SECTION RF
ROOF

CONTENTS

PRECAUTION

PRECAUTIONS

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

INFOID:0000000010735386

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 “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that 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 “SRS AIR BAG”.**
- **Never 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:

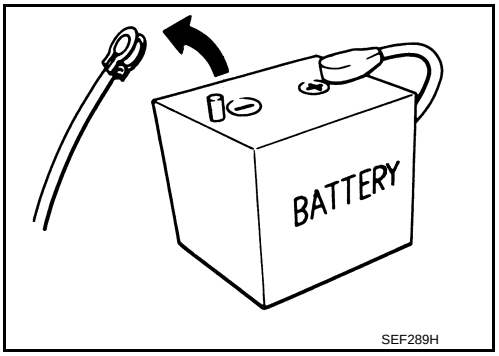
Always observe the following items for preventing accidental activation.

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

Precautions for Removing Battery Terminal

INFOID:0000000010735480

- With the adoption of Auto ACC function, ACC power is automatically supplied by operating the intelligent key or remote keyless entry or by opening/closing the driver side door. In addition, ACC power is supplied even after the ignition switch is turned to the OFF position, i.e. ACC power is supplied for a certain fixed time.
- When disconnecting the 12V battery terminal, turn off the ACC power before disconnecting the 12V battery terminal, observing “How to disconnect 12V battery terminal” described below.
  NOTE:
  Some ECUs operate for a certain fixed time even after ignition switch is turned OFF and ignition power supply is stopped. If the battery terminal is disconnected before ECU stops, accidental DTC detection or ECU data damage may occur.
- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.
  NOTE:
  If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.
- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
  NOTE:
  The removal of 12V battery may cause a DTC detection error.



SEF289H

HOW TO DISCONNECT 12V BATTERY TERMINAL

Disconnect 12V battery terminal according to Instruction 1 or Instruction 2 described below.
For vehicles parked by ignition switch OFF, refer to Instruction 2.

INSTRUCTION 1

1. Open the hood.

2. Turn key switch to the OFF position with the driver side door opened.
3. Get out of the vehicle and close the driver side door.
4. Wait at least 3 minutes. For vehicle with the engine listed below, remove the battery terminal after a lapse of the specified time.

D4D engine	: 20 minutes
HRA2DDT	: 12 minutes
K9K engine	: 4 minutes
M9R engine	: 4 minutes
R9M engine	: 4 minutes
V9X engine	: 4 minutes

CAUTION:
While waiting, never operate the vehicle such as locking, opening, and closing doors. Violation of this caution results in the activation of ACC power supply according to the Auto ACC function.

5. Remove 12V battery terminal.
CAUTION:
After installing 12V battery, always check self-diagnosis results of all ECUs and erase DTC.

INSTRUCTION 2 (FOR VEHICLES PARKED BY IGNITION SWITCH OFF)

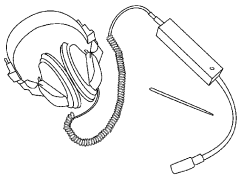
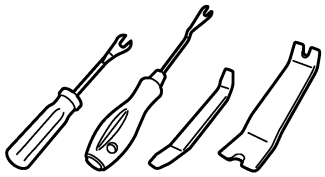
1. Unlock the door with intelligent key or remote keyless entry.
NOTE:
At this moment, ACC power is supplied.
2. Open the driver side door.
3. Open the hood.
4. Close the driver side door.
5. Wait at least 3 minutes.
CAUTION:
While waiting, never operate the vehicle such as locking, opening, and closing doors. Violation of this caution results in the activation of ACC power supply according to the Auto ACC function.
6. Remove 12V battery terminal.
CAUTION:
After installing 12V battery, always check self-diagnosis results of all ECUs and erase DTC.

PREPARATION

PREPARATION

Commercial Service Tool

INFOID:0000000010735388

Tool name	Description
Engine ear  SIIA0995E	Locates the noise
Remover tool  JMKIA3050ZZ	Removes the clips, pawls and metal clips

SYSTEM DESCRIPTION

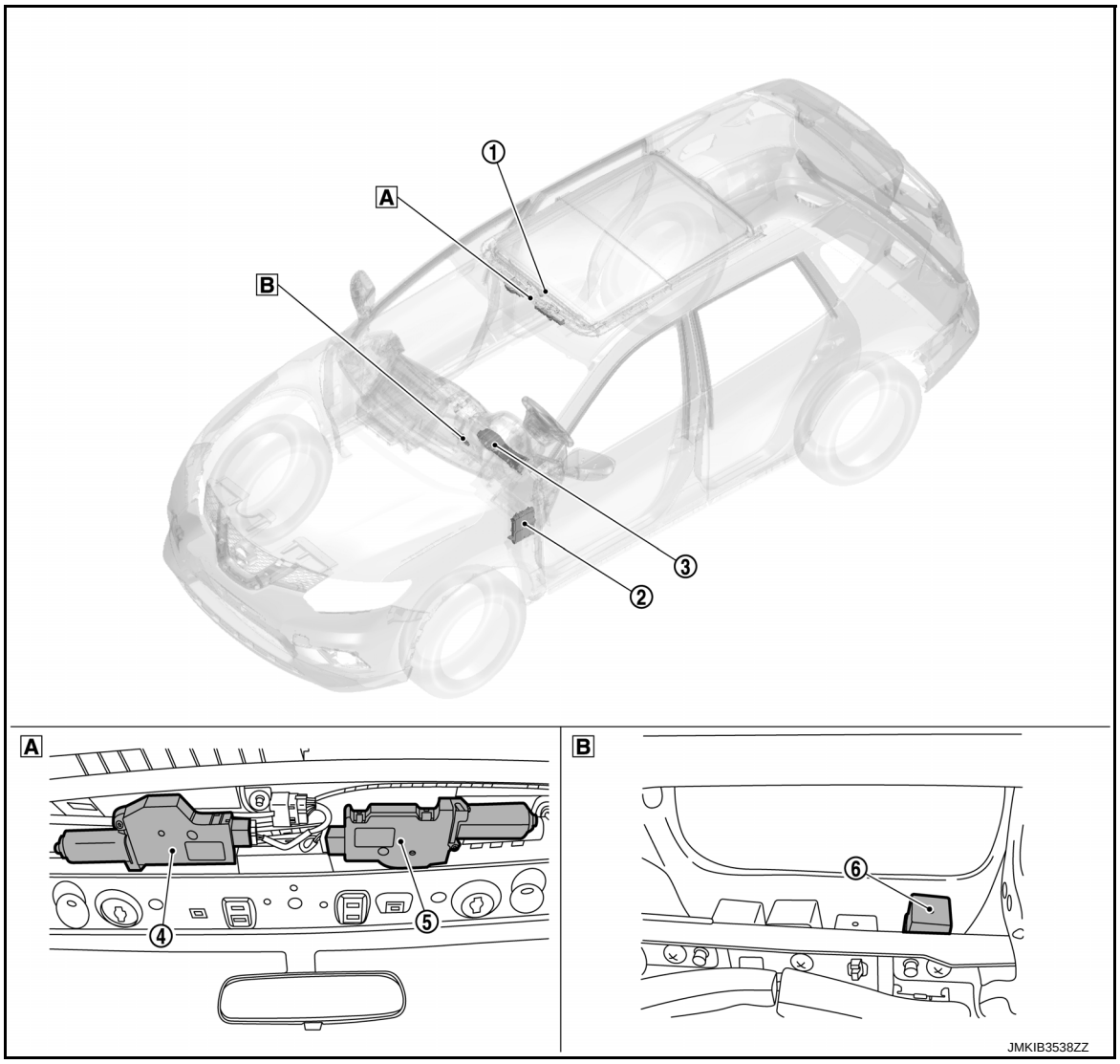
COMPONENT PARTS

SUNROOF SYSTEM

SUNROOF SYSTEM : Component Description

INFOID:0000000010735389

LHD MODELS



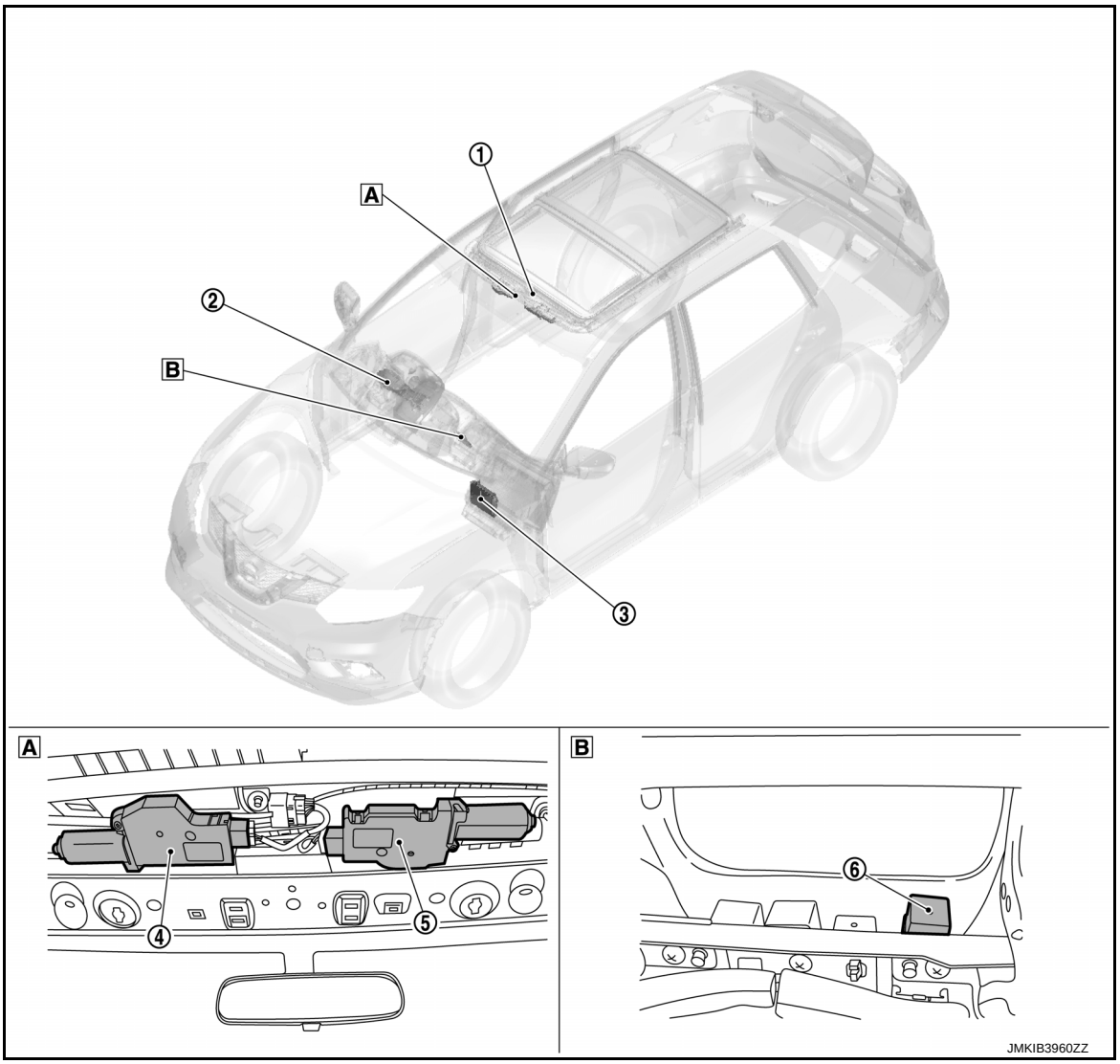
A View with headlining removed

B Behind A/C control

No.	Component	Function
①	Sunroof switch	Refer to RF-8, "SUNROOF SYSTEM : Sunroof Switch"
②	BCM	• Controls power window relay • Refer to BCS-6, "BODY CONTROL SYSTEM : Component Parts Location" for detailed installation location
③	Combination meter	Transmits vehicle speed signal to sunroof motor assembly
④	Sunshade motor assembly	Refer to RF-8, "SUNROOF SYSTEM : Sunshade Motor Assembly"

No.	Component	Function
⑤	Sunroof motor assembly	Refer to RF-8, "SUNROOF SYSTEM : Sunroof Motor Assembly"
⑥	Power window relay	Supplies power supply to sunroof motor assembly and sunshade motor assembly

RHD MODELS



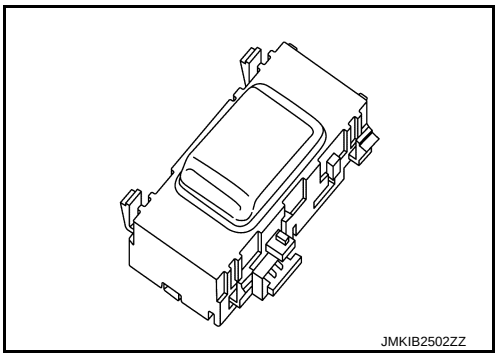
A View with headlining removed B Behind A/C control

No.	Component	Function
①	Sunroof switch	Refer to RF-8, "SUNROOF SYSTEM : Sunroof Switch"
②	Combination meter	Transmits vehicle speed signal to sunroof motor assembly
③	BCM	• Controls power window relay • Refer to BCS-6, "BODY CONTROL SYSTEM : Component Parts Location" for detailed installation location
④	Sunshade motor assembly	Refer to RF-8, "SUNROOF SYSTEM : Sunshade Motor Assembly"
⑤	Sunroof motor assembly	Refer to RF-8, "SUNROOF SYSTEM : Sunroof Motor Assembly"
⑥	Power window relay	Supplies power supply to sunroof motor assembly and sunshade motor assembly

SUNROOF SYSTEM : Sunroof Switch

INFOID:0000000010735390

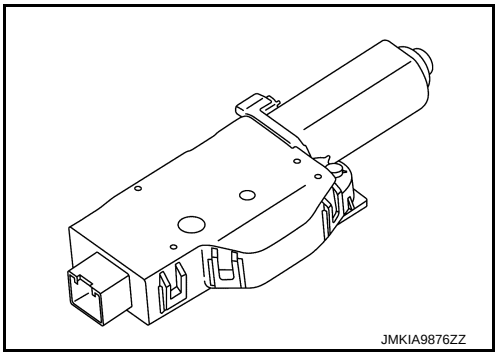
Transmits operation signal to sunroof motor assembly.



SUNROOF SYSTEM : Sunroof Motor Assembly

INFOID:0000000010735391

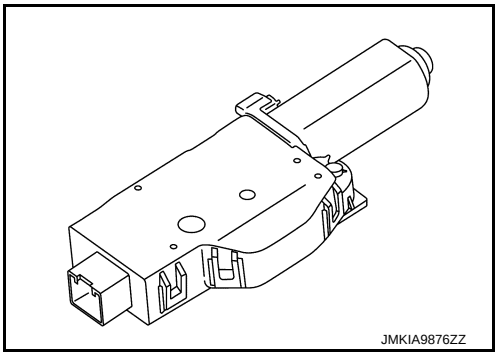
The sunroof motor and CPU integrated type enable tilt up/down and open/close sunroof operation by sunroof switch operation. And send sunroof switch signal to sunshade motor assembly via communication line.



SUNROOF SYSTEM : Sunshade Motor Assembly

INFOID:0000000010735392

The sunshade motor and CPU integrated type enable open/close sunshade operation by sunroof switch operation.

