SECTION RF
ROOF

CONTENTS

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000008279731

DETAILED FLOW

1.OBTAIN INFORMATION ABOUT SYMPTOM

Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred) as much as possible when the customer brings the vehicles in.

>> GO TO 2.

2.REPRODUCE THE MALFUNCTION INFORMATION

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. Then identify where to start performing the diagnosis based on possible causes and symptom.

>> GO TO 4.

4.IDENTIFY MALFUNCTIONING PARTS WITH “COMPONENT DIAGNOSIS”

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 2.

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL

ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Description

INFOID:0000000008279732

MEMORY RESET PROCEDURE

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

ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Special Repair Requirement

INFOID:0000000008279733

INTERRUPTION DETECTION FUNCTION

The CPU of sunroof motor monitors the sunroof motor operation and the sunroof position (fully-closed or other) by the signals from sunroof motor.
When sunroof motor detects an interruption during the following sliding close operation, sunroof switch controls the motor for open and the sunroof will operate until full open position.
- automatic close operation when ignition switch is in the ON position.
- automatic close operation during retained power operation.

INITIALIZATION PROCEDURE

If the sunroof does no close or open automatically, use the following procedure to return sunroof operation to normal.
1. Close the sunroof if it is not in the closed position. It may be necessary to repeatedly push the switch to close the sunroof.
2. Press and hold the TILT UP switch the sunroof will tilt up. Release the button.
3. Press and hold the TILT UP switch again. Do not release the switch, keep pressure on it. After 4 seconds of depressing, the sunroof will full close.
4. Initializing procedure is complete. Confirm proper operation of the sunroof (slide open, slide close, tilt up, tilt down.)

ANTI-PINCH FUNCTION

1. Full open the sunroof.
2. Place a piece of wood near fully closed position.
3. Close the sunroof completely with auto-slide close.

Check that sunroof lowers for approximately 210 mm (8.26 in) with out pinching a piece of wood and stops.

CAUTION:
- **Check that auto-slide operates before inspection when system initialization is performed.**
- **Depending on environment and driving conditions, if a similar impact or lord is applied to the sunroof it may lower.**
- **Do not check with hands and other part of body because they may be pinched. Do not get pinched.**
- **Perform initial setting when auto-slide operation or anti-pinch function does not operate normally.**

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description

INFOID:0000000008279734

Refer to RF-4, "ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Description".

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement

INFOID:0000000008279735

Refer to RF-4, "ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Special Repair Requirement" for initialization procedure and check anti-pinch function.

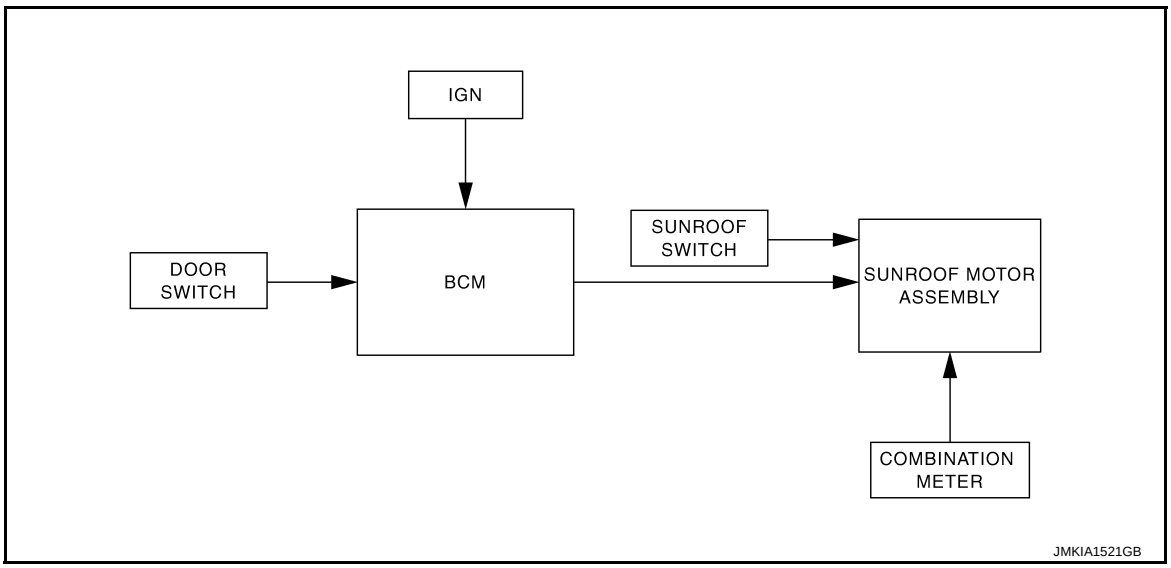
SYSTEM DESCRIPTION

SUNROOF SYSTEM

System Diagram

INFOID:0000000008279736

SUNROOF SYSTEM



System Description

INFOID:0000000008279737

SUNROOF SYSTEM

INPUT/OUTPUT SIGNAL CHART

Item	Input signal to sunroof motor assembly	Sunroof motor function	Actuator
Sunroof switch	Sunroof switch signal (tilt down or slide open)	Sunroof control	Sunroof motor
	Sunroof switch signal (tilt up or slide close)		
BCM	Retained power signal		
Combination meter	Vehicle speed signal		

SUNROOF OPERATION

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

AUTO OPERATION

Sunroof AUTO feature makes it possible to slide open and slide close or tilt up and tilt down the sunroof without holding the sunroof switch in the slide open/tilt down or slide close/tilt up position.

ANTI-PINCH FUNCTION

The CPU of sunroof motor assembly monitors the sunroof motor operation and the sunroof position (fully-closed or other) by the signals from sunroof motor.
When sunroof motor detects an interruption during the following slide close and tilt down operation, sunroof switch controls the motor for open and the sunroof will operate until full up position (when tilt down operate) or 210 mm (8.26 in) or more in an open direction (when slide close operate):

- Close operation and tilt down when ignition switch is in the “ON” position.

