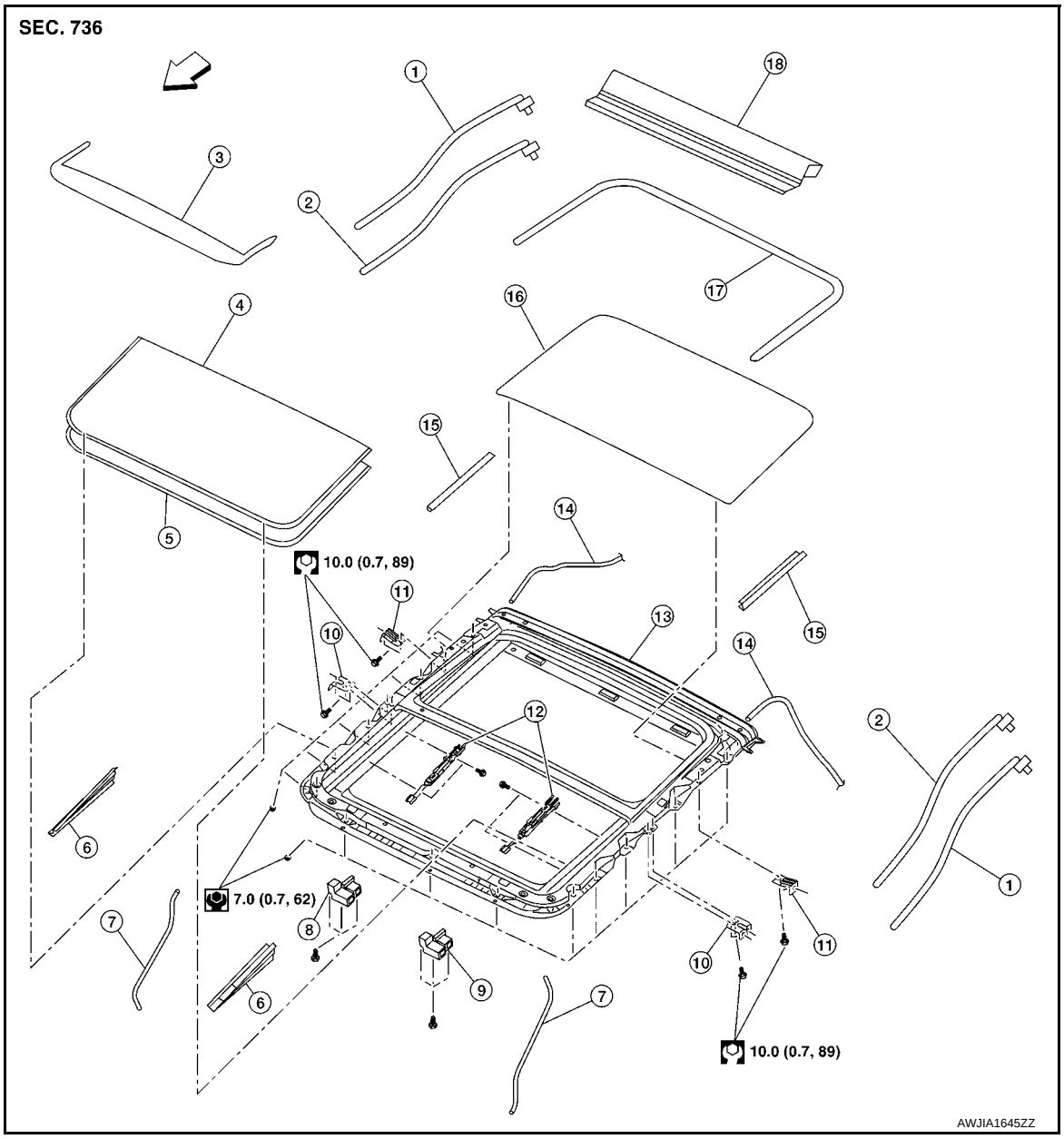
Installation is in the reverse order of removal.

UNIT DISASSEMBLY AND ASSEMBLY

PANORAMIC ROOF GLASS

Exploded View

INFOID:0000000014625631



1. Sunshade cable (LH/RH)
2. Glass lid cable (LH/RH)
3. Wind deflector
4. Glass lid
5. Glass lid weatherstrip
6. Side trim cover (LH/RH)
7. Front drain hose (LH/RH)
8. Moonroof motor assembly
9. Sunshade motor assembly
10. Moonroof front bracket (LH/RH)
11. Moonroof rear bracket (LH/RH)
12. Cable guide (LH/RH)
13. Moonroof unit assembly
14. Rear drain hose (LH/RH)
15. Rear trim covers (LH/RH)
16. Panoramic roof glass
17. Panoramic roof glass weatherstrip
18. Sunshade

⇦ Front

Disassembly and Assembly

INFOID:0000000014625632

CAUTION:

Handle panoramic roof glass with care to prevent damage.