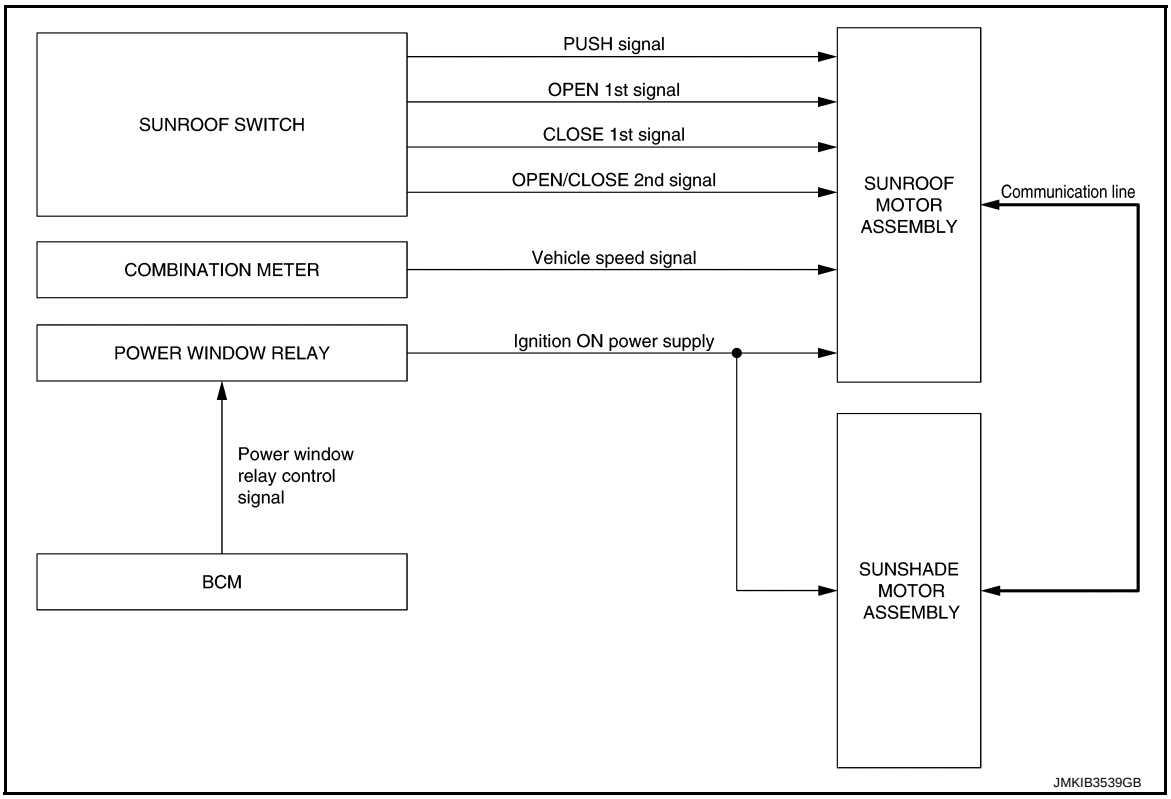


SYSTEM

System Description

INFOID:0000000010735393

SYSTEM DIAGRAM



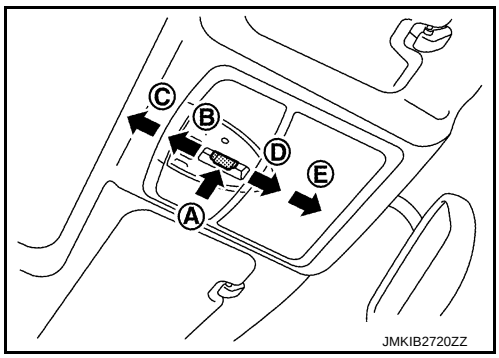
SUNROOF SYSTEM

- BCM controls the power window relay, and controls the ignition ON power source supplied to sunroof motor assembly and sunshade motor assembly.
- Sunroof motor assembly receive a vehicle speed signal from combination meter, and control the sunroof motor assembly.
- The sunroof motor assembly receives the signal from the sunroof switch to operate the sunroof, and transmits the signal from the sunroof switch to the sunshade motor assembly via communication line.
- The sunshade motor assembly operates the sunshade with the operation signal received from the sunroof motor assembly.

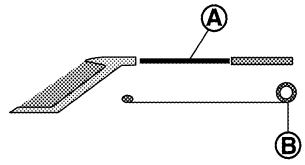
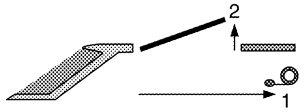
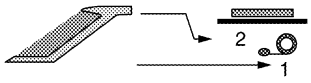
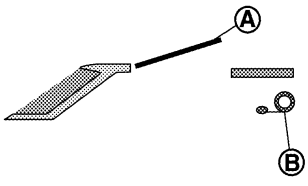
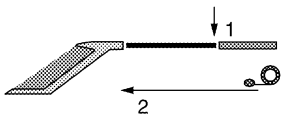
OPERATION DESCRIPTION

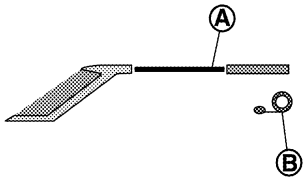
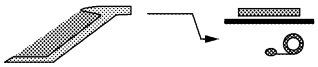
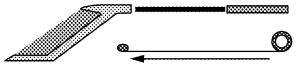
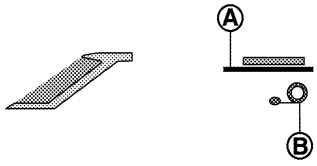
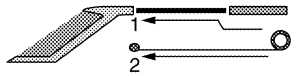
The sunroof switch can be operated in the directions of PUSH, OPEN (1st, 2nd) and CLOSE (1st, 2nd). It can operate the sunroof and sunshade by one switch.

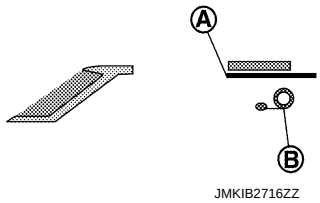
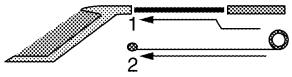
Sunroof switch operation		Sunroof and sunshade action
Ⓐ	PUSH	Tilt up/down
Ⓑ	OPEN 1st	• The sunshade opens during the 1st slide • The sunroof opens during the 2nd slide
Ⓒ	OPEN 2nd	The sunshade opens, and then the sunroof opens
Ⓓ	CLOSE 1st	• The sunroof closes during the 1st slide • The sunshade closes during the 2nd slide
Ⓔ	CLOSE 2nd	The sunroof closes, and then the sunshade closes



The sunroof and sunshade operate as per the following by operating the sunroof switch operation.

Before operation	Sunroof switch operation	Sunroof and sunshade action	After operation
Fully-closed  JMKIB2714ZZ Ⓐ: Sunroof Ⓑ: Sunshade	PUSH	1. Sunshade: Open 2. Sunroof: Tilt up	 JMKIB2703ZZ
	OPEN 1st	Sunshade: Open	 JMKIB2704ZZ
	OPEN 2nd	1. Sunshade: Open 2. Sunroof: Open (Comfort position)	 JMKIB2705ZZ
	• CLOSE 1st • CLOSE 2nd	Not action	—
Tilt up  JMKIB2717ZZ Ⓐ: Sunroof Ⓑ: Sunshade	PUSH	Sunroof: Tilt down	 JMKIB2709ZZ
	• OPEN 1st • OPEN 2nd	Not action	—
	CLOSE 1st	Sunroof: Tilt down	 JMKIB2709ZZ
	CLOSE 2nd	1. Sunroof: Tilt down 2. Sunshade: Close	 JMKIB2710ZZ

Before operation	Sunroof switch operation	Sunroof and sunshade action	After operation
Fully-open (sunshade only)  JMKIB2718ZZ Ⓐ: Sunroof Ⓑ: Sunshade	PUSH	Sunroof: Tilt up	 JMKIB2711ZZ
	• OPEN 1st • OPEN 2nd	Sunroof: Open (Comfort position)	 JMKIB2712ZZ
	• CLOSE 1st • CLOSE 2nd	Sunshade: Close	 JMKIB2713ZZ
Comfort position  JMKIB2715ZZ Ⓐ: Sunroof Ⓑ: Sunshade	PUSH	Not action	—
	• OPEN 1st • OPEN 2nd	Sunroof: Open (Fully-open)	 JMKIB2706ZZ
	CLOSE 1st	Sunroof: Close	 JMKIB2707ZZ
	CLOSE 2nd	1. Sunroof: Close 2. Sunshade: Close	 JMKIB2708ZZ

Before operation	Sunroof switch operation	Sunroof and sunshade action	After operation
Fully-open  JMKIB2716ZZ Ⓐ: Sunroof Ⓑ: Sunshade	• PUSH • OPEN 1st • OPEN 2nd	Not action	—
	CLOSE 1st	Sunroof: Close	 JMKIB2707ZZ
	CLOSE 2nd	1. Sunroof: Close 2. Sunshade: Close	 JMKIB2708ZZ

AUTO OPERATION

The sunroof and sunshade operates automatically by operating the sunroof switch.

NOTE:

- If initialization setting is not performed, the automatic function does not operate.
- During automatic operation, when the sunroof switch is operated, automatic operation can be stopped.

ANTI-PINCH FUNCTION

- The CPU of sunroof motor assembly monitors the sunroof condition using the signals from sunroof motor. When sunroof motor assembly detects an interruption during auto operation (close or tilt down operation), sunroof motor will tilt up or open [150 mm (5.91 in) or more] sunroof.
- The CPU of sunshade motor assembly monitors the sunshade condition using the signals from sunshade motor. When sunshade motor assembly detects an interruption during auto close operation, sunshade motor will open [150 mm (5.91 in) or more] sunshade.

CAUTION:

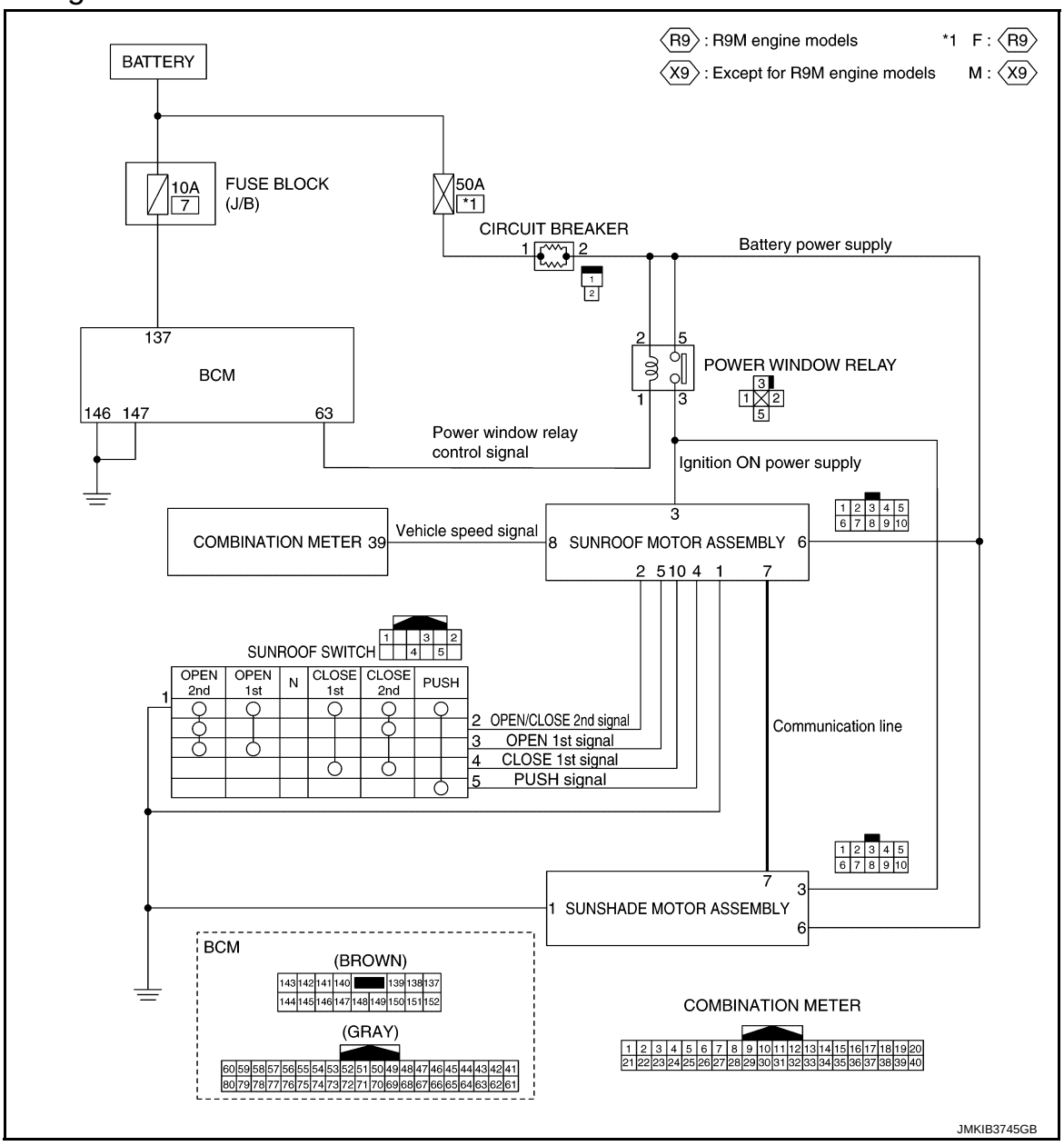
There are some small distances immediately before the closed position which cannot be detected.

NOTE:

- If initialization setting is not performed, the anti-pinch function does not operate.
- When the distance between pinching position and fully-open position is less than 150 mm (5.91 in), sunroof or sunshade reverses to fully-open position.

Circuit Diagram

INFOID:0000000010735394



ECU DIAGNOSIS INFORMATION

BCM (BODY CONTROL MODULE)

List of ECU Reference

INFOID:0000000010735395

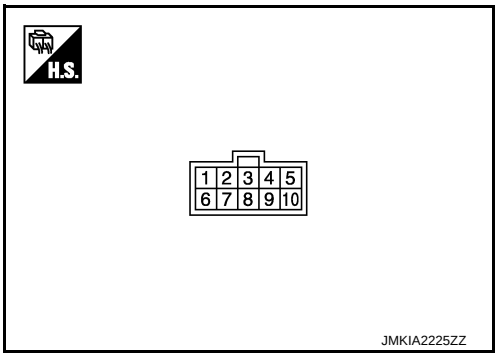
ECU	Reference
BCM	BCS-53, "Reference Value"
	BCS-76, "Fail-safe"
	BCS-77, "DTC Inspection Priority Chart"
	BCS-78, "DTC Index"

SUNROOF MOTOR ASSEMBLY

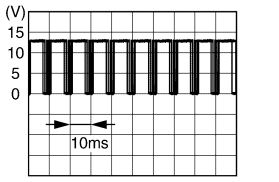
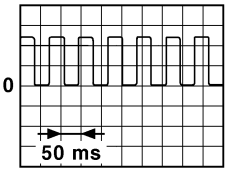
Reference Value

INFOID:0000000010735396

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No.		Description		Condition		Voltage
+	–	Signal name	Input/ Output			
1	Ground	Ground	—	—		0 – 1 V
2	Ground	OPEN/CLOSE 2nd signal	Input	Sunroof switch	• OPEN 2nd • CLOSE 2nd	0 – 1 V
					Other than above	9 – 16 V
3	Ground	Ignition ON power supply	Input	Ignition switch ON		9 – 16 V
				Other than above		0 – 1 V
4	Ground	PUSH signal	Input	Sunroof switch	PUSH	0 – 1 V
					Other than above	9 – 16 V
5	Ground	OPEN 1st signal	Input	Sunroof switch	• OPEN 1st • OPEN 2nd	0 – 1 V
					Other than above	9 – 16 V
6	Ground	Battery power supply	Input	—		9 – 16 V
7	Ground	Communication line	Input/ Output	Ignition switch ON		 JMKIB2719GB
8	Ground	Vehicle speed signal	Input	Speed meter operated [When vehicle speed is approx. 40 km/h (25 MPH)]		**NOTE:** The maximum voltage varies depending on the specification (destination unit).  JSNIA0015GB

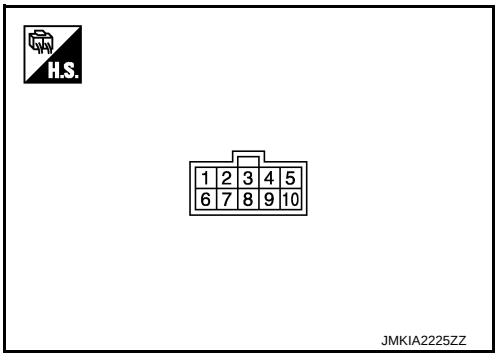
Terminal No.		Description		Condition		Voltage
+	–	Signal name	Input/ Output			
10	Ground	CLOSE 1st signal	Input	Sunroof switch	• CLOSE 1st • CLOSE 2nd	0 – 1 V
					Other than above	9 – 16 V