RETAINED POWER OPERATION

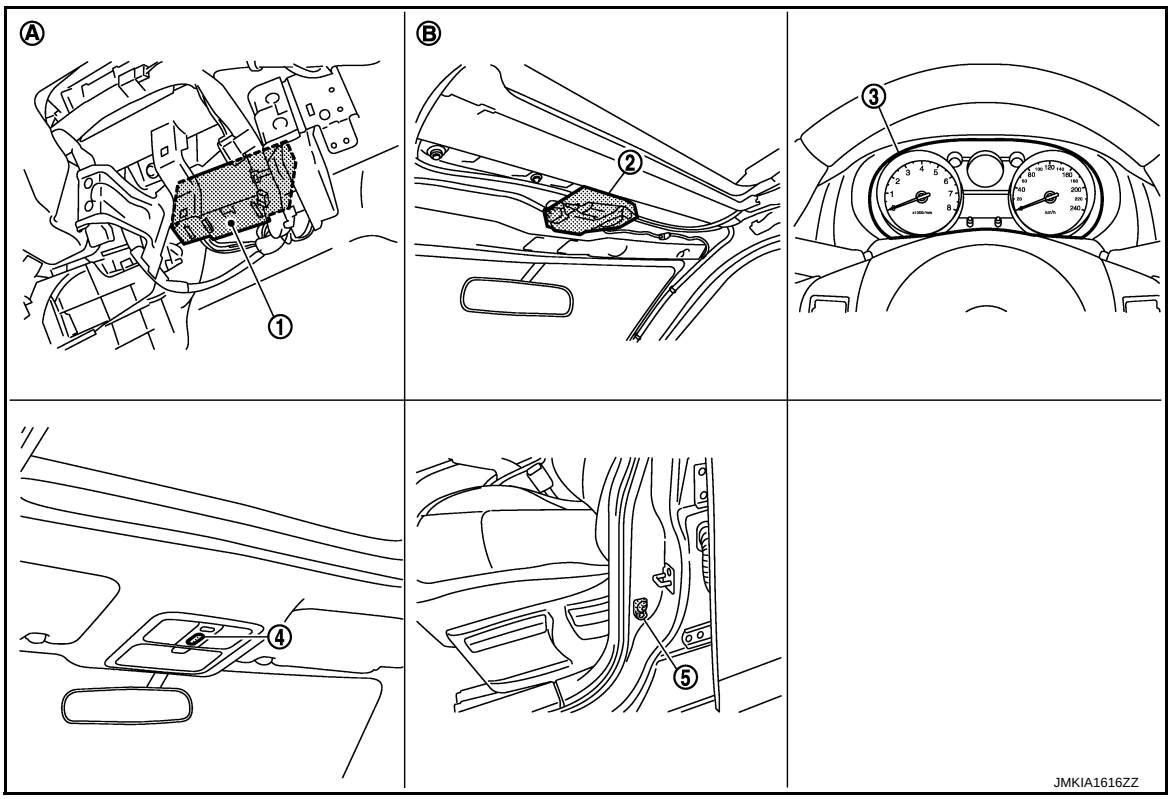
Retained power operation is an additional power supply function that enables sunroof system to operate for 45 seconds when ignition switch is turned OFF.

RETAINED POWER FUNCTION CANCEL CONDITIONS

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

Component Parts Location

INFOID:0000000008279738



1.	BCM M65, M66, M67	2.	Sunroof motor assembly R5	3.	Combination meter M34
4.	Sunroof switch R6	5.	Front door switch(driver side) B34		

A. Over the glove box B. View with headlining removed

Component Description

INFOID:0000000008279739

Component	Function
BCM	• Supplies the power supply to sunroof motor assembly. • Controls retained power.
Sunroof switch	Transmits tilt up/down & slides open/close operation signal to sunroof motor assembly.
Sunroof motor assembly	It is sunroof motor and CPU integrated type that enables tilt up/down & slide open/close by sunroof switch operation
Combination meter	Transmits vehicle speed signal to sunroof motor assembly.
Front door switch (driver side)	Detects door open/close condition and transmits to BCM.

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

INFOID:0000000008279740

APPLICATION ITEM
CONSULT can display each diagnostic item using the diagnostic test modes shown following.

Diagnosis mode	Function description
ECU Identification	BCM part number is displayed.
Self-Diagnostic Result	Displays the diagnosis results judged by BCM. Refer to RF-36, "DTC Index".
Data Monitor	BCM input/output signals are displayed.
Active Test	The signals used to activate each device are forcibly supplied from BCM.
Work Support	Changes the setting for each system function.
Configuration	• Read and save the vehicle specification. • Write the vehicle specification when replacing BCM.
CAN Diag Support Monitor	Monitors the reception status of CAN communication viewed from BCM.

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

NOTE:

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

×: Applicable item

System	CONSULT sub system selection item	Diagnosis mode		
		Work Support	Data Monitor	Active Test
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	×
Warning chime	BUZZER		×	×
Interior room lamp control	INT LAMP	×	×	×
Remote keyless entry system	MULTI REMOTE ENT	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER		×	×
• Auto air conditioning system • Manual air conditioning system	AIR CONDITONER		×	
Intelligent Key system	INTELLIGENT KEY		×	
Combination switch	COMB SW		×	
Body control system	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		×	×
—	FUEL LID*			
TPMS	AIR PRESSURE MONITOR	×	×	×
Panic alarm system	PANIC ALARM			×

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

RETAIND PWR

RETAIND PWR : CONSULT Function (BCM - RETAINED PWR)

INFOID:0000000008279741

Data monitor

Monitor Item	Description
DOOR SW-DR	Indicates [ON/OFF] condition of driver side door switch.
DOOR SW-AS	Indicates [ON/OFF] condition of passenger side door switch.

DTC/CIRCUIT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT

BCM (BODY CONTROL MODULE)

BCM (BODY CONTROL MODULE) : Diagnosis Procedure

INFOID:0000000008279742

1.CHECK FUSES AND FUSIBLE LINK

Check that the following fuses and fusible link are not fusing.

Signal name	Fuses and fusible link No.
Battery power supply	10
	J
ACC power supply	20
Ignition power supply	1

Is the fuse fusing?

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

2.CHECK POWER SUPPLY CIRCUIT

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

Terminals			Ignition switch position		
(+)		(–)			
BCM			OFF	ACC	ON
Connector	Terminal				
M67	70	Ground	Battery voltage	Battery voltage	Battery voltage
	57				
M65	11		Approx. 0 V	Battery voltage	Battery voltage
	38		Approx. 0 V	Approx. 0 V	Battery voltage

Is the measurement value normal?

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

3.CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and the ground.

BCM		Ground	Continuity
Connector	Terminal		
M67	67		Existed

Does continuity exist?

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

SUNROOF MOTOR ASSEMBLY

SUNROOF MOTOR ASSEMBLY : Description

INFOID:0000000008279743

- BCM supplies power.
- It is sunroof motor and CPU integrated type.
- Tilts up/down & slides open/close by sunroof switch operation.