DISASSEMBLY

1. Remove moonroof unit assembly. Refer to RF-53, "Removal and Installation".
2. Remove four screws and panoramic roof glass.

ASSEMBLY

Installation is in the reverse order of removal.

CAUTION:

- **First tighten left front screw, then right rear screw to prevent uneven alignment then tighten remaining screws.**
- **After installing panoramic roof glass, check gap/height adjustments and operation. Refer to RF-49, "Inspection".**

SUNSHADE

Disassembly and Assembly

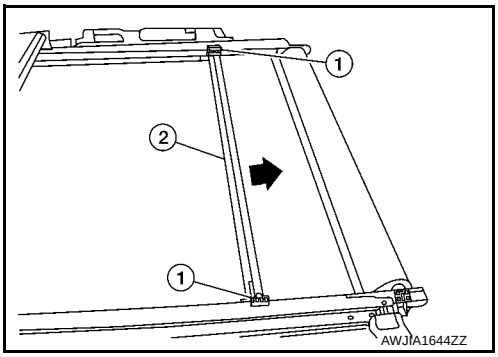
INFOID:0000000014625633

CAUTION:
- **Do not rotate sunshade retainer and moonroof unit bases or damage to components may occur.**
- **Do not over tighten screws on the moonroof unit bases or damage may occur.**

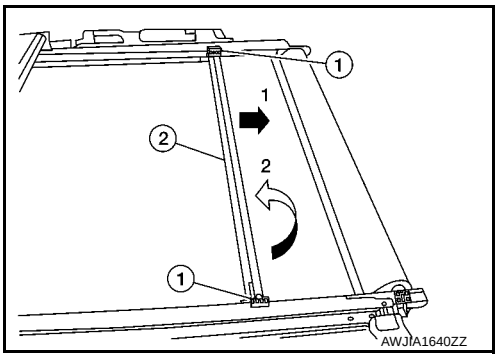
DISASSEMBLY

1. Open the sunshade leaving eight inches showing.
2. Remove panoramic roof glass. Refer to RF-58, "Disassembly and Assembly".
3. Release sunshade retainer (2) from sunshade retainer couplings (1) (LH/RH).

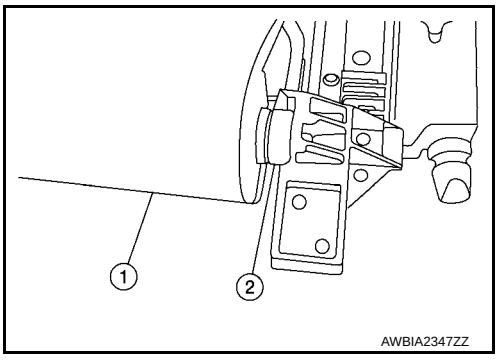
a. Release the sunshade retainer from both couplings (LH/RH) by pulling rearward as shown.



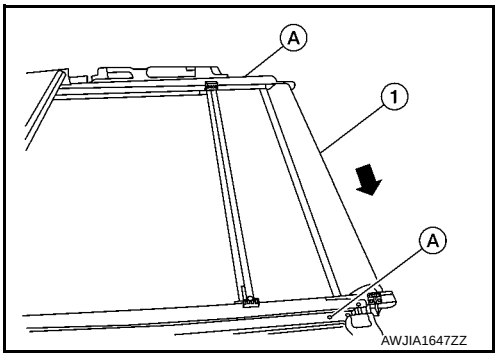
b. Rotate the sunshade retainer 90 degrees as shown.
c. Pull back the sunshade retainer (2) to remove ends from each sunshade coupling (1) (LH/RH).



4. Using a suitable tool, press up on the sunshade spacer (2) located between the sunshade (1) and moonroof unit bases.



5. Remove sunshade (1) by applying pressure toward the drivers side and pulling rearward from the moonroof bases.
6. Remove moonroof unit base screws (A).
7. Disassemble by pulling off both moonroof unit bases (LH/RH) from the moonroof unit tracks.



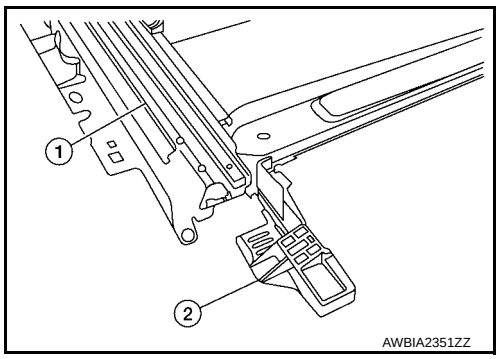
8. Manually disengage the sunshade motor and moonroof motor assembly using a suitable tool then remove both sunshade cables and glass lid cables by pulling rearward.
9. Remove the cable guides (LH/RH) by pulling rearward from the moonroof unit tracks.