SUNSHADE MOTOR ASSEMBLY

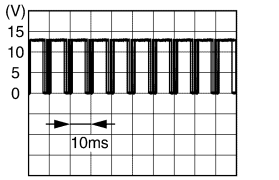
Reference Value

INFOID:0000000010735397

TERMINAL LAYOUT



PHYSICAL VALUES

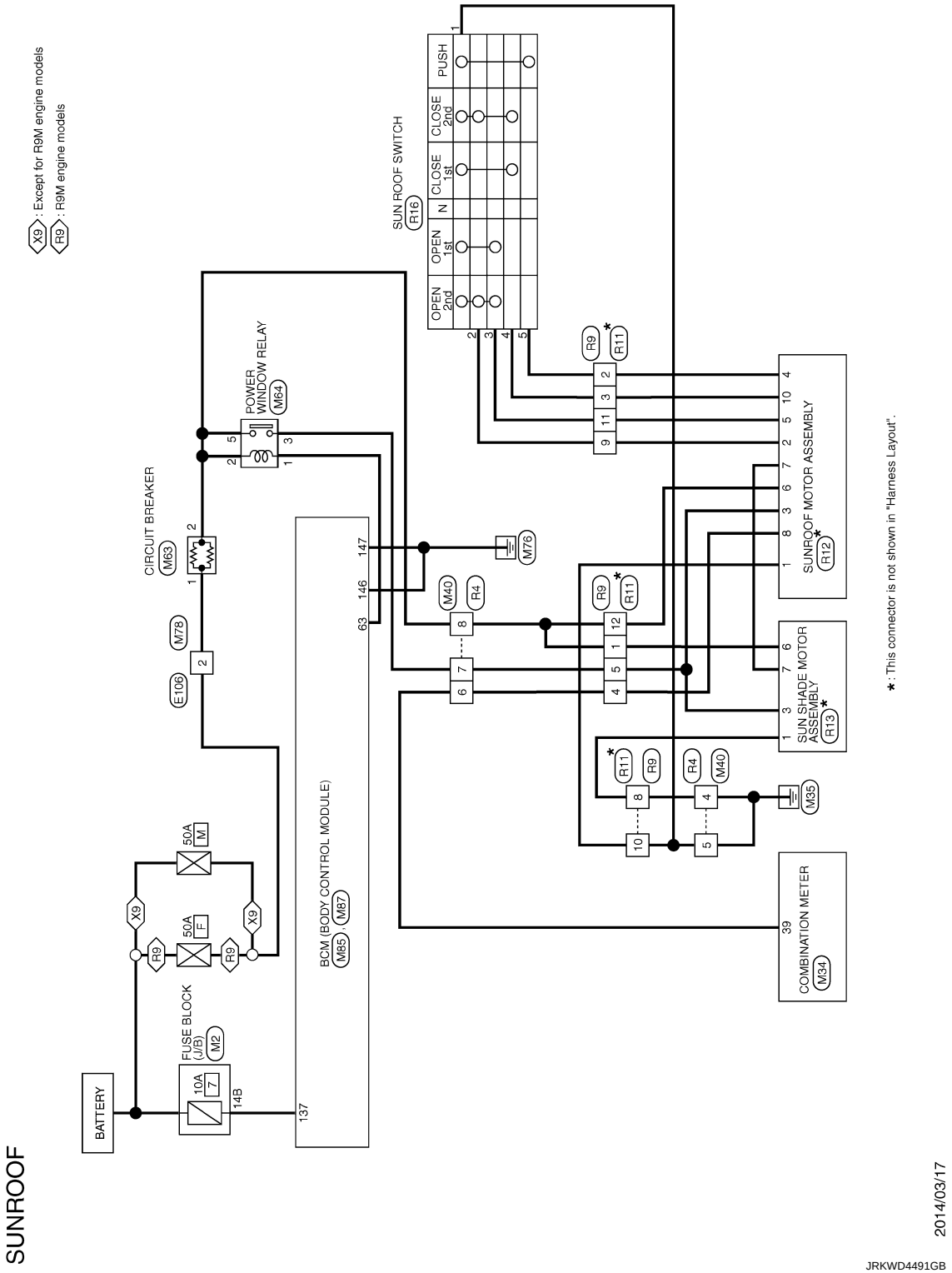
Terminal No.		Description		Condition	Voltage
+	–	Signal name	Input/ Output		
1	Ground	Ground	—	—	0 – 1 V
3	Ground	Ignition ON power supply	Input	Ignition switch ON	9 – 16 V
				Other than above	0 – 1 V
6	Ground	Battery power supply	Input	—	9 – 16 V
7	Ground	Communication line	Input/ Output	Ignition switch ON	

WIRING DIAGRAM

SUNROOF SYSTEM

Wiring Diagram

INFOID:0000000010735398



SUNROOF

Connector No.	E106
Connector Name	WIRE TO WIRE
Connector Type	L02FB-MC

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	W	-

Connector No.	M2
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FBR-CS

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
10B	GR	- [With MR20 engine or R9M engine]
10B	LA/GR	- [With QR25 Engine]
12B	BR	-
14B	W	-
15B	W	-
16B	GR	-
1B	G	-
2B	R	-
3B	V	-
6B	LA/L	-
7B	LA/V	-

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

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GROUND
7	BG	SECURITY SIGNAL
9	GR	ECO MODE SWITCH SIGNAL
15	L	AMBIENT SENSOR SIGNAL
17	BG	METER CONTROL SWITCH GROUND
18	SB	TRIP RESET SWITCH SIGNAL
20	Y	AMBIENT SENSOR GROUND
21	L	STEERING SWITCH GROUND
22	Y	STEERING SWITCH SIGNAL A
23	GR	STEERING SWITCH SIGNAL B
25	V	BRAKE FLUID LEVEL SWITCH SIGNAL
28	Y	SEAT BELT BUCKLE SWITCH SIGNAL (DRIVER SIDE)
30	LG	MANUAL MODE SIGNAL
31	SB	NON-MANUAL MODE SIGNAL
32	BG	MANUAL MODE SHIFT UP SIGNAL
33	BR	MANUAL MODE SHIFT DOWN SIGNAL
36	GR	ILLUMINATION CONTROL SWITCH SIGNAL (+)
37	V	ILLUMINATION CONTROL SWITCH SIGNAL (-)
38	G	VEHICLE SPEED SIGNAL (8-PULSE)
39	W	VEHICLE SPEED SIGNAL (2-PULSE)

Connector No.	M40
Connector Name	WIRE TO WIRE
Connector Type	NS08FW-CS

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
4	B	-
5	B	-
6	W	-
7	Y	-
8	R	-

Connector No.	M63
Connector Name	CIRCUIT BREAKER
Connector Type	M02FW-P-LC

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	P	-

Connector No.	M64
Connector Name	POWER WINDOW RELAY
Connector Type	24347_9F900

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	W	-
3	L	-
5	P	-

Connector No.	M78
Connector Name	WIRE TO WIRE
Connector Type	L02MB-MC

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	W	-

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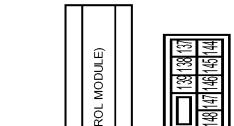
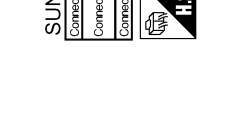
SUNROOF

Connector No.	M85
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS16FBR-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
137	W	BAT POWER SUPPLY (FUSE)
138	SB	INT ROOM LAMP CONT
139	L	PASSENGER DOOR UNLOCK OUTPUT
141	V	FRONT DOOR LOCK OUTPUT
143	LA/V	POWER SUPPLY (ER DOOR LK ACT)
144	BG	POWER SUPPLY (TURN SIGNAL)
145	GR	POWER SUPPLY (STOP LAMP)
146	B	GROUND
147	G	DRIVER DOOR UNLOCK OUTPUT
148	W	FRONT DOOR SUPERLOCK OUTPUT
149	R	POWER SUPPLY (REAR DOOR LK ACT)
151	LG	POWER SUPPLY (REAR WIPER)
152		

Connector No.	M87
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FGY-NH

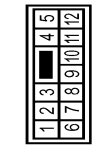


Terminal No.	Color Of Wire	Signal Name [Specification]
41	V	STEERING LOCK UNIT POWER SUPPLY
42	LA/G	TURN SIG LH (SIDE)
43	LA/Y	TURN SIG RH (SIDE)
44	P	INTERIOR ROOM LAMP RELAY CONT
45	R	CAN-L
46	L	CAN-H
47	G	LIGHT & RAIN SENSOR
48	L	CAN-H
49	R	CAN-L
50	BG	DOOR LOCK SW
51	Y	HAZARD SW
56	P	DONGLE
57	L	CVT SHIFT SELECT (DETENT SW) PWR
60	R	HEADLAMP WASHER SW
63	G	POWER WINDOW RELAY CON
64	LA/R	REAR WINDOW DEFOGGER RELAY CONT
65	BR	ACC RELAY CONT
67	Y	IGN RELAY (F/B) CONT OUTPUT
68	LA/W	BLOWER RELAY CONT
73	LG	COMBI SW INPUT 5
74	Y	COMBI SW OUTPUT 5
75	BG	SECURITY IND LAMP CONT
76	G	COMBI SW INPUT 3
77	GR	COMBI SW INPUT 4
78	V	COMBI SW INPUT 1
79	W	COMBI SW INPUT 2
80	SB	DOOR UNLOCK SW

Connector No.	R9
Connector Name	WIRE TO WIRE
Connector Type	NS12FW-CS

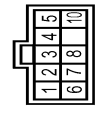
Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	-
2	Y	-
3	V	-
4	P	-
5	GR	-
8	B	-
9	W	-
10	B	-
11	LG	-
12	L	-

Connector No.	R11
Connector Name	WIRE TO WIRE
Connector Type	NS12MW-CS



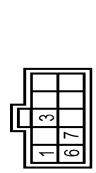
Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	-
2	Y	-
3	V	-
4	P	-
5	GR	-
8	B	-
9	W	-
10	B	-
11	LG	-
12	L	-

Connector No.	R12
Connector Name	SUNROOF MOTOR ASSEMBLY
Connector Type	YEA10FGY



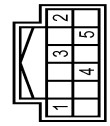
Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	GROUND
2	-	OPEN/CLOSE 2nd SIGNAL
3	-	IGN ON POWER SUPPLY
4	-	PUSH SIGNAL
5	-	OPEN 1st SIGNAL
6	-	BATTERY POWER SUPPLY
7	-	COMMUNICATION LINE
8	-	VEHICLE SPEED SIGNAL
10	-	CLOSE 1st SIGNAL

Connector No.	R13
Connector Name	SUNSHADE MOTOR ASSEMBLY
Connector Type	YEA10FGY



Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	GROUND
3	-	IGN ON POWER SUPPLY
6	-	BATTERY POWER SUPPLY
7	-	COMMUNICATION LINE

Connector No.	R16
Connector Name	SUNROOF SWITCH
Connector Type	TH12FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-

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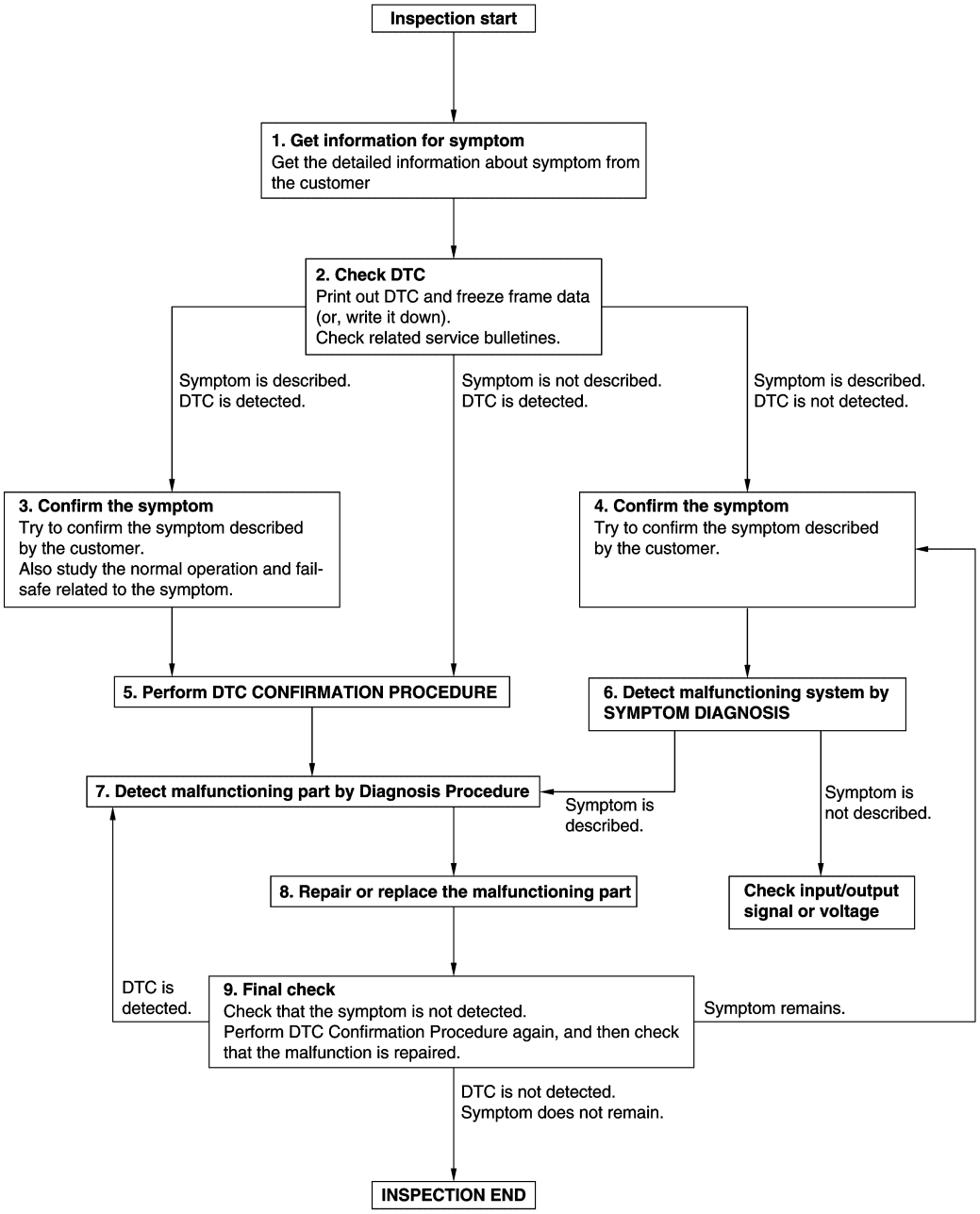
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000010735399

OVERALL SEQUENCE



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DETAILED FLOW

1.GET INFORMATION FOR SYMPTOM

1. Get detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurs).
2. Check operation condition of the function that is malfunctioning.

>> GO TO 2.

2.CHECK DTC

1. Check DTC.
2. Perform the following procedure if DTC is detected.

- Record DTC and freeze frame data (Print them out using CONSULT.)
- Erase DTC.
- Study the relationship between the cause detected by DTC and the symptom described by the customer.

3. Check related service bulletins for information.

Are any symptoms described and any DTC detected?

Symptom is described, DTC is detected>>GO TO 3.
Symptom is described, DTC is not detected>>GO TO 4.
Symptom is not described, DTC is detected>>GO TO 5.

3.CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.
Also study the normal operation and fail-safe related to the symptom.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 5.

4.CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 6.

5.PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC CONFIRMATION PROCEDURE for the detected DTC, and then check that DTC is detected again. At this time, always connect CONSULT to the vehicle, and check self diagnostic results in real time.
If two or more DTCs are detected, refer to DTC INSPECTION PRIORITY CHART, and determine trouble diagnosis order.

NOTE:

- Freeze frame data is useful if the DTC is not detected.
- Perform Component Function Check if DTC CONFIRMATION PROCEDURE is not included on Service Manual. This simplified check procedure is an effective alternative though DTC cannot be detected during this check.
  If the result of Component Function Check is NG, it is the same as the detection of DTC by DTC CONFIRMATION PROCEDURE.

Is DTC detected?

YES >> GO TO 7.
NO >> Check according to GI-44, "Intermittent Incident".

6.DETECT MALFUNCTIONING SYSTEM BY SYMPTOM DIAGNOSIS

Detect malfunctioning system according to SYMPTOM DIAGNOSIS based on the confirmed symptom in step 4, and determine the trouble diagnosis order based on possible causes and symptom.

Is the symptom described?

YES >> GO TO 7.
NO >> Monitor input data from related sensors or check voltage of related module terminals using CONSULT.

7.DETECT MALFUNCTIONING PART BY DIAGNOSIS PROCEDURE

Inspect according to Diagnosis Procedure of the system.

Is malfunctioning part detected?

YES >> GO TO 8.
NO >> Check according to GI-44, "Intermittent Incident".

8. REPAIR OR REPLACE THE MALFUNCTIONING PART

1. Repair or replace the malfunctioning part.
2. Reconnect parts or connectors disconnected during Diagnosis Procedure again after repair and replacement.
3. Check DTC. If DTC is detected, erase it.

>> GO TO 9.

9. FINAL CHECK

When DTC is detected in step 2, perform DTC CONFIRMATION PROCEDURE again, and then check that the malfunction is repaired securely.
When symptom is described by the customer, refer to confirmed symptom in step 3 or 4, and check that the symptom is not detected.

Is DTC detected and does symptom remain?