SUNROOF MOTOR ASSEMBLY : Diagnosis Procedure

INFOID:0000000008279744

SUNROOF MOTOR ASSEMBLY

1.CHECK POWER SUPPLY CIRCUIT

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

(+)		(–)	Voltage (V) (Approx.)
Sunroof motor assembly			
Connector	Terminal		
R5	2	Ground	Battery voltage
	4		

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 sunroof motor assembly harness connector and ground.

Sunroof motor assembly		Ground	Continuity
Connector	Terminal		
R5	6		Exists

Is the inspection result normal?

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

3.CHECK SUNROOF MOTOR CIRCUIT

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

BCM		Sunroof motor assembly		Continuity
Connector	Terminal	Connector	Terminal	
M67	68	R5	4	Exists
	69		2	

4. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M67	68		Not exist
	69		

Is the inspection result normal?

YES >> Replace BCM.Refer to BCS-65, "Removal and Installation".
NO >> Repair or replace harness.

SUNROOF SWITCH

Description

INFOID:0000000008279745

Tilts up/down & slides open/close by sunroof switch operation.

Component Function Check

INFOID:0000000008279746

1.CHECK SUNROOF MOTOR OPERATION

Check tilt up/down & slide open/close operations with sunroof switch.

Is the inspection result normal?

YES >> Sunroof switch is OK.
NO >> Refer to RF-11, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000008279747

SUNROOF SWITCH

1.CHECK SUNROOF SWITCH POWER SUPPLY CIRCUIT

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 (V) (Approx.)
Sunroof switch			
Connector	Terminal		
R6	1	Ground	Battery voltage
	3		

Is the inspection result normal?

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

2.CHECK GROUND CIRCUIT

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

Sunroof switch		Ground	Continuity
Connector	Terminal		
R6	2		Exist

Is the inspection result normal?

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

3.CHECK SUNROOF SWITCH

Check sunroof switch.
Refer to RF-12, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace sunroof switch. Refer to RF-63, "SUNROOF SWITCH : Removal and Installation".

4.CHECK SUNROOF SWITCH CIRCUIT

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

Sunroof switch		Sunroof motor assembly		Continuity
Connector	Terminal	Connector	Terminal	
R6	1	R5	5	Exist
	3		1	

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

Sunroof motor assembly		Ground	Continuity
Connector	Terminal		
R5	5		Not exist
	1		

Is the inspection result normal?

YES >> Replace sunroof motor assembly.RF-56, "SUNROOF MOTOR ASSEMBLY : Removal and Installation"

NO >> Repair or replace harness.

5.CHECK INTERMITTENT INCIDENT

Refer to GI-46, "Intermittent Incident".

>> INSPECTION END

Component Inspection

INFOID:0000000008279748

SUNROOF SWITCH

1.CHECK SUNROOF SWITCH

1. Turn ignition switch OFF.
2. Disconnect sunroof switch connector.
3. Check continuity sunroof switch terminals.

Terminals		Condition	Continuity
1	2	Sunroof switch is operated TILT DOWN or SLIDE OPEN	Exists
		Other than above	Not exist
3		Sunroof switch is operated TILT UP or SLIDE CLOSE	Exists
		Other than above	Not exist

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace sunroof switch (built in map lamp assembly). Refer to RF-63, "SUNROOF SWITCH : Removal and Installation".

DOOR SWITCH

Description

INFOID:0000000008279749

Detects door open/closed condition.

Component Function Check

INFOID:0000000008279750

1.CHECK FUNCTION

With CONSULT

Check door switches (“DOOR SW-DR”, “DOOR SW-AS”, “DOOR SW-RL”, “DOOR SW-RR”, “BACK DOOR SW”) in “Data Monitor” mode with CONSULT.

Monitor item	Door condition	Display
DOOR SW-DR	CLOSE → OPEN	OFF → ON
DOOR SW-AS		
DOOR SW-RL		
DOOR SW-RR		
BACK DOOR		

Is the inspection result normal?

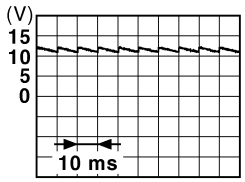
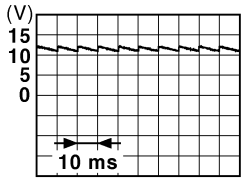
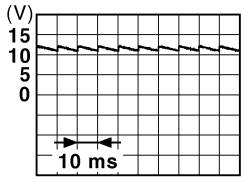
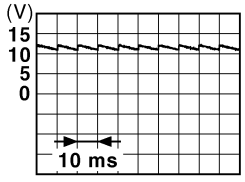
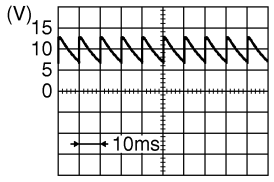
YES >> Door switch is OK.
NO >> Refer to RF-13, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000008279751

1.CHECK DOOR SWITCH INPUT SIGNAL

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

Door switch				Voltage (V) (Approx.)
(+)			(–)	
connector		Terminal		
Front door switch (passenger side)	B27	2	Ground	 JPMIA0011GB
Front door switch (driver side)	B34	2		 JPMIA0011GB
Rear door switch RH	B53	2		 JPMIA0011GB
Rear door switch LH	B71	2		 JPMIA0011GB
Back door lock assembly (back door switch)	D190	3		 JPMIA0593GB

Is the inspection result normal?

YES >> • Back door switch: GO TO 3.
• Door switch: GO TO 4.

NO >> GO TO 2.

2.CHECK DOOR SWITCH CIRCUIT

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

BCM		Door switch		Continuity
connector	Terminal	connector	Terminal	
M65	12	B27	2	Exists
	13	B53		
M66	43	D190	3	
	47	B34	2	
	48	B71		

3. Check continuity between BCM harness connector and ground.

BCM connector	Terminal	Ground	Continuity
M65	12		Does not exist
	13		
M66	43		
	47		
	48		

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-65, "Exploded View".
NO >> Repair or replace harness.

3.CHECK BACK DOOR GROUND CIRCUIT

Check continuity between back door lock assembly harness connector and ground.

Back door lock assembly		Ground	Continuity
connector	Terminal		
D190	4		Exist

Is the inspection result normal?

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

4.CHECK DOOR SWITCH

Check door switch.
Refer to RF-15, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace door switch. Refer to DLK-241, "Removal and Installation".

5.CHECK INTERMITTENT INCIDENT

Refer to GI-46, "Intermittent Incident".

>> INSPECTION END

Component Inspection

INFOID:0000000008279752

1.CHECK DOOR SWITCH

1. Turn ignition switch OFF.
2. Disconnect door switch connector.
3. Check door switch.

Terminal			Condition	Continuity
Each door	2	Ground	Door switch pressed	Exists
			Door switch released	Does not exist

Terminal			Condition	Continuity
Back door	3	4	Back door open	Exists
			Back door close	Does not exist

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace door switch. Refer to DLK-241, "Removal and Installation".