ASSEMBLY

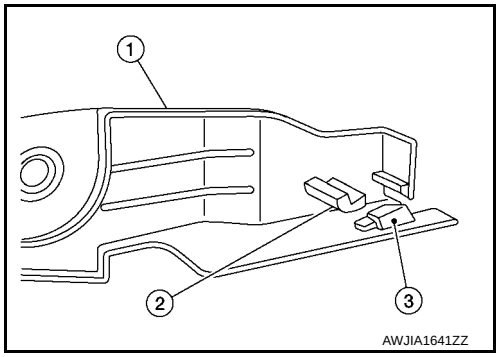
CAUTION:

Do not remove the sunshade retainer pin or damage may occur.

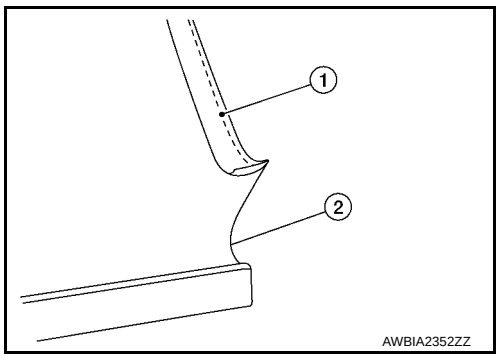
1. Insert the sunshade and glass lid cables guides by sliding forward on the moonroof unit track.
2. Assembly moonroof unit bases (2) (LH/RH) by pushing forward on the moonroof unit tracks (1) (LH/RH).
   NOTE:
   RH side shown; LH similar.



3. Insert sunshade black hem over lower guide (3) and under upper guide (2) on the moonroof unit bases (1) (LH/RH).



(1) Sunshade black hem.
(2) Sunshade fabric.



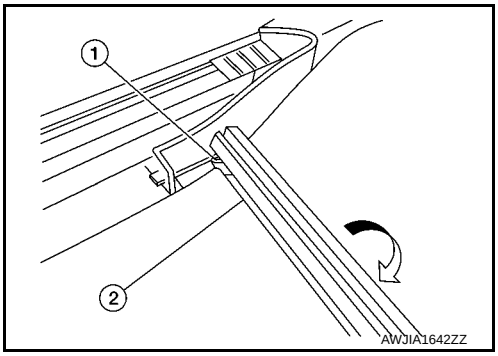
4. Assemble the sunshade by applying pressure towards the drivers and inserting both ends into the moonroof unit bases (LH/RH).

5. Assemble sunshade retainer.

a. Position the sunshade retainer on the backside of the moonroof unit couplings then position the moonroof unit couplings inside the sunshade stays open channel.

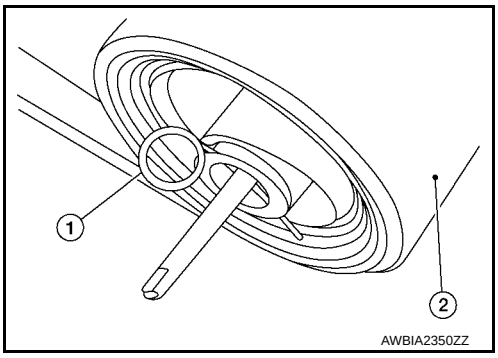
b. Rotate the sunshade 90 degrees.

c. Snap in place both ends of the sunshade stay on both LH/RH sunshade couplings.

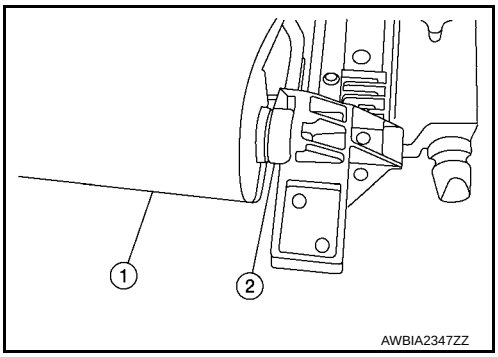


6. Manually engage the sunshade motor and moonroof motor assembly using a suitable tool

7. With the sunshade (2) assembled remove the sunshade spring retainer pin (1).



8. Install sunshade spacer (2) between sunshade (1) and moon-roof unit base..



9. Install panoramic roof glass. Refer to RF-58, "Disassembly and Assembly".

10. Install moonroof unit assembly. Refer to RF-53, "Removal and Installation".