YES-1 >> DTC is detected: GO TO 7.
YES-2 >> Symptom remains: GO TO 4.
NO >> Before returning the vehicle to the customer, always erase DTC.

SYSTEM INITIALIZATION

Description

INFOID:0000000010735400

Initialization of system should be conducted after the following conditions.
- When the sunroof motor assembly or sunshade motor assembly is changed.
- When the sunroof or sunshade does not operate normally. (Incomplete initialization conditions)

Work Procedure

INFOID:0000000010735401

1.STEP 1

1. Close the sunroof and sunshade, then release the sunroof switch once.
2. Press and hold the sunroof switch CLOSE (1st or 2nd) again (for approx. 10 seconds), then sunroof tilt up, sunshade moves forward and stops mechanically.
3. Release the sunroof switch, and press and hold the sunroof switch CLOSE (1st or 2nd) again. Then sunroof and sunshade automatically move to the sunshade fully open → sunroof tilt down → sunroof fully open → sunroof fully closed → sunshade fully closed.
4. Release sunroof switch, after the sunshade is fully close position.

>> GO TO 2.

2.STEP 2

1. Operate sunroof switch and check that sunroof and sunshade automatically operated normally.
2. Perform anti-pinch function check. Refer to RF-25, "Description".

>> END

ANTI-PINCH INSPECTION

Description

INFOID:0000000010735402

Check anti-pinch function when the initialization of sunroof and sunshade system is performed.

Work Procedure

INFOID:0000000010735403

1. CHECK ANTI-PINCH FUNCTION

1. Fully open the sunroof.
2. Place a piece of wood near the fully closed position.
3. Close the sunroof completely with auto-slide closed.
4. Check that sunroof lowers for approximately 150 mm (5.91 in) without pinching a piece of wood and stops.
5. Fully open the sunshade.
6. Place a piece of wood near fully closed position.
7. Close the sunshade completely with auto-slide closed.
8. Check that sunshade lowers for approximately 150 mm (5.91 in) without pinching a piece of wood and stops.

CAUTION:

- **Never check with hands or another part of the body because they may be pinched. never get pinched.**
- **When the distance between pinching position and fully-open position is less than 150 mm (5.91 in), sunroof or sunshade reverses to fully-open position.**

Is the inspection result normal?

YES >> END
NO >> Perform initialization procedure. Refer to RF-24, "Description".

DTC/CIRCUIT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT

SUNROOF MOTOR ASSEMBLY

SUNROOF MOTOR ASSEMBLY : Diagnosis Procedure

INFOID:0000000010735404

1.CHECK FUSE AND FUSIBLE LINK

1. Turn ignition switch OFF.
2. Check that any of the following fuse and fusible link is not fusing.

R9M engine models

Signal name	Fuse and fusible link No.
Battery power supply	7 (10A)
	F (50A)

Except for R9M engine models

Signal name	Fuse and fusible link No.
Battery power supply	7 (10A)
	M (50A)

Is the inspection result normal?

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

2.CHECK SUNROOF MOTOR ASSEMBLY POWER SUPPLY 1

1. Disconnect sunroof motor assembly connector.
2. Check voltage between sunroof motor assembly harness connector and ground.

(+)		(–)	Voltage
Sunroof motor assembly			
Connector	Terminal		
R12	6	Ground	9 – 16 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 4.

3.CHECK SUNROOF MOTOR ASSEMBLY POWER SUPPLY 2

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

(+)		(–)	Voltage
Sunroof motor assembly			
Connector	Terminal		
R12	3	Ground	9 – 16 V

Is the inspection result normal?

YES >> GO TO 10.
NO >> GO TO 6.

4.CHECK SUNROOF MOTOR ASSEMBLY POWER SUPPLY CIRCUIT 1

1. Disconnect circuit breaker connector.
2. Check voltage between circuit breaker harness connector and ground.

(+)		(–)	Voltage
Circuit breaker			
Connector	Terminal		
M63	1	Ground	9 – 16 V

Is the inspection result normal?

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

5. CHECK SUNROOF MOTOR ASSEMBLY POWER SUPPLY CIRCUIT 2

Check continuity between circuit breaker harness connector and sunroof motor assembly harness connector.

Circuit breaker		Sunroof motor assembly		Continuity
Connector	Terminal	Connector	Terminal	
M63	2	R12	6	Existed

Is the inspection result normal?

YES >> Replace circuit breaker.
NO >> Repair or replace harness.

6. CHECK SUNROOF MOTOR ASSEMBLY POWER SUPPLY CIRCUIT 3

1. Turn ignition switch to OFF, and then wait for 3 minutes with driver door open.
   NOTE:
   - Even after ignition switch is OFF, power is supplied to accessories for a certain amount of time by the AUTO ACC function.
   - When vehicle is operated while on standby, power may be supplied to accessories.
2. Disconnect power window relay connector.
3. Check voltage between power window relay harness connector and ground.

(+)		(–)	Voltage
Power window relay			
Connector	Terminal		
M64	2	Ground	9 – 16 V
	5		

Is the inspection result normal?

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

7. CHECK SUNROOF MOTOR ASSEMBLY POWER SUPPLY CIRCUIT 4

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

Power window relay		Sunroof motor assembly		Continuity
Connector	Terminal	Connector	Terminal	
M64	3	R12	3	Existed

Is the inspection result normal?

YES >> GO TO 8.
NO >> Repair or replace harness.

8. CHECK POWER WINDOW RELAY GROUND CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector and power window relay harness connector.

BCM		Power window relay		Continuity
Connector	Terminal	Connector	Terminal	
M87	63	M64	1	Existed

Is the inspection result normal?

YES >> GO TO 9.
NO >> Repair or replace harness.

9.CHECK POWER WINDOW RELAY

Check power window relay.
Refer to PWC-62, "Component Function Check".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".
NO >> Replace power window relay.

10.CHECK SUNROOF MOTOR ASSEMBLY GROUND CIRCUIT

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

Sunroof motor assembly		Ground	Continuity
Connector	Terminal		
R12	1		Existed

Is the inspection result normal?

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

SUNSHADE MOTOR ASSEMBLY

SUNSHADE MOTOR ASSEMBLY : Diagnosis Procedure

INFOID:0000000010735405

1.CHECK SUNSHADE MOTOR ASSEMBLY POWER SUPPLY 1

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

(+)		(–)	Voltage
Sunshade motor assembly			
Connector	Terminal		
R13	6	Ground	9 – 16 V

Is the inspection result normal?

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

2.CHECK SUNSHADE MOTOR ASSEMBLY POWER SUPPLY 2

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

(+)		(–)	Voltage
Sunshade motor assembly			
Connector	Terminal		
R13	3	Ground	9 – 16 V

Is the inspection result normal?

YES >> GO TO 5.
NO >> GO TO 4.

3. CHECK SUNSHADE MOTOR ASSEMBLY POWER SUPPLY CIRCUIT 1

1. Disconnect circuit breaker connector.
2. Check continuity between circuit breaker harness connector and sunshade motor assembly harness connector.

Circuit breaker		Sunshade motor assembly		Continuity
Connector	Terminal	Connector	Terminal	
M63	2	R13	6	Existed

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".
NO >> Repair or replace harness.

4. CHECK SUNSHADE MOTOR ASSEMBLY POWER SUPPLY CIRCUIT 2

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

Power window relay		Sunshade motor assembly		Continuity
Connector	Terminal	Connector	Terminal	
M64	3	R13	3	Existed

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".
NO >> Repair or replace harness.

5. CHECK SUNSHADE MOTOR ASSEMBLY 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		
R13	1		Existed

Is the inspection result normal?

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

COMMUNICATION SIGNAL CIRCUIT

Component Function Check

INFOID:0000000010735406

1.CHECK SUNSHADE FUNTION

Check sunshade open/close operations with sunroof switch.

Is the inspection result normal?

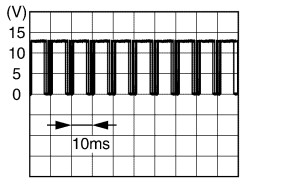
YES >> INSPECTION END.
NO >> Refer to RF-30, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000010735407

1.CHECK COMMUNICATION SIGNAL

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

(+)		(–)	Signal (Reference value)
Sunshade motor assembly			
Connector	Terminal		
R13	7	Ground	

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Is the inspection result normal?

YES >> Replace sunshade motor assembly. Refer to RF-55, "Removal and Installation".
NO >> GO TO 2.

2.CHECK COMMUNICATION SIGNAL CIRCUIT

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

Sunroof motor assembly		Sunshade motor assembly		Continuity
Connector	Terminal	Connector	Terminal	
R12	7	R13	7	Existed

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

Sunshade motor assembly		Ground	Continuity
Connector	Terminal		Not existed
R13	7		

Is the inspection result normal?

YES >> Replace sunroof motor assembly. Refer to RF-53, "Removal and Installation".
NO >> Repair or replace harness.

VEHICLE SPEED SIGNAL CIRCUIT

Component Function Check

INFOID:0000000010735408

1.CHECK SUNROOF FUNCTION

1. Start engine.
2. Drive the vehicle at more than 40 km/h (25 MPH).
   CAUTION:
   Always drive vehicle at a safe speed.
   NOTE:
   This procedure may be conducted with the drive wheels lifted in the shop or by driving the vehicle. If a road test is expected to be easier, it is unnecessary to lift the vehicle.
3. Check sunroof tilt up/down and open/close operations with sunroof switch.

Is the inspection result normal?

YES >> INSPECTION END
NO >> Refer to RF-31, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000010735409

1.CHECK DTC WITH COMBINATION METER

Check that DTC is not detected with combination meter.
Refer to MWI-105, "DTC Index".

Is the inspection result normal?

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

2.CHECK VEHICLE SPEED SIGNAL CIRCUIT

1. Turn ignition switch to OFF, and then wait for 3 minutes with driver door open.
   NOTE:
   - Even after ignition switch is OFF, power is supplied to accessories for a certain amount of time by the AUTO ACC function.
   - When vehicle is operated while on standby, power may be supplied to accessories.
2. Disconnect sunroof motor assembly connector and combination meter connector.
3. Check continuity between sunroof motor assembly harness connector and combination meter harness connector.

Sunroof motor assembly		Combination meter		Continuity
Connector	Terminal	Connector	Terminal	
R12	8	M34	39	Existed

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

Sunroof motor assembly		Ground	Continuity
Connector	Terminal		
R12	8		Not existed

Is the inspection result normal?

YES >> Replace sunroof motor assembly. RF-53, "Removal and Installation".
NO >> Repair or replace harness.

SUNROOF SWITCH

Component Function Check

INFOID:0000000010735410

1.CHECK SUNROOF AND SUNSHADE FUNTION

Check sunroof tilt up/down, open/close and sunshade open/close operations with sunroof switch.

Is the inspection result normal?

YES >> INSPECTION END.
NO >> Refer to RF-32, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000010735411

1. CHECK SUNROOF SWITCH INPUT SIGNAL

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

(+)		(–)	Voltage
Sunroof switch			
Connector	Terminal		
R16	2	Ground	9 – 16 V
	3		
	4		
	5		

Is the inspection result normal?

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

2.CHECK SUNROOF SWITCH CIRCUIT

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

Sunroof motor assembly		Sunroof switch		Continuity
Connector	Terminal	Connector	Terminal	
R12	2	R16	2	Existed
	5		3	
	10		4	
	4		5	

4. Check continuity between sunroof switch harness connector and ground.

Sunroof switch			Continuity
Connector	Terminal		
R16	2	Ground	Not existed
	3		
	4		
	5		

Is the inspection result normal?

YES >> Replace sunroof motor assembly. Refer to RF-53, "Removal and Installation"
NO >> Repair or replace harness.

3.CHECK SUNROOF SWITCH GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between sunroof switch harness connector and ground.

Sunroof switch		Ground	Continuity
Connector	Terminal		
R16	1		Existed

Is the inspection result normal?

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

4.CHECK SUNROOF SWITCH

Check sunroof switch.
Refer to RF-33, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".
NO >> Replace sunroof switch. Refer to RF-64, "Removal and Installation".

Component Inspection

INFOID:0000000010735412

SUNROOF SWITCH

1.CHECK SUNROOF SWITCH

1. Turn ignition switch OFF.
2. Disconnect sunroof switch connector.
3. Check continuity sunroof switch terminals under the following conditions.

Terminals		Condition	Continuity
2	1	Sunroof switch is operated OPEN (2nd) or CLOSE (2nd)	Existed
		Other than above	Not existed
3		Sunroof switch is operated OPEN (1st) or OPEN (2nd)	Existed
		Other than above	Not existed
4		Sunroof switch is operated CLOSE (1st) or CLOSE (2nd)	Existed
		Other than above	Not existed
5		Sunroof switch is operated PUSH	Existed
		Other than above	Not existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace sunroof switch. Refer to RF-64, "Removal and Installation".

SYMPTOM DIAGNOSIS

SUNROOF AND SUNSHADE DOES NOT OPERATE PROPERLY

Description

INFOID:0000000010735413

Sunroof and sunshade does not operate normally.
- Sunroof tilt up/down, open/close or sunshade open/close does not operate.
- Sunroof tilt up/down, open/close or sunshade open/close operation is slow.
- Judder occurs during open/close operation of sunroof and sunshade.

Diagnosis Procedure

INFOID:0000000010735414

1.CHECK GLASS LID

Check the following items.
- Cracks, damage, or deformation of weather-strip.
- Sticking of weather-strip.
- Loose or missing glass lid mounting blot.
- Misalignment of glass lid.
  Refer to RF-47, "Adjustment".

Is the inspection result normal?

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

2.CHECK SUNROOF UNIT ASSEMBLY

Check the following items.
- Damage, deformation or trapped foreign material of slide rail.
- Insufficient application of grease to sliding section of slide rail.

Is the inspection result normal?

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

3.CHECK SUNSHADE

Check sunshade for damage, deformation, of interference with other parts.
Refer to RF-60, "Removal and Installation".

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace the malfunctioning parts.

4.CHECK BCM POWER SUPPLY AND GROUND CIRCUIT

Check BCM power supply and ground circuit.
Refer to BCS-114, "Diagnosis Procedure"

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace the malfunctioning parts.

5.CHECK SUNROOF MOTOR ASSEMBLY POWER SUPPLY AND GROUND CIRCUIT

Check sunroof motor assembly power supply and ground circuit.
Refer to RF-26, "SUNROOF MOTOR ASSEMBLY : Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace the malfunctioning parts.

6.CHECK SUNROOF SWITCH

Check sunroof switch.
Refer to RF-32, "Component Function Check".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace the malfunctioning parts.

SUNSHADE DOES NOT OPERATE PROPERLY

Description

INFOID:0000000010735415

Sunshade does not operate normally.
- Sunshade open/close does not operate.
- Sunshade open/close operation is slow.
- Judder occurs during open/close operation of sunshade.

Diagnosis Procedure

INFOID:0000000010735416

1.CHECK SUNSHADE

Check sunshade for damage, deformation, of interference with other parts.
Refer to RF-60, "Removal and Installation".

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-28, "SUNSHADE MOTOR ASSEMBLY : Diagnosis Procedure".

Is the inspection result normal?

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

3.CHECK COMMUNICATION CIRCUIT

Check communication circuit.
Refer to RF-30, "Component Function Check".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".
NO >> Repair or replace the malfunctioning parts.

AUTO OPERATION DOES NOT OPERATE

SUNROOF

SUNROOF : Description

INFOID:0000000010735417

Auto operation does not operate
- Auto operation of sunroof does not operate.
- Sunroof stops halfway. (Without comport position)
- Anti-pinch function operates.

SUNROOF : Diagnosis Procedure

INFOID:0000000010735418

1.CHECK GLASS LID

Check the following items.
- Cracks, damage, or deformation of weather-strip.
- Sticking of weather-strip.
- Loose or missing glass lid mounting blot.
- Misalignment of glass lid.
  Refer to RF-47, "Adjustment".

Is the inspection result normal?

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

2.CHECK WIND DEFLECTOR

Check wind deflector for deformation and interference.
Refer to RF-63, "Removal and Installation".

Is the inspection result normal?

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

3.CHECK SUNROOF UNIT ASSEMBLY

Check the following items.
- Damage, deformation or trapped foreign material of slide rail.
- Insufficient application of grease to sliding section of slide rail.

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace the malfunctioning parts.

4.PERFORM INITIALIZATION PROCEDURE

Initialization procedure is executed and operation is confirmed.
Refer to RF-24, "Description".

Is the inspection result normal?

YES >> INSPECTION END
NO >> GO TO 5.

5.CHECK VEHICLE SPEED SIGNAL CIRCUIT

Check vehicle speed signal circuit.
Refer to RF-31, "Component Function Check".

Is the inspection result normal?