ECU DIAGNOSIS INFORMATION

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:0000000008729085

VALUES ON THE DIAGNOSIS TOOL

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

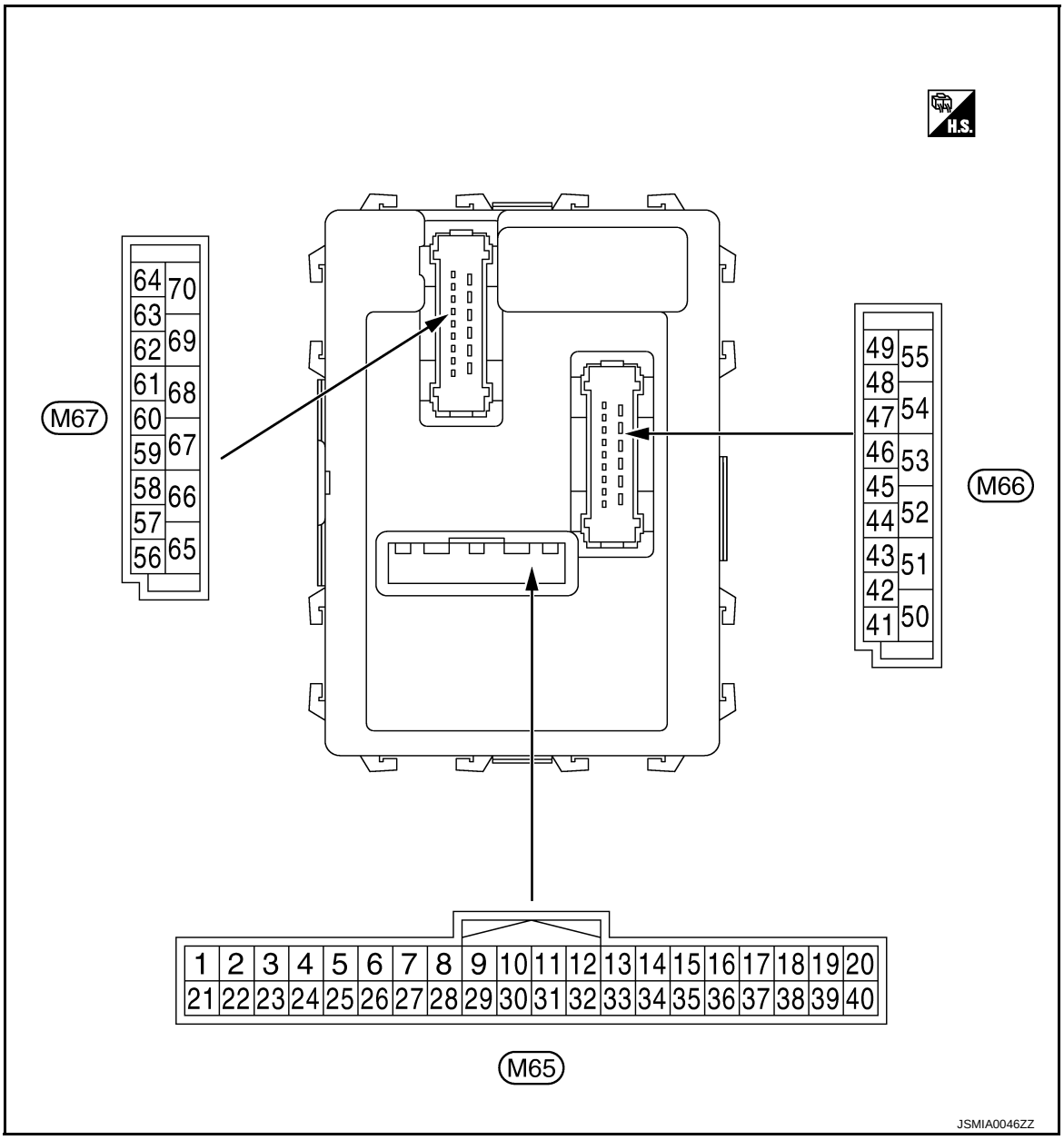
Monitor Item	Condition	Value/Status
IGN ON SW	Ignition switch OFF or ACC	Off
	Ignition switch ON	On
KEY ON SW	Mechanical key is removed from key cylinder	Off
	Mechanical key is inserted to key cylinder	On
CDL LOCK SW	Door lock/unlock switch does not operate	Off
	Press door lock/unlock switch to the lock side	On
CDL UNLOCK SW	Door lock/unlock switch does not operate	Off
	Press door lock/unlock switch to the unlock side	On
DOOR SW-DR	Driver's door closed	Off
	Driver's door opened	On
DOOR SW-AS	Passenger door closed	Off
	Passenger door opened	On
DOOR SW-RR	Rear RH door closed	Off
	Rear RH door opened	On
DOOR SW-RL	Rear LH door closed	Off
	Rear LH door opened	On
BACK DOOR SW	Back door closed	Off
	Back door opened	On
KEY CYL LK-SW	Other than driver door key cylinder LOCK position	Off
	Driver door key cylinder LOCK position	On
KEY CYL UN-SW	Other than driver door key cylinder UNLOCK position	Off
	Driver door key cylinder UNLOCK position	On
KEYLESS LOCK	“LOCK” button of key fob is not pressed	Off
	“LOCK” button of key fob is pressed	On
KEYLESS UNLOCK	“UNLOCK” button of key fob is not pressed	Off
	“UNLOCK” button of key fob is pressed	On
I-KEY LOCK	“LOCK” button of Intelligent Key or door request switch are not pressed	Off
	“LOCK” button of Intelligent Key or door request switch are pressed	On
I-KEY UNLOCK	“UNLOCK” button of Intelligent Key or door request switch are not pressed	Off
	“UNLOCK” button of Intelligent Key or door request switch are pressed	On
ACC ON SW	Ignition switch OFF	Off
	Ignition switch ACC or ON	On
REAR DEF SW	Rear window defogger switch OFF	Off
	Rear window defogger switch ON	On

Monitor Item	Condition	Value/Status
LIGHT SW 1ST	Lighting switch OFF	Off
	Lighting switch 1ST	On
BUCKLE SW	The seat belt (driver side) is unfastened. [Seat belt switch (driver side) OFF]	Off
	The seat belt (driver side) is fastened. [Seat belt switch (driver side) ON]	On
KEYLESS PANIC	PANIC button of key fob is not pressed	Off
	PANIC button of key fob is pressed	On
KEYLESS TRUNK	**NOTE:** The item is indicated, but not monitored.	Off
TRNK OPN MNTR	**NOTE:** The item is indicated, but not monitored.	Off
RKE LCK-UNLCK	LOCK/UNLOCK button of key fob is not pressed and held simultaneously	Off
	LOCK/UNLOCK button of key fob is pressed and held simultaneously	On
RKE KEEP UNLK	UNLOCK button of key fob is not pressed	Off
	UNLOCK button of key fob is pressed and held	On
HI BEAM SW	Lighting switch OFF	Off
	Lighting switch HI	On
HEAD LAMP SW 1	Lighting switch OFF	Off
	Lighting switch 2ND	On
HEAD LAMP SW 2	Lighting switch OFF	Off
	Lighting switch 2ND	On
AUTO LIGHT SW	Other than lighting switch AUTO	Off
	Lighting switch AUTO	On
PASSING SW	Other than lighting switch PASS	Off
	Lighting switch PASS	On
FR FOG SW	Front fog lamp switch OFF	Off
	Front fog lamp switch ON	On
RR FOG SW	**NOTE:** The item is indicated, but not monitored.	Off
TURN SIGNAL R	Turn signal switch OFF	Off
	Turn signal switch RH	On
TURN SIGNAL L	Turn signal switch OFF	Off
	Turn signal switch LH	On
ENGINE RUN	Engine stopped	Off
	Engine running	On
PKB SW	Parking brake switch is OFF	Off
	Parking brake switch is ON	On
CARGO LAMP SW	**NOTE:** The item is indicated, but not monitored.	Off
OPTICAL SENSOR	Bright outside of the vehicle	Close to 5 V
	Dark outside of the vehicle	Close to 0 V
IGN SW CAN	Ignition switch OFF or ACC	Off
	Ignition switch ON	On

Monitor Item	Condition	Value/Status
FR WIPER HI	Front wiper switch OFF	Off
	Front wiper switch HI	On
FR WIPER LOW	Front wiper switch OFF	Off
	Front wiper switch LO	On
FR WIPER INT	Front wiper switch OFF	Off
	Front wiper switch INT	On
FR WASHER SW	Front washer switch OFF	Off
	Front washer switch ON	On
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	1 - 7
FR WIPER STOP	Any position other than front wiper stop position	Off
	Front wiper stop position	On
VEHICLE SPEED	While driving	Equivalent to speedometer reading
RR WIPER ON	Rear wiper switch OFF	Off
	Rear wiper switch ON	On
RR WIPER INT	Rear wiper switch OFF	Off
	Rear wiper switch INT	On
RR WASHER SW	Rear washer switch OFF	Off
	Rear washer switch ON	On
RR WIPER STOP	Rear wiper stop position	Off
	Other than rear wiper stop position	On
RR WIPER STP2	**NOTE:** The item is indicated, but not monitored.	Off
H/L WASH SW	**NOTE:** The item is indicated, but not monitored.	Off
HAZARD SW	Hazard switch OFF	Off
	Hazard switch ON	On
BRAKE SW	Brake pedal is not depressed	Off
	Brake pedal is depressed	On
FAN ON SIG	Blower fan motor switch OFF	Off
	Blower fan motor switch ON (other than OFF)	On
AIR COND SW	• A/C conditioner OFF (A/C switch indicator OFF) (Automatic air conditioner) • A/C switch OFF (Manual air conditioner)	Off
	• A/C conditioner ON (A/C switch indicator ON) (Automatic air conditioner) • A/C switch ON (Manual air conditioner)	On
I-KEY TRUNK	**NOTE:** The item is indicated, but not monitored.	Off
I-KEY PW DWN	UNLOCK button of Intelligent Key is not pressed	Off
	UNLOCK button of Intelligent Key is pressed and held	On
I-KEY PANIC	PANIC button of Intelligent Key is not pressed	Off
	PANIC button of Intelligent Key is pressed	On
PUSH SW	Return to ignition switch to “LOCK” position	Off
	Press ignition switch	On
TRNK OPNR SW	When back door opener switch is not pressed	Off
	When back door opener switch is pressed	On

Monitor Item	Condition	Value/Status
TRUNK CYL SW	**NOTE:** The item is indicated, but not monitored.	Off
HOOD SW	Close the hood **NOTE:** Vehicles of except for Mexico are OFF-fixed	Off
	Open the hood	On
OIL PRESS SW	• Ignition switch OFF or ACC • Engine running	Off
	Ignition switch ON	On
AIR PRESS FL	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of front LH tire
AIR PRESS FR	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of front RH tire
AIR PRESS RR	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of rear RH tire
AIR PRESS RL	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of rear LH tire
ID REGST FL1	ID of front LH tire transmitter is registered	Done
	ID of front LH tire transmitter is not registered	Yet
ID REGST FR1	ID of front RH tire transmitter is registered	Done
	ID of front RH tire transmitter is not registered	Yet
ID REGST RR1	ID of rear RH tire transmitter is registered	Done
	ID of rear RH tire transmitter is not registered	Yet
ID REGST RL1	ID of rear LH tire transmitter is registered	Done
	ID of rear LH tire transmitter is not registered	Yet
WARNING LAMP	Tire pressure indicator OFF	Off
	Tire pressure indicator ON	On
BUZZER	Tire pressure warning alarm is not sounding	Off
	Tire pressure warning alarm is sounding	On

TERMINAL LAYOUT

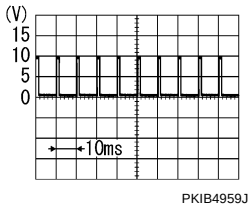
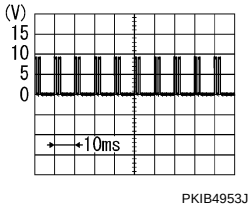
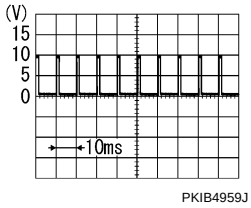
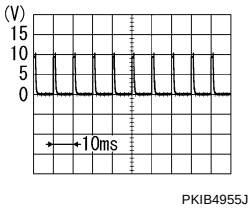
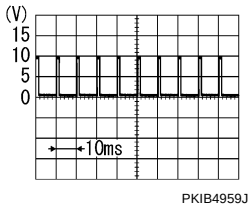