YES >> Replace sunroof motor assembly. Refer to RF-53, "Removal and Installation".
NO >> Repair or replace the malfunctioning parts.

SUNSHADE

SUNSHADE : Description

INFOID:0000000010735419

Auto operation does not operate
- Auto operation of sunshade does not operate.

- Sunshade stops halfway.
- Anti-pinch function operates.

SUNSHADE : Diagnosis Procedure

INFOID:0000000010735420

1.CHECK SUNSHADE

Check sunshade for damage, deformation, of interference with other parts.
Refer to RF-60, "Removal and Installation".

Is the inspection result normal?

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

2.PERFORM INITIALIZATION PROCEDURE

Initialization procedure is executed and operation is confirmed.
Refer to RF-24, "Description".

Is the inspection result normal?

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

3.CHECK COMMUNICATION CIRCUIT

Check communication circuit.
Refer to RF-30, "Component Function Check".

Is the inspection result normal?

YES >> Replace sunshade motor assembly. Refer to RF-55, "Removal and Installation".
NO >> Repair or replace the malfunctioning parts.

ANTI-PINCH FUNCTION DOES NOT OPERATE

SUNROOF

SUNROOF : Diagnosis Procedure

INFOID:0000000010735421

1.PERFORM INITIALIZATION PROCEDURE

Perform initialization procedure.
Refer to RF-24, "Description".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace sunroof motor assembly. Refer to RF-53, "Removal and Installation".

SUNSHADE

SUNSHADE : Diagnosis Procedure

INFOID:0000000010735422

1.PERFORM INITIALIZATION PROCEDURE

Perform initialization procedure.
Refer to RF-24, "Description".

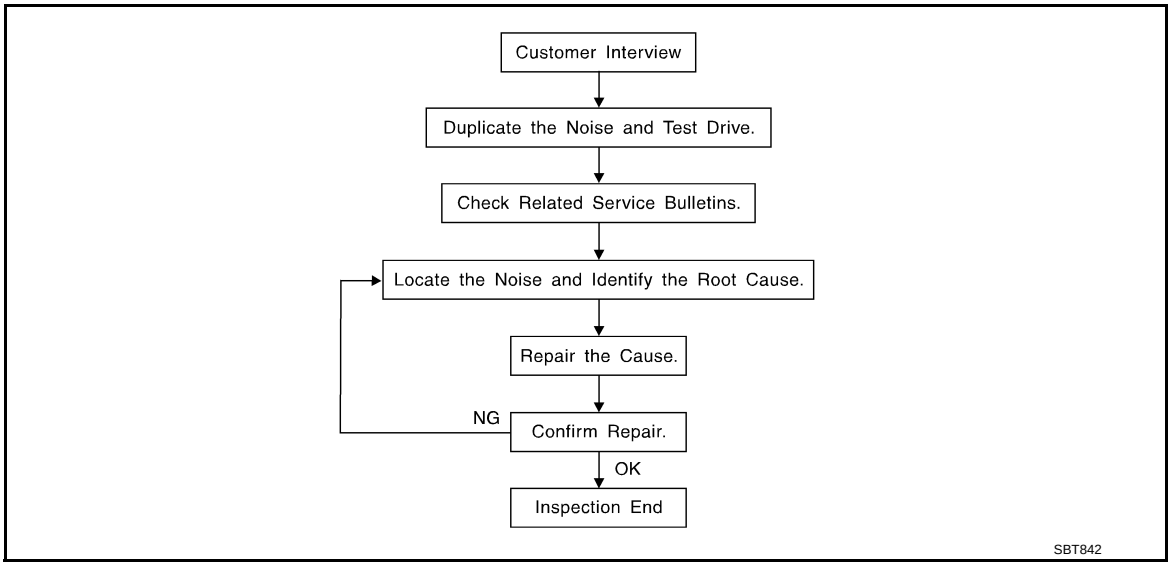
Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace sunshade motor assembly. Refer to RF-55, "Removal and Installation".

SQUEAK AND RATTLE TROUBLE DIAGNOSES

Work Flow

INFOID:0000000010735423



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 of the customer's comments; refer to RF-44, "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 a test drive 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 a technician 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 the repair is reconfirmed.

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 A/T model).
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.

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 (Engine ear or mechanics 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 is are suspected to be the cause of the noise.
  Do not use too much force when removing clips and fasteners, otherwise clips and fastener can be broken or lost during the repair, resulting in the creation of new noise.
- Tapping or pushing/pulling the component that is are suspected to be the cause of 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 by hand by touching the component(s) that is are suspected to be the cause of the noise.
- Placing a piece of paper between components that are suspected to be the cause of the noise.
- Looking for loose components and contact marks.
  Refer to RF-42, "Inspection Procedure".

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. These insulators are available through the authorized Nissan Parts Department.

CAUTION:
Never use excessive force as many components are constructed of plastic and may be damaged.
NOTE:

- URETHANE PADS
  Insulates connectors, harness, etc.
- INSULATOR (Foam blocks)
  Insulates components from contact. Can be used to fill space behind a panel.
- INSULATOR (Light foam block)
- FELT CLOTHTAPE
  Used to insulate where movement does not occur. Ideal for instrument panel applications.
  The following materials, not available through NISSAN Parts Department, can also be used to repair squeaks and rattles.
- UHMW(TEFLON) TAPE
  Insulates where slight movement is present. Ideal for instrument panel applications.
- SILICONE GREASE
  Used in place of UHMW tape that is be visible or does not fit.
  Note: Will only last a few months.
- SILICONE SPRAY
  Used when grease cannot be applied.
- DUCT TAPE
  Used 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.

Inspection Procedure

INFOID:0000000010735424

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 instrument panel
2. Acrylic lens and combination meter housing
3. Instrument panel to front pillar garnish
4. Instrument panel to windshield
5. Instrument panel mounting 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 silicon spray (in hard to reach areas). Urethane pads can be used to insulate wiring harness.

CAUTION:

Never use silicone spray to isolate a squeak or rattle. If the area is saturated with silicone, the recheck of repair becomes impossible.

CENTER CONSOLE

Components to pay attention to include:

1. Shifter 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 following:

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 to repair the noise.

TRUNK

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

1. Trunk lid dumpers out of adjustment
2. Trunk lid striker out of adjustment
3. 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. Sunvisor 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.

SEATS

When isolating seat noise it is important to note the position the seat is in and the load placed on the seat when the noise occurs. 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. 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 mounted to the engine wall
2. Components that pass through the engine wall
3. Engine wall mounts and connectors
4. Loose radiator mounting 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.

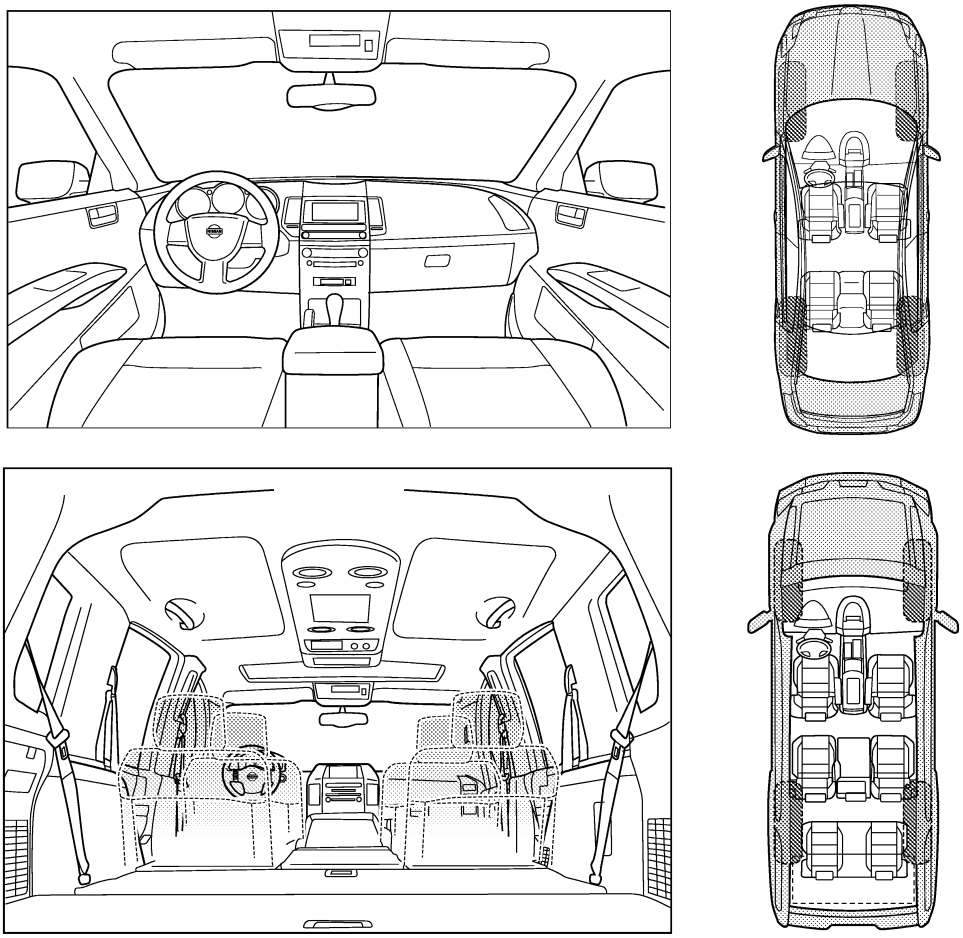
Diagnostic Worksheet

INFOID:0000000010735425

SQUEAK & RATTLE
DIAGNOSTIC WORKSHEET

Dear Nissan Customer:
We are concerned about your satisfaction with your Nissan vehicle. Repairing a squeak or rattle sometimes can be very difficult. To help us fix your Nissan 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.

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.

PIIB8740E

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

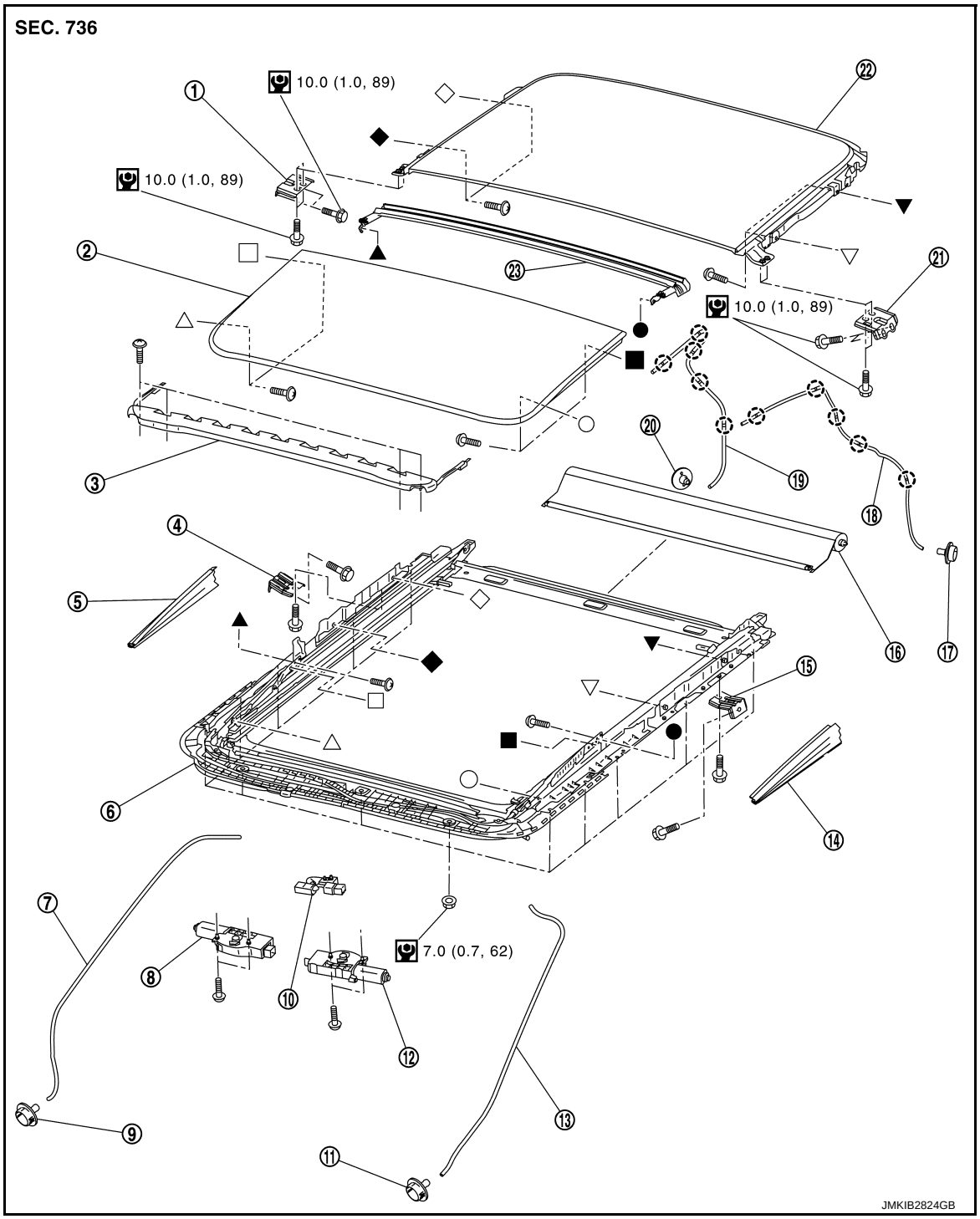
PIIB8742E

REMOVAL AND INSTALLATION

GLASS LID

Exploded View

INFOID:0000000010735426



① Front sunroof bracket RH
② Glass lid
③ Wind deflector
④ Rear sunroof bracket RH
⑤ Side trim RH
⑥ Sunroof unit assembly
⑦ Front drain hose RH
⑧ Sunroof motor assembly
⑨ Front drain connector RH
⑩ Harness connector assembly
⑪ Front drain connector LH
⑫ Sunshade motor assembly

⑬ Front drain hose LH
⑭ Side trim LH
⑮ Rear sunroof bracket LH
⑯ Sunshade
⑰ Rear drain connector LH
⑱ Rear drain hose LH
⑲ Rear drain hose RH
⑳ Rear drain connector RH
㉑ Front sunroof bracket LH
㉒ Rear sunroof glass
㉓ Drain assembly

: Clip

: N·m (kg-m, in-lb)

●, ▲, ■, ▼, ◆, ○, △, □, ▽, ◇: Indicates that the part is connected at points with same symbol in actual vehicle.

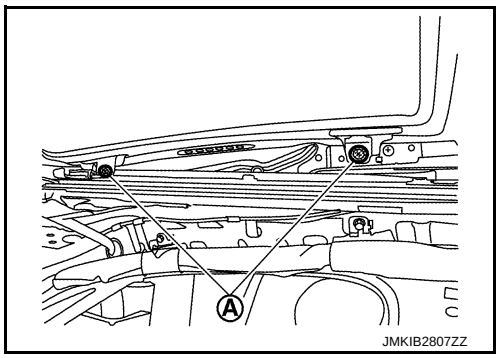
Removal and Installation

INFOID:0000000010735427

REMOVAL

CAUTION:
Always work with a helper.

1. Remove side trim (LH/RH).
2. Remove glass lid fixing screws Ⓐ, and then remove glass lid.



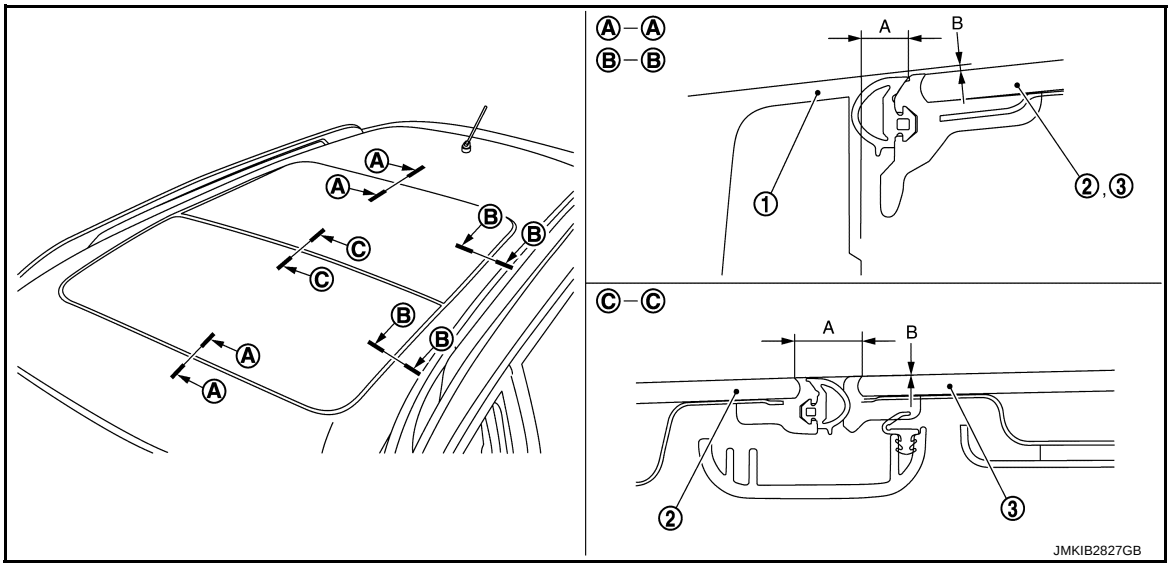
INSTALLATION

Note the following items, and then install in the reverse order of removal.