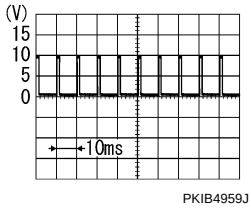
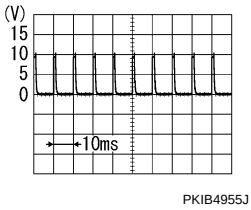
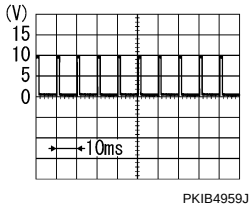
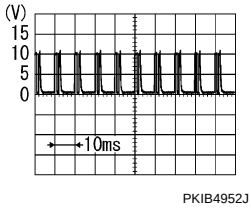
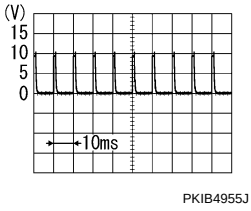
PHYSICAL VALUES

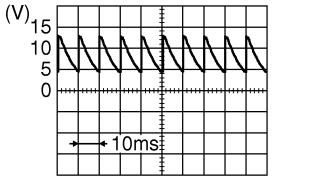
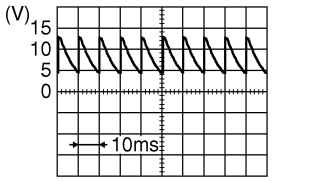
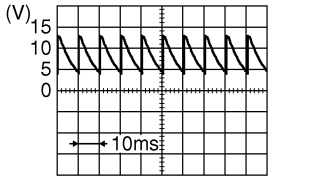
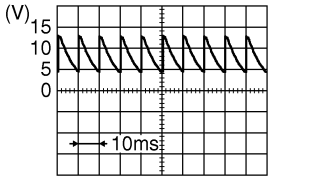
CAUTION:

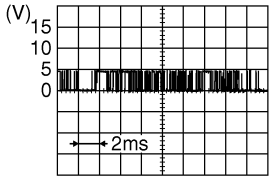
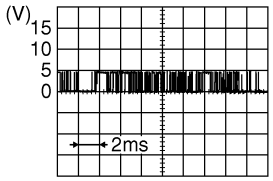
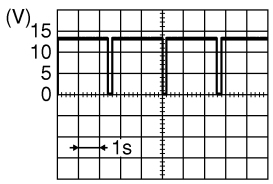
- **Check combination switch system terminal waveform under the loaded condition with lighting switch, turn signal switch and wiper switch OFF is not to be fluctuated by being overloaded.**
- **Turn wiper intermittent dial position to 4 except when checking waveform or voltage of wiper intermittent dial position. Wiper intermittent dial position can be confirmed on CONSULT. Refer to BCS-26, "COMB SW : CONSULT Function (BCM - COMB SW)".**
- **BCM reads the status of the combination switch at 10 ms internal normally. Refer to BCS-9, "System Diagram".**

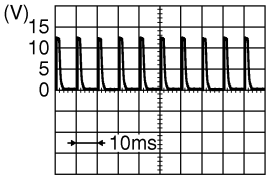
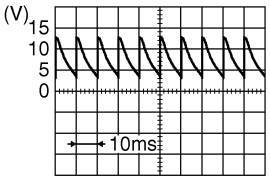
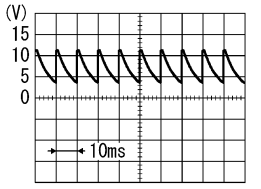
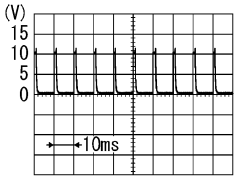
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
		Signal name	Input/ Output			
+	–					
1 (V)	Ground	Ignition key hole illumination control	Output	Ignition key hole illumination	OFF	Battery voltage
					ON	0 V

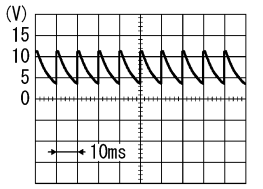
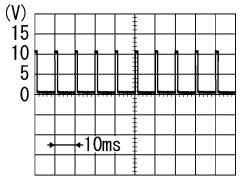
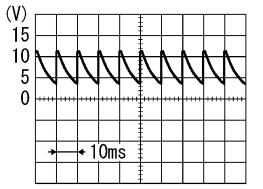
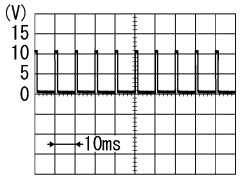
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
2 (G)	Ground	Combination switch INPUT 5	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Turn signal switch RH Lighting switch HI Lighting switch 1ST	 PKIB4959J 1.0 V
					Lighting switch 2ND	 PKIB4953J 2.0 V
3 (Y)	Ground	Combination switch INPUT 4	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Turn signal switch LH Lighting switch PASS Lighting switch 2ND	 PKIB4959J 1.0 V
					Front fog lamp switch ON	 PKIB4955J 0.8 V
4 (W)	Ground	Combination switch INPUT 3	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Lighting switch AUTO Front wiper switch LO Front wiper switch MIST Front wiper switch INT	 PKIB4959J 1.0 V

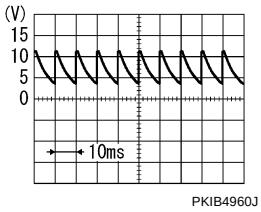
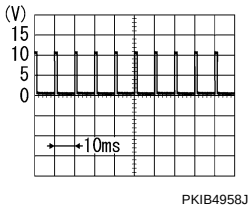
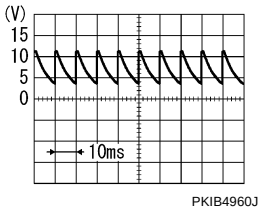
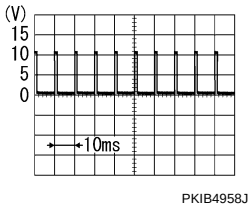
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
5 (R)	Ground	Combination switch INPUT 2	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front washer switch (Wiper intermittent dial 4)	 PKIB4959J 1.0 V
					Rear washer ON (Wiper intermittent dial 4)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6	
					Rear wiper switch ON (Wiper intermittent dial 4)	 PKIB4955J 0.8 V
6 (BG)	Ground	Combination switch INPUT 1	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front wiper switch HI (Wiper intermittent dial 4)	 PKIB4959J 1.0 V
					Rear wiper switch INT (Wiper intermittent dial 4)	
					Wiper intermittent dial 3 (All switch OFF)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2	 PKIB4952J 1.7 V
					Any of the condition below with all switch OFF • Wiper intermittent dial 6 • Wiper intermittent dial 7	 PKIB4955J 0.8 V

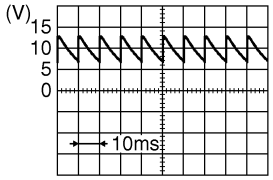
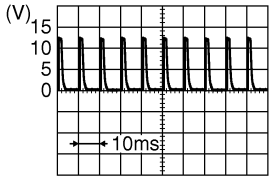
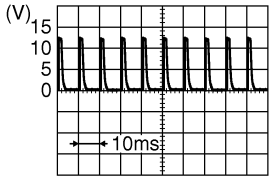
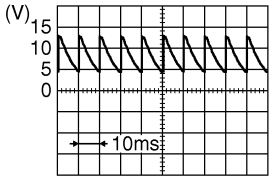
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
7 (V)	Ground	Door key cylinder switch UNLOCK signal	Input	Door key cylinder switch	NEUTRAL position	 JPMIA0587GB 8.0 - 8.5 V
					UNLOCK position	0 V
8 (R)	Ground	Door key cylinder switch LOCK signal	Input	Door key cylinder switch	NEUTRAL position	 JPMIA0587GB 8.0 - 8.5 V
					LOCK position	0 V
9 (R)	Ground	Stop lamp switch	Input	Stop lamp switch	OFF (Brake pedal is not depressed)	0 V
					ON (Brake pedal is depressed)	Battery voltage
10 (SB)	Ground	Rear window defogger switch	Input	Rear window defogger switch	Not pressed	Battery voltage
					Pressed	0 V
11 (SB)	Ground	Ignition switch ACC	Input	Ignition switch OFF		0 V
				Ignition switch ACC or ON		Battery voltage
12 (BG)	Ground	Passenger door switch	Input	Passenger door switch	OFF (When passenger door closed)	 JPMIA0586GB 7.5 - 8.0 V
					ON (When passenger door opened)	0 V
13 (LG)	Ground	Rear door switch RH	Input	Rear door switch RH	OFF (When rear door RH closed)	 JPMIA0587GB 8.0 - 8.5 V
					ON (When rear door RH opened)	0 V

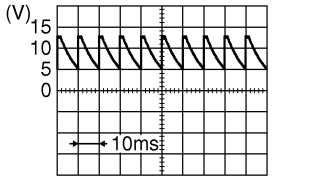
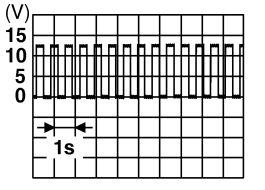
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
		Signal name	Input/ Output			
+	–					
14 (G)	Ground	Optical sensor	Input	Ignition switch ON	When bright outside of the vehicle	Close to 5 V
					When dark outside of the vehicle	Close to 0 V
17 (W)	Ground	Optical sensor power supply	Output	Ignition switch	OFF, ACC	0 V
					ON	5 V
18* (R)	Ground	Receiver and sensor ground	Input	Ignition switch ON		0 V
19* (V)	Ground	Remote keyless entry receiver power supply	Input	Without Intelligent Key system	At any condition	5 V
				With Intelligent Key system	• Ignition switch OFF • For 3 seconds after ignition switch OFF to ON	0 V
					3 seconds or later after ignition switch OFF to ON	5 V
20* (GR)	Ground	Remote keyless entry receiver signal	Input	Without Intelligent Key system	At any condition	 JPMIA0589GB **NOTE:** The wave form changes according to signal-receiving condition.
				With Intelligent Key system	• Ignition switch OFF • For 3 seconds after ignition switch OFF to ON	0 V
					3 seconds or later after ignition switch OFF to ON	 JPMIA0589GB **NOTE:** The wave form changes according to signal-receiving condition.
21 (G)	Ground	NATS antenna amp.	Input/ Output	Just after inserting ignition key in key cylinder		Pointer of tester should move
23 (B)	Ground	Security indicator signal	Input	Security indicator	ON	0 V
					Blinking (Ignition switch OFF)	 JPMIA0590GB 12.0 V
					OFF	Battery voltage

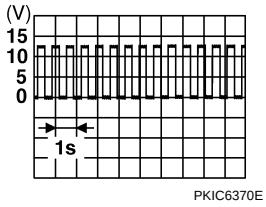
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
25 (BR)	Ground	NATS antenna amp.	Input/ Output	Just after inserting ignition key in key cylinder		Pointer of tester should move
27 (Y)	Ground	A/C switch	Input	Ignition switch OFF		
				Ignition switch ON	A/C switch OFF	 JPMIA0591GB 1.6 V
					A/C switch ON	0 V
28 (LG)	Ground	Blower fan switch	Input	Ignition switch OFF		
				Ignition switch ON	Blower fan switch OFF	 JPMIA0592GB 7.0 - 7.5 V
					Blower fan switch ON	0 V
29 (W)	Ground	Hazard switch	Input	Hazard switch	OFF	Battery voltage
					ON	0 V
30 (G)	Ground	Back door opener switch	Input	Back door opener switch	Not pressed	Battery voltage
					Pressed	0 V
32 (BR)	Ground	Combination switch OUTPUT 5	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	 PKIB4960J 7.2 V
					Front fog lamp switch ON (Wiper intermittent dial 4)	 PKIB4956J 1.0 V
					Rear wiper switch ON (Wiper intermittent dial 4)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 6 • Wiper intermittent dial 7	

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
33 (GR)	Ground	Combination switch OUTPUT 4	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	 PKIB4960J 7.2 V
					Lighting switch 1ST (Wiper intermittent dial 4)	 PKIB4958J 1.2 V
					Lighting switch AUTO (Wiper intermittent dial 4)	
					Rear wiper switch INT (Wiper intermittent dial 4)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6	
34 (SB)	Ground	Combination switch OUTPUT 3	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	 PKIB4960J 7.2 V
					Lighting switch 2ND (Wiper intermittent dial 4)	 PKIB4958J 1.2 V
					Lighting switch HI (Wiper intermittent dial 4)	
					Rear washer switch ON (Wiper intermittent dial 4)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3	

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
35 (B)	Ground	Combination switch OUTPUT 2	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	 PKIB4960J 7.2 V
					Lighting switch 2ND Lighting switch PASS Front wiper switch INT Front wiper switch HI	 PKIB4958J 1.2 V
36 (V)	Ground	Combination switch OUTPUT 1	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	 PKIB4960J 7.2 V
					Turn signal switch RH Turn signal switch LH Front wiper switch LO (Front wiper switch MIST) Front washer switch ON	 PKIB4958J 1.2 V
37 (LG)	Ground	Key switch	Input	Insert mechanical key into ignition key cylinder		Battery voltage
				Remove mechanical key from ignition key cylinder		0 V
38 (G)	Ground	Ignition switch ON	Input	Ignition switch OFF or ACC		0 V
				Ignition switch ON or START		Battery voltage
39 (L)	Ground	CAN-H	Input/ Output	—		—
40 (P)	Ground	CAN-L	Input/ Output	—		—