CAUTION:
After installing the glass lid, perform the leak test and check that there is no malfunction.
NOTE:
After installation, carry out fitting adjustment. Refer to RF-47, "Adjustment".

Adjustment

INFOID:0000000010735428



① Roof panel
② Glass lid
③ Rear sunroof glass

If the clearance and the surface height are out of specification, adjust them according to the procedures shown below.

NOTE:
Dimension (B) is given assuming that the glass upper side status is (+), and the glass lower side status is (–) relative to the roof panel.

Portion	A	B
Ⓐ – Ⓐ	**6.5 – 8.1 mm (0.256 – 0.319 in)**	**(–2.2) – (+0.8) mm [(–0.087) – (+0.031) in]**
Ⓑ – Ⓑ	**6.5 – 8.1 mm (0.256 – 0.319 in)**	**(–2.2) – (+0.8) mm [(–0.087) – (+0.031) in]**
Ⓒ – Ⓒ	**6.5 – 8.1 mm (0.256 – 0.319 in)**	**(–1.5) – (+1.5) mm [(–0.059) – (+0.059) in]**

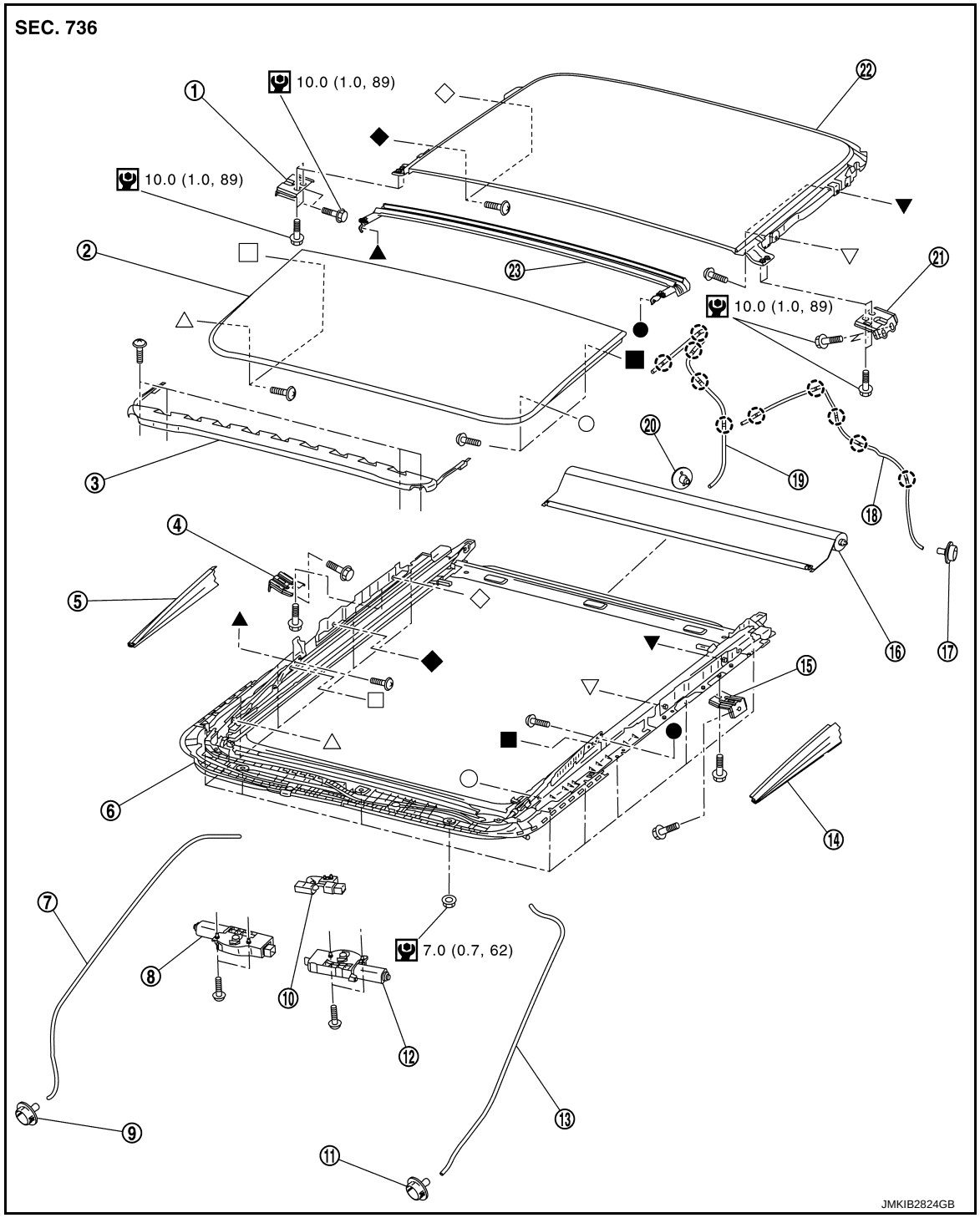
1. Loosen glass lid mounting fixing screws.
2. Adjust the clearance of glass lid and roof panel according to the fitting standard dimension.
3. To prevent glass lid from moving after adjustment, first tighten the fixing screws of front left, and then tighten the screws of rear right.
4. Tilt glass lid up and down several times to check that it moves smoothly.

NOTE:
After adjustment the sunroof unit assembly, perform additional service. Refer to RF-24, "Work Procedure".

REAR SUNROOF GLASS

Exploded View

INFOID:0000000010735429



① Front sunroof bracket RH	② Glass lid	③ Wind deflector
④ Rear sunroof bracket RH	⑤ Side trim RH	⑥ Sunroof unit assembly
⑦ Front drain hose RH	⑧ Sunroof motor assembly	⑨ Front drain connector RH
⑩ Harness connector assembly	⑪ Front drain connector LH	⑫ Sunshade motor assembly
⑬ Front drain hose LH	⑭ Side trim LH	⑮ Rear sunroof bracket LH
⑯ Sunshade	⑰ Rear drain connector LH	⑱ Rear drain hose LH

⑲ Rear drain hose RH
⑳ Rear drain connector RH
㉑ Front sunroof bracket LH
㉒ Rear sunroof glass
㉓ Drain assembly
: Clip
: N·m (kg-m, in-lb)
●, ▲, ■, ▼, ◆, ○, △, □, ▽, ◇: Indicates that the part is connected at points with same symbol in actual vehicle.

Removal and Installation

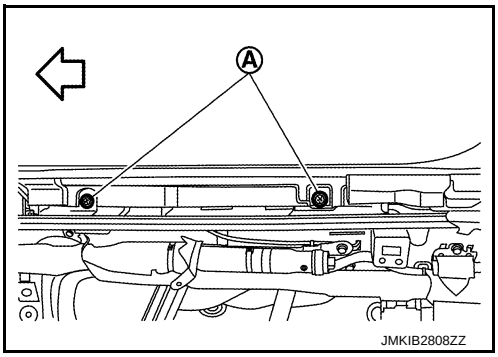
INFOID:0000000010735430

REMOVAL

CAUTION:
Always work with a helper.

1. Remove sunroof unit assembly. Refer to RF-57, "Removal and Installation".
2. Remove rear sunroof glass fixing screws Ⓐ, and then remove rear sunroof glass.

: Vehicle front



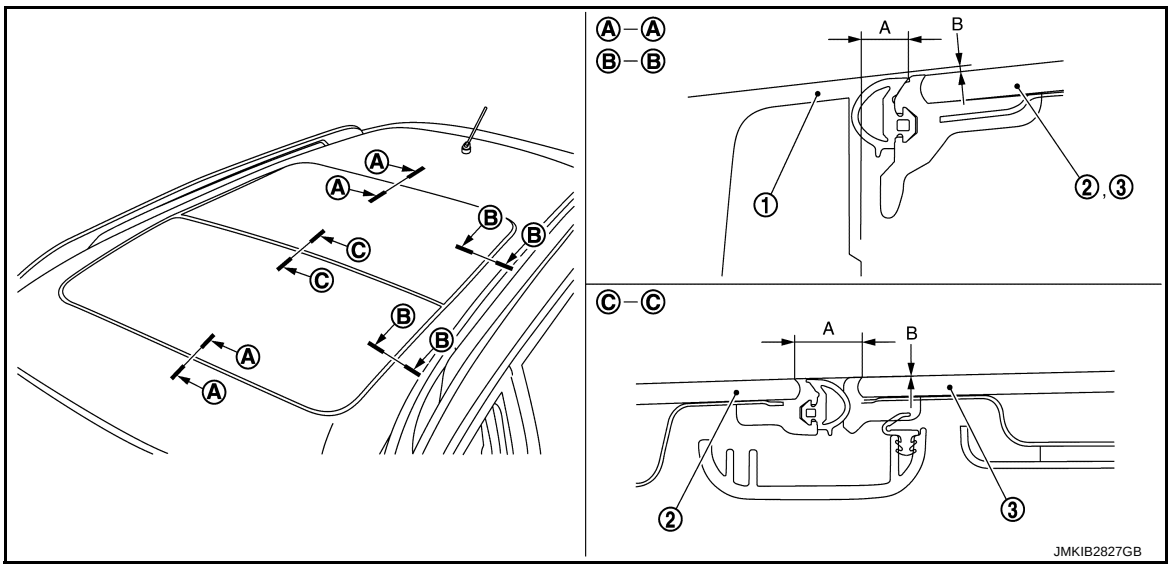
INSTALLATION

Note the following items, and then install in the reverse order of removal.

CAUTION:
After installing the rear sunroof glass, perform the leak test and check that there is no malfunction.
NOTE:
After installation, carry out fitting adjustment. Refer to RF-50, "Adjustment".

Adjustment

INFOID:0000000010735431



① Roof panel
② Glass lid
③ Rear sunroof glass

If the clearance and the surface height are out of specification, adjust them according to the procedures shown below.
NOTE:
Dimension (B) is given assuming that the glass upper side status is (+), and the glass lower side status is (–) relative to the roof panel.

Portion	A	B
Ⓐ – Ⓐ	6.5 – 8.1 mm (0.256 – 0.319 in)	(–2.2) – (+0.8) mm [(–0.087) – (+0.031) in]
Ⓑ – Ⓑ	6.5 – 8.1 mm (0.256 – 0.319 in)	(–2.2) – (+0.8) mm [(–0.087) – (+0.031) in]
Ⓒ – Ⓒ	6.5 – 8.1 mm (0.256 – 0.319 in)	(–1.5) – (+1.5) mm [(–0.059) – (+0.059) in]

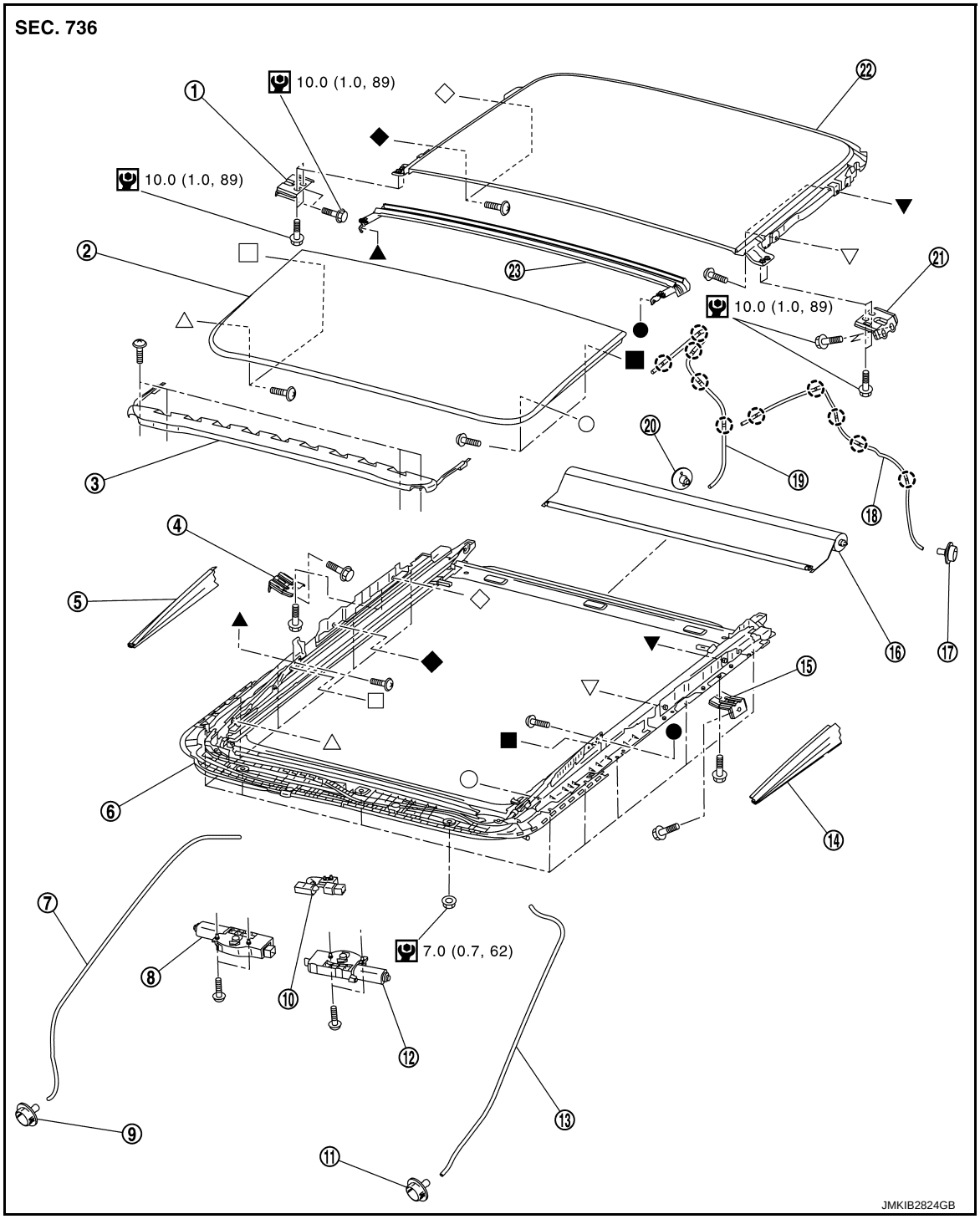
1. Loosen rear sunroof glass fixing screws.
2. Adjust the clearance of rear sunroof glass and roof panel according to the fitting standard dimension.
3. To prevent rear sunroof glass from moving after adjustment, first tighten the fixing screws of front left, and then tighten the fixing screws of rear right.
4. Tighten remaining fixing screws, being careful to prevent rear sunroof glass from moving.

NOTE:
After adjustment the sunroof unit assembly, perform additional service. Refer to RF-24, "Work Procedure".

SUNROOF MOTOR ASSEMBLY

Exploded View

INFOID:0000000010735432



① Front sunroof bracket RH	② Glass lid	③ Wind deflector
④ Rear sunroof bracket RH	⑤ Side trim RH	⑥ Sunroof unit assembly
⑦ Front drain hose RH	⑧ Sunroof motor assembly	⑨ Front drain connector RH
⑩ Harness connector assembly	⑪ Front drain connector LH	⑫ Sunshade motor assembly
⑬ Front drain hose LH	⑭ Side trim LH	⑮ Rear sunroof bracket LH
⑯ Sunshade	⑰ Rear drain connector LH	⑱ Rear drain hose LH

⑲ Rear drain hose RH
⑳ Rear drain connector RH
㉑ Front sunroof bracket LH
㉒ Rear sunroof glass
㉓ Drain assembly
: Clip
: N·m (kg-m, in-lb)
●, ▲, ■, ▼, ◆, ○, △, □, ▽, ◇: Indicates that the part is connected at points with same symbol in actual vehicle.

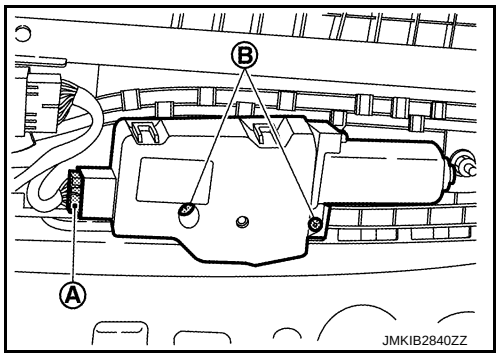
Removal and Installation

INFOID:0000000010735433

REMOVAL

CAUTION:
- **Before removing sunroof motor, check that glass lid is fully closed.**
- **After removing sunroof motor, never attempt to rotate sunroof motor assembly as a single unit.**

1. Disconnect battery cable from negative terminal.
2. Remove headlining to make work space. Refer to INT-37, "Removal and Installation".
3. Disconnect harness connector Ⓐ from sunroof motor assembly.
4. Remove sunroof motor assembly fixing screws Ⓑ, and then remove sunroof motor assembly.



INSTALLATION

CAUTION:
Before installing the sunroof motor assembly, always place the link and wire assembly in the symmetrical and fully closed position.

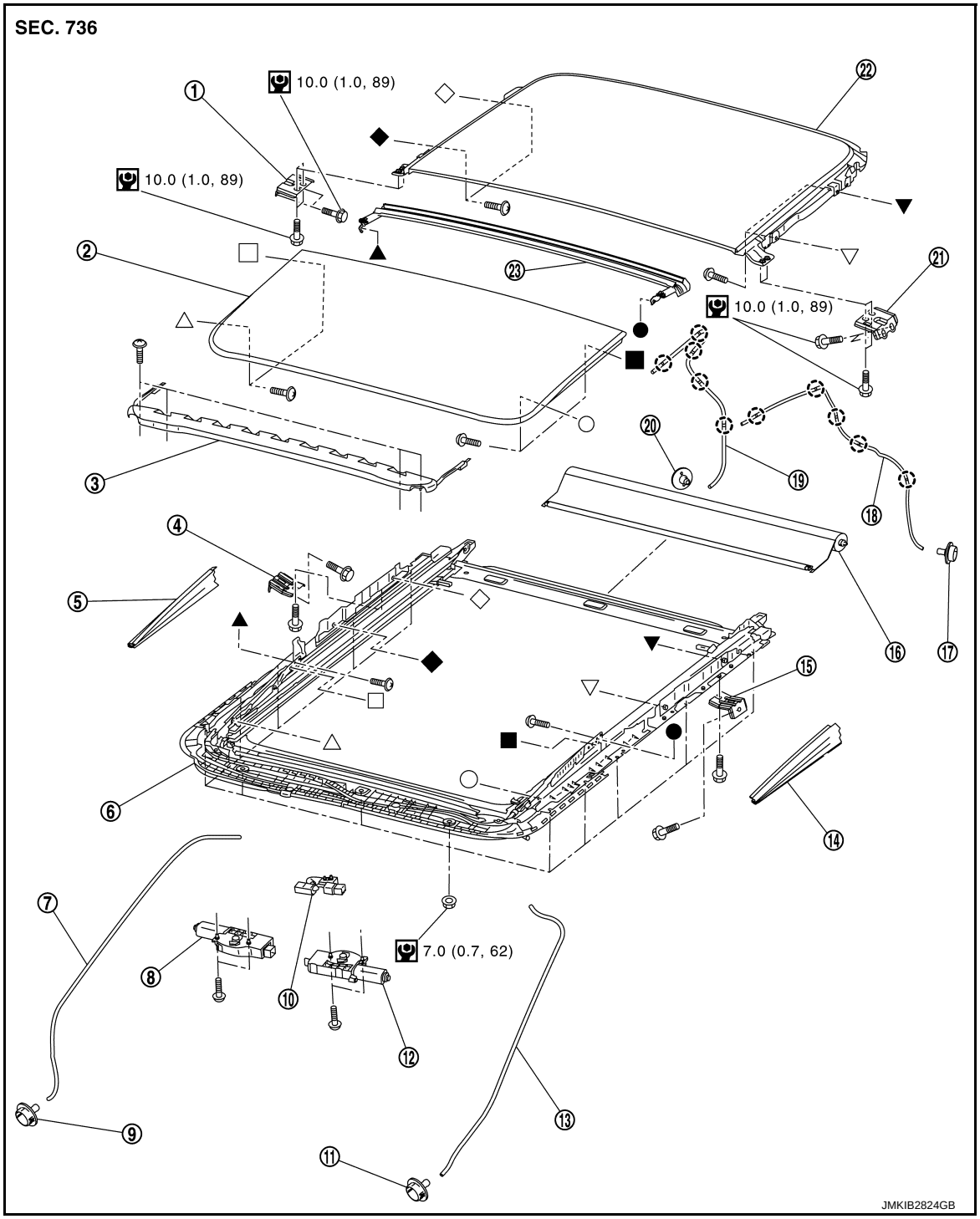
1. Move the sunroof motor assembly laterally a little so that the gear is completely engaged into the wire on the sunroof unit assembly and mounting surface becomes parallel. Then secure the sunroof motor assembly with screws.
2. Install headlining.

NOTE:
After installation sunroof motor assembly, perform additional service. Refer to RF-24, "Description"

SUNSHADE MOTOR ASSEMBLY

Exploded View

INFOID:0000000010735434



① Front sunroof bracket RH	② Glass lid	③ Wind deflector
④ Rear sunroof bracket RH	⑤ Side trim RH	⑥ Sunroof unit assembly
⑦ Front drain hose RH	⑧ Sunroof motor assembly	⑨ Front drain connector RH
⑩ Harness connector assembly	⑪ Front drain connector LH	⑫ Sunshade motor assembly
⑬ Front drain hose LH	⑭ Side trim LH	⑮ Rear sunroof bracket LH
⑯ Sunshade	⑰ Rear drain connector LH	⑱ Rear drain hose LH

⑲ Rear drain hose RH
⑳ Rear drain connector RH
㉑ Front sunroof bracket LH
㉒ Rear sunroof glass
㉓ Drain assembly
: Clip
: N·m (kg-m, in-lb)
●, ▲, ■, ▼, ◆, ○, △, □, ▽, ◇: Indicates that the part is connected at points with same symbol in actual vehicle.

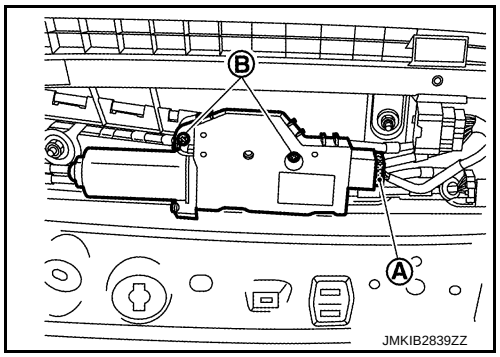
Removal and Installation

INFOID:0000000010735435

REMOVAL

CAUTION:
- **Before removing sunshade motor, check that sunshade is fully opened.**
- **After removing sunshade motor, never attempt to rotate sunshade motor assembly as a single unit.**

1. Disconnect battery cable from negative terminal.
2. Remove headlining to make work space. Refer to INT-37, "Removal and Installation".
3. Disconnect harness connector Ⓐ from sunshade motor assembly.
4. Remove sunshade motor assembly fixing screws Ⓑ, and then remove sunshade motor assembly.



INSTALLATION

CAUTION:
Before installing the sunshade motor assembly, always place the link and wire assembly in the symmetrical and fully opened position.

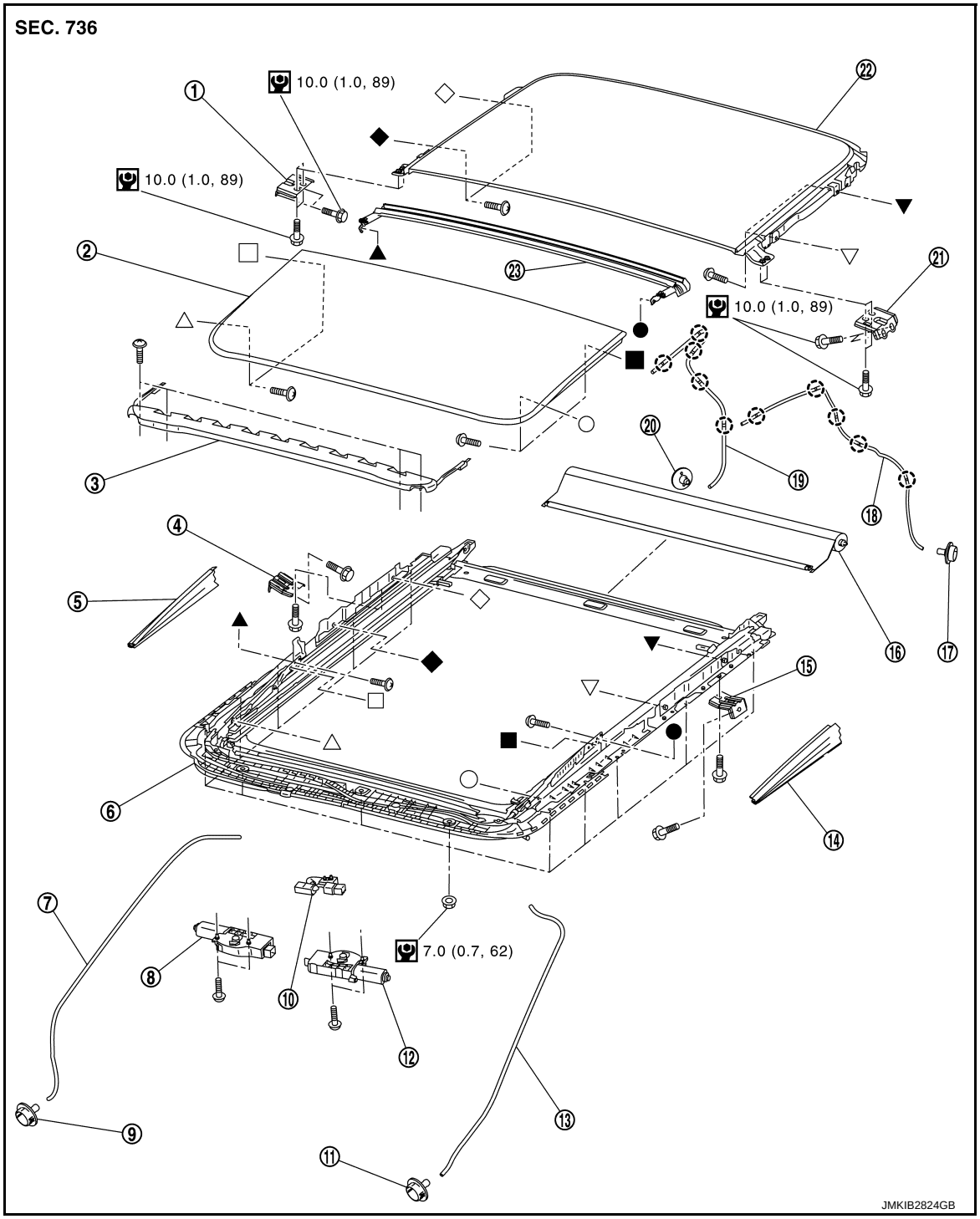
1. Move the sunshade motor assembly laterally a little so that the gear is completely engaged into the wire on the sunroof unit assembly and mounting surface becomes parallel. Then secure the sunshade motor assembly with screws.
2. Install headlining.

NOTE:
After installation sunshade motor assembly, perform additional service. Refer to RF-24, "Description"

SUNROOF UNIT ASSEMBLY

Exploded View

INFOID:0000000010735436



① Front sunroof bracket RH	② Glass lid	③ Wind deflector
④ Rear sunroof bracket RH	⑤ Side trim RH	⑥ Sunroof unit assembly
⑦ Front drain hose RH	⑧ Sunroof motor assembly	⑨ Front drain connector RH
⑩ Harness connector assembly	⑪ Front drain connector LH	⑫ Sunshade motor assembly
⑬ Front drain hose LH	⑭ Side trim LH	⑮ Rear sunroof bracket LH
⑯ Sunshade	⑰ Rear drain connector LH	⑱ Rear drain hose LH

⑲ Rear drain hose RH
⑳ Rear drain connector RH
㉑ Front sunroof bracket LH
㉒ Rear sunroof glass
㉓ Drain assembly
: Clip
: N·m (kg-m, in-lb)
●, ▲, ■, ▼, ◆, ○, △, □, ▽, ◇: Indicates that the part is connected at points with same symbol in actual vehicle.

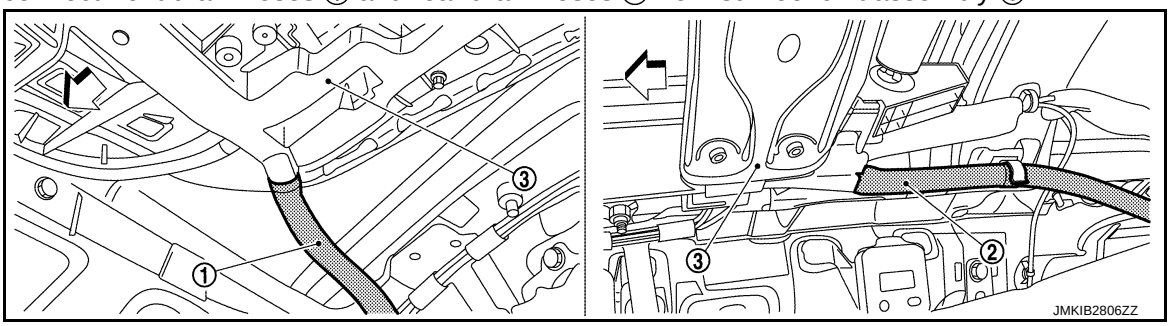
Removal and Installation

INFOID:0000000010735437

REMOVAL

CAUTION:
- **Always work with a helper.**
- **When removing/installing sunroof unit, use cloths to protect the seats and trim from damage.**

1. Remove glass lid. Refer to RF-47, "Removal and Installation".
2. Remove headlining. Refer to INT-37, "Removal and Installation".
3. Disconnect harness connector.
4. Disconnect front drain hoses ① and rear drain hoses ② from sunroof unit assembly ③.



⇦ : Vehicle front

5. Remove front sunroof bracket mounting bolts, and then remove front sunroof brackets.
6. Remove rear sunroof bracket mounting bolts, and then remove rear sunroof brackets.
7. Remove sunroof unit assembly mounting nuts and bolts.
8. Remove sunroof unit assembly from back door opening.

INSTALLATION

1. Temporarily tighten the mounting nuts to the front end and side rail of sunroof unit assembly.
2. Temporarily tighten the mounting bolts to the front sunroof brackets and rear sunroof brackets.
3. Tighten the front end and side rail mounting nuts diagonally in order.
   CAUTION:
   Install sunroof unit assembly evenly without any distortion on sunroof unit assembly.
4. Tighten the mounting bolts to the rear sunroof brackets sunroof unit side, and then tighten the mounting bolts to the rear sunroof brackets vehicle side.
5. Tighten the mounting bolts to the front sunroof brackets.
6. Connect front drain hoses and rear drain hoses.
7. Connect harness connector.
8. Install headlining. Refer to INT-37, "Removal and Installation".
9. Install glass lid. Refer to RF-47, "Removal and Installation".

NOTE:
- After installation, perform fitting adjustment. Refer to RF-47, "Adjustment".
- After installation of sunroof unit assembly, perform additional service. Refer to RF-24, "Description"

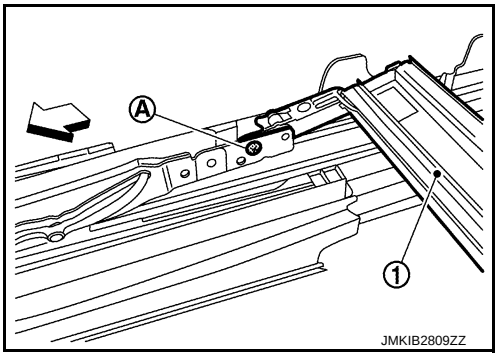
Disassembly and Assembly

INFOID:0000000010735438

DISASSEMBLY

1. Remove sunroof motor assembly. Refer to RF-53, "Removal and Installation".
2. Remove sunshade motor assembly. Refer to RF-55, "Removal and Installation".
3. Remove rear sunroof glass. Refer to RF-50, "Removal and Installation".
4. Remove sunshade. Refer to RF-60, "Removal and Installation".
5. Remove wind deflector. Refer to RF-63, "Removal and Installation".
6. Remove rear drain assembly ① fixing screws Ⓐ, and then remove rear drain assembly.

⇦ : Vehicle front



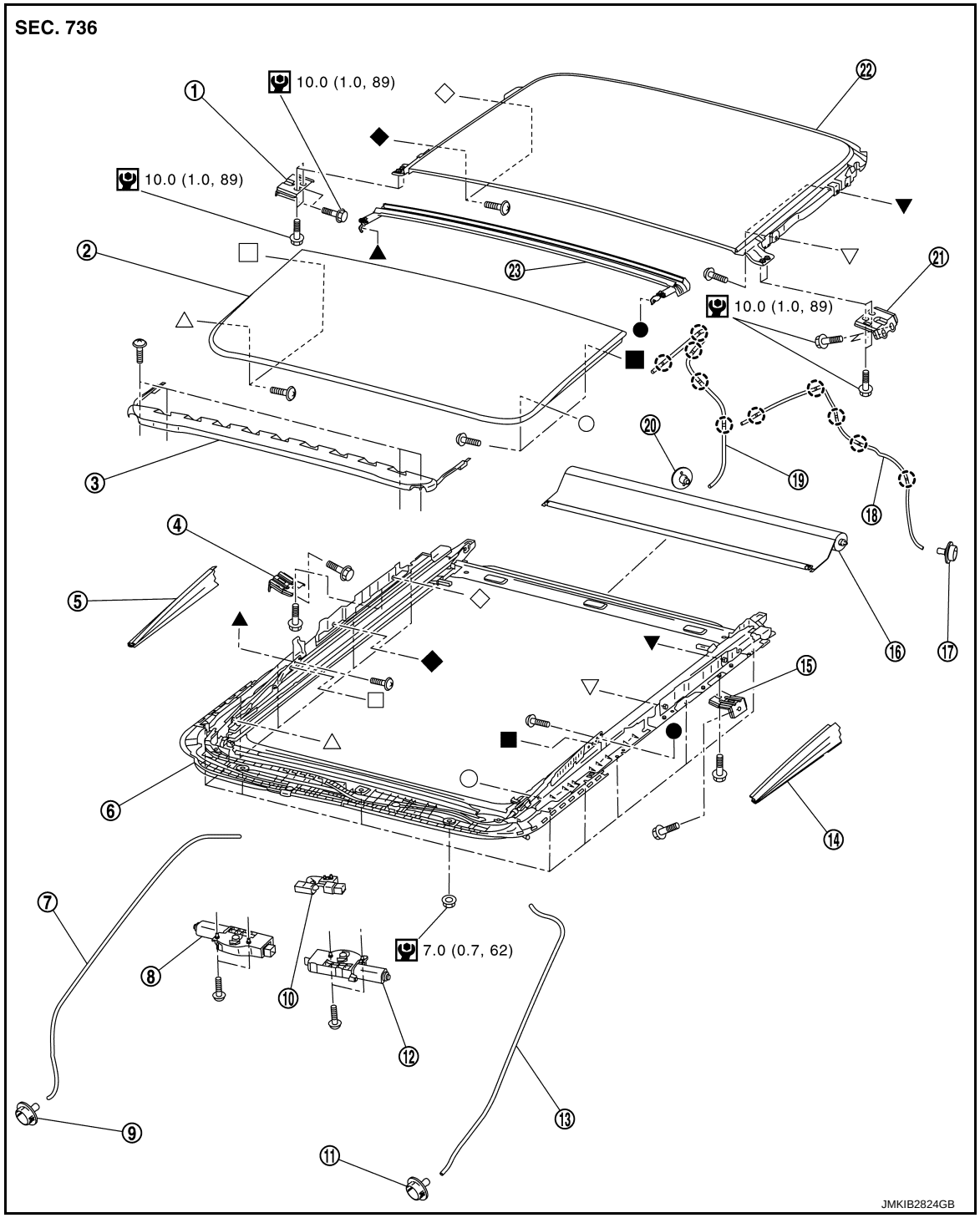
ASSEMBLY

Assemble in the reverse order of disassembly.

SUNSHADE

Exploded View

INFOID:0000000010735439



① Front sunroof bracket RH	② Glass lid	③ Wind deflector
④ Rear sunroof bracket RH	⑤ Side trim RH	⑥ Sunroof unit assembly
⑦ Front drain hose RH	⑧ Sunroof motor assembly	⑨ Front drain connector RH
⑩ Harness connector assembly	⑪ Front drain connector LH	⑫ Sunshade motor assembly
⑬ Front drain hose LH	⑭ Side trim LH	⑮ Rear sunroof bracket LH
⑯ Sunshade	⑰ Rear drain connector LH	⑱ Rear drain hose LH

⑲ Rear drain hose RH
⑳ Rear drain connector RH
㉑ Front sunroof bracket LH
㉒ Rear sunroof glass
㉓ Drain assembly
: Clip
: N·m (kg-m, in-lb)
●, ▲, ■, ▼, ◆, ○, △, □, ▽, ◇: Indicates that the part is connected at points with same symbol in actual vehicle.

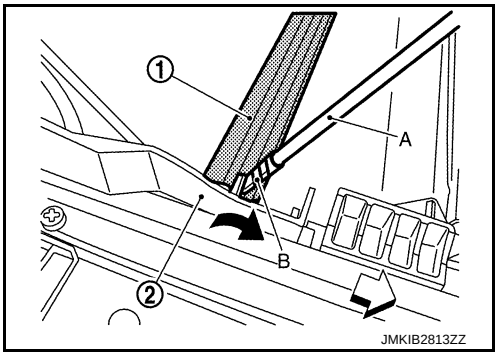
Removal and Installation

INFOID:0000000010735440

REMOVAL

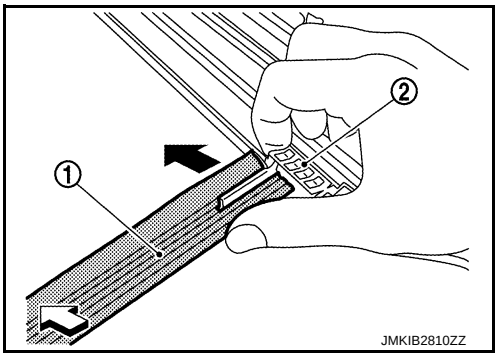
1. Remove sunroof unit assembly. Refer to RF-57, "Removal and Installation".
2. Remove rear sunroof glass. Refer to RF-50, "Removal and Installation".
3. Disengage sunshade stay ① using a remover tool (A) from sunroof unit assembly ②.
   CAUTION:
   Apply protective tape (B) on remover tool to protect from damage.

   ⇦ : Vehicle front

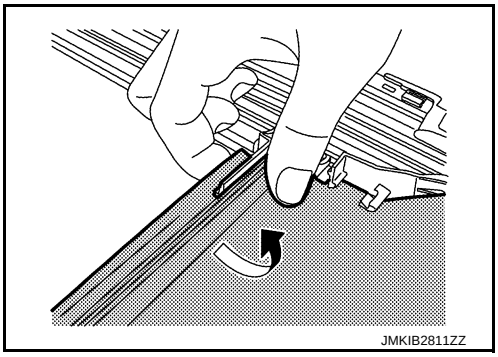


4. Push sunshade stay ① as shown by the arrows in the figure, and then disengage sunshade stay from sunroof unit assembly ②.

   ⇦ : Vehicle front

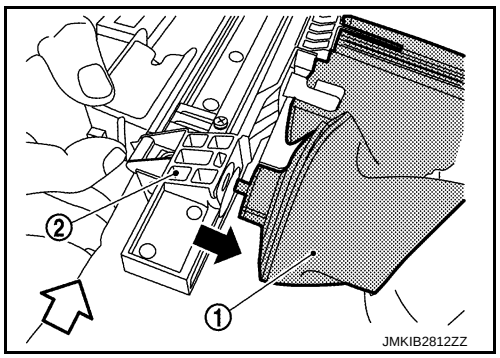


5. Rotate sunshade as shown by the arrows in the figure, and then remove sunshade stay from sunroof unit assembly.



6. Pull sunshade ① as shown by the arrows in the figure, and then remove sun shade from sunroof unit assembly ②.

⇦ : Vehicle front



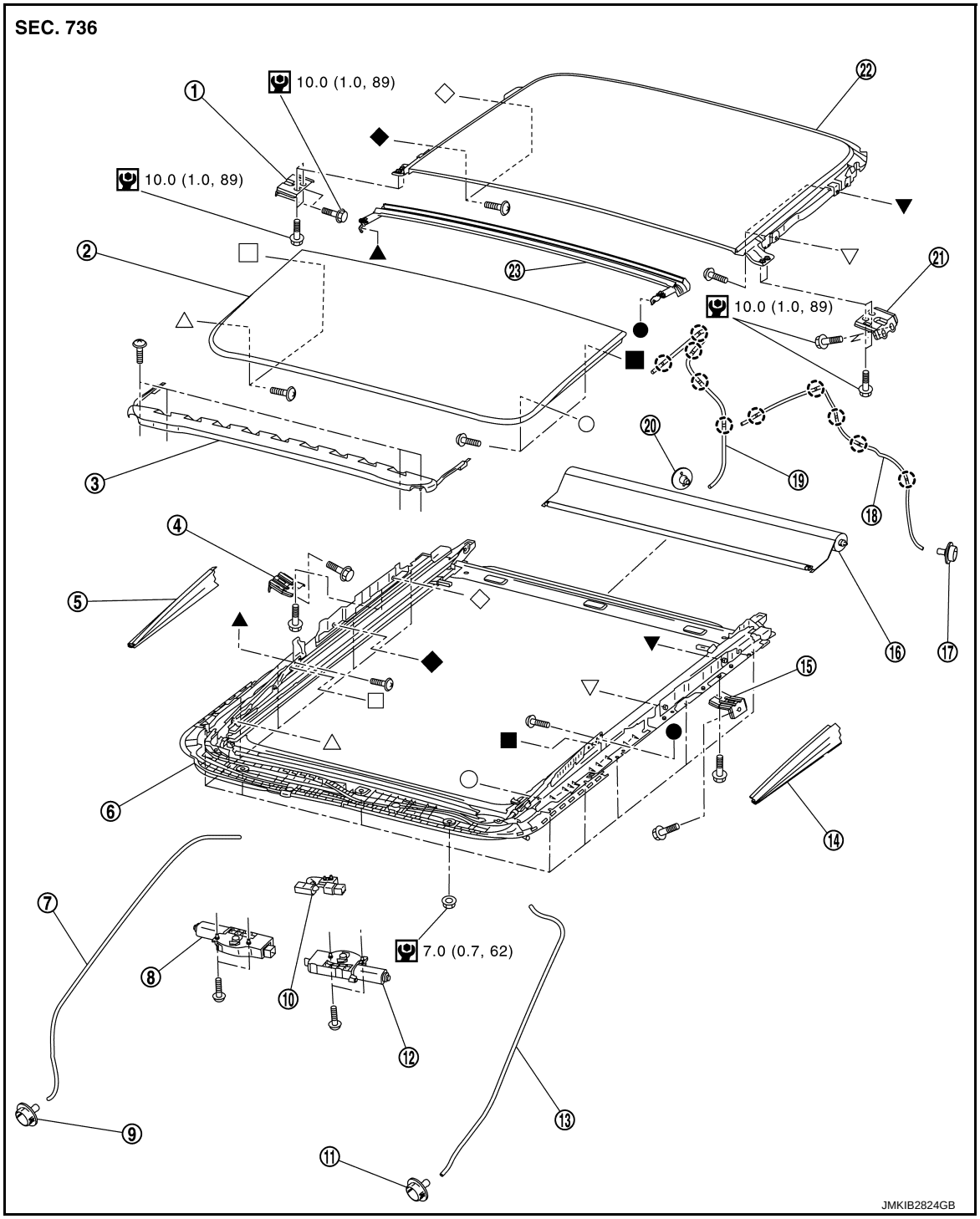
INSTALLATION

Install in the reverse order of removal.

WIND DEFLECTOR

Exploded View

INFOID:0000000010735441



① Front sunroof bracket RH	② Glass lid	③ Wind deflector
④ Rear sunroof bracket RH	⑤ Side trim RH	⑥ Sunroof unit assembly
⑦ Front drain hose RH	⑧ Sunroof motor assembly	⑨ Front drain connector RH
⑩ Harness connector assembly	⑪ Front drain connector LH	⑫ Sunshade motor assembly
⑬ Front drain hose LH	⑭ Side trim LH	⑮ Rear sunroof bracket LH
⑯ Sunshade	⑰ Rear drain connector LH	⑱ Rear drain hose LH

⑲ Rear drain hose RH
⑳ Rear drain connector RH
㉑ Front sunroof bracket LH
㉒ Rear sunroof glass
㉓ Drain assembly
: Clip
: N·m (kg-m, in-lb)
●, ▲, ■, ▼, ◆, ○, △, □, ▽, ◇: Indicates that the part is connected at points with same symbol in actual vehicle.

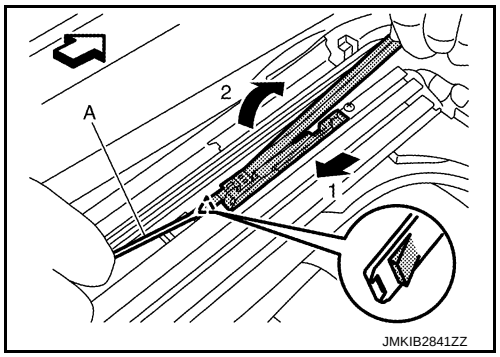
Removal and Installation

INFOID:0000000010735442

REMOVAL

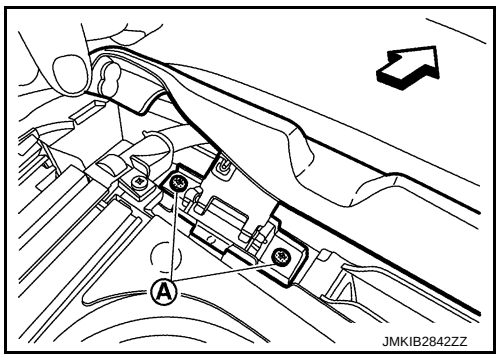
1. Fully open the glass lid.
2. Disengage wind deflector fixing pawl using a remover tool (A) according to the numerical order 1→2 as shown in the figure.

: Pawl
: Vehicle front



3. Remove wind deflector fixing screws Ⓐ, and then remove wind deflector from sunroof unit assembly.

: Vehicle front



INSTALLATION

Install in the reverse order of removal.

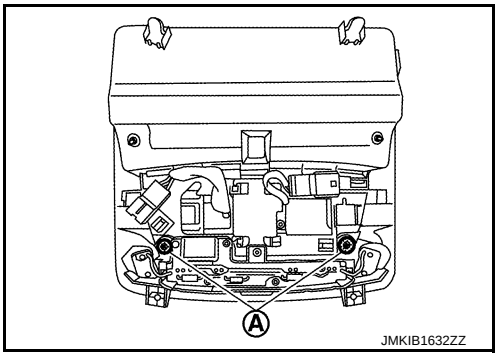
SUNROOF SWITCH

Removal and Installation

INFOID:0000000010735443

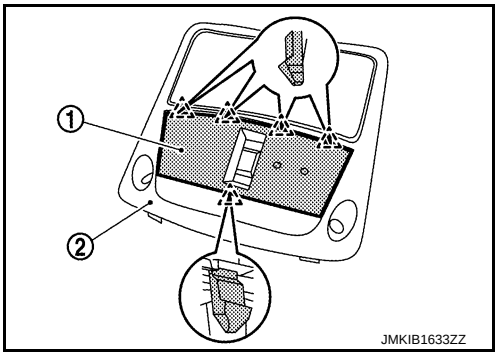
Removal

1. Remove map lamp assembly. Refer to INL-76, "MAP LAMP : Removal and Installation".
2. Remove the screws Ⓐ from map lamp assembly.



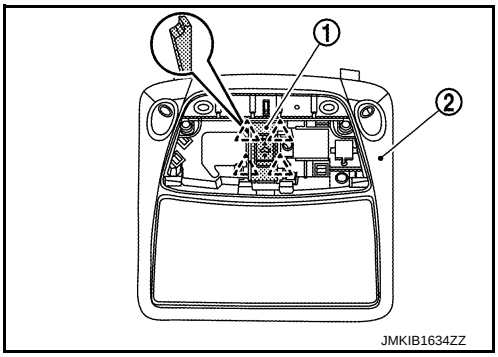
3. Disengage fixing pawls and remove map lamp finisher ① from map lamp assembly ②.

△ :Pawl



4. Disengage fixing pawls and remove sunroof switch ① from map lamp assembly ②.

△ :Pawl



Installation

Install in the reverse order of removal.