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
43 (V)	Ground	Back door switch	Input	Back door switch	OFF (When back door closed)	 JPMIA0593GB 9.5 - 10.0 V
					ON (When back door opened)	0 V
44 (B)	Ground	Rear wiper auto stop position	Input	Ignition switch ON	Rear wiper stop position	0 V
					Any position other than rear wiper stop position	Battery voltage
45 (P)	Ground	Door lock and unlock switch LOCK signal	Input	Door lock and unlock switch	NEUTRAL position	 JPMIA0591GB 1.6 V
					LOCK position	0 V
46 (BR)	Ground	Door lock and unlock switch UNLOCK signal	Input	Door lock and unlock switch	NEUTRAL position	 JPMIA0591GB 1.6 V
					UNLOCK position	0 V
47 (W)	Ground	Driver door switch	Input	Driver door switch	OFF (When driver door closed)	 JPMIA0587GB 8.0 - 8.5 V
					ON (When driver door opened)	0 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
48 (GR)	Ground	Rear door switch LH	Input	Rear door switch LH	OFF (When rear door LH closed)	 JPMIA0594GB 8.5 - 9.0 V
					ON (When rear door LH opened)	0 V
49 (L)	Ground	Luggage room lamp control	Output	Luggage room lamp switch DOOR position	Back door is closed (Luggage room lamp turns OFF)	Battery voltage
					Back door is opened (Luggage room lamp turns ON)	0 V
53 (V)	Ground	Back door open	Output	Back door opener switch	Not pressed (Back door actuator is activated)	0 V
					Pressed (Back door actuator is activated)	Battery voltage
55 (SB)	Ground	Rear wiper motor	Output	Ignition switch ON	Rear wiper switch OFF	0 V
					Rear wiper switch ON	Battery voltage
56 (Y)	Ground	Interior room lamp power supply	Output	After passing the interior room lamp battery saver operation time		0 V
				Any other time after passing the interior room lamp battery saver operation time		Battery voltage
57 (G)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
59 (L)	Ground	Driver door UNLOCK	Output	Driver door	UNLOCK (Actuator is activated)	Battery voltage
					Other then UNLOCK (Actuator is not activated)	0 V
60 (BR)	Ground	Turn signal LH	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch LH	 PKIC6370E 6.0 V

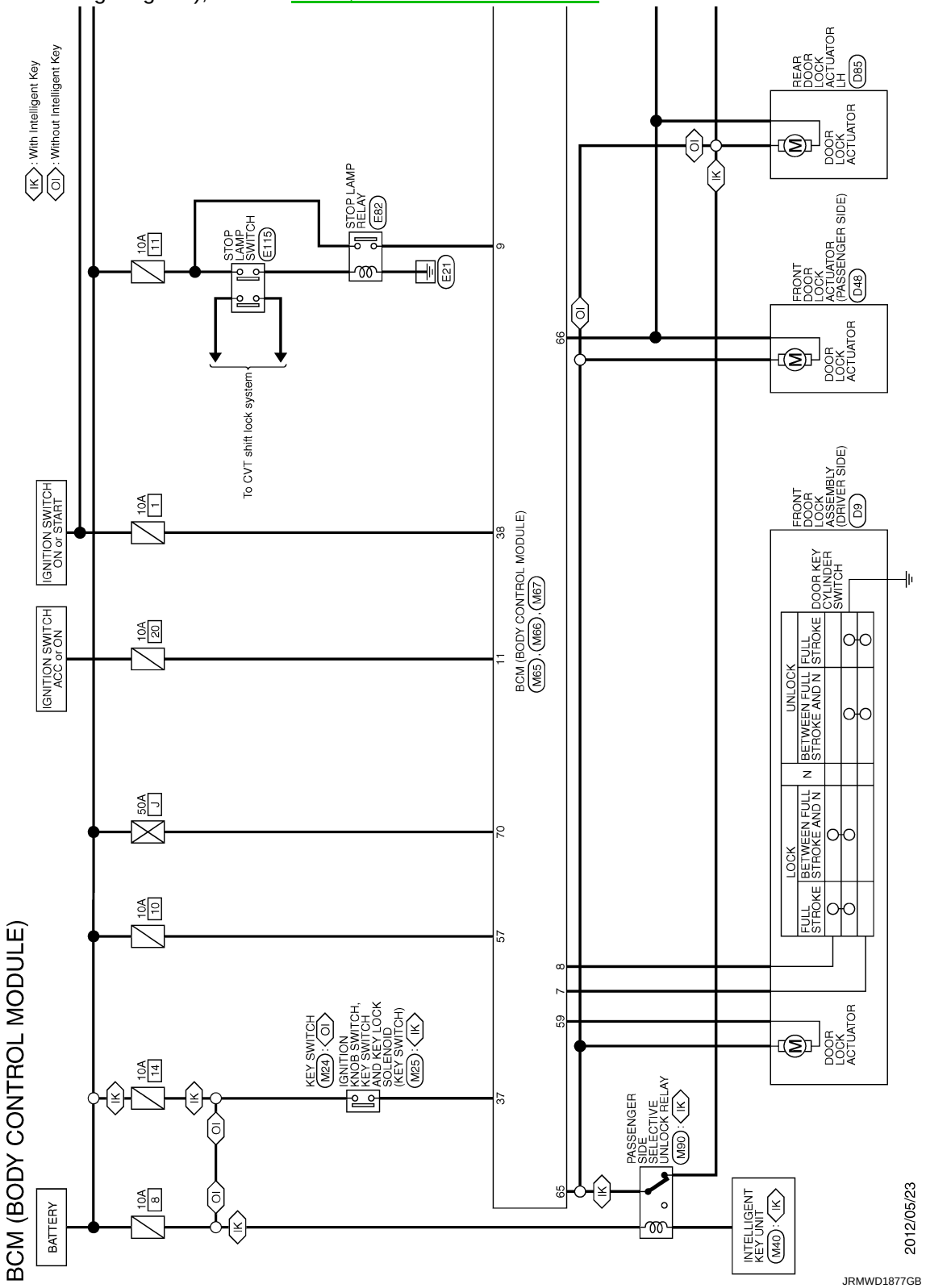
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
61 (GR)	Ground	Turn signal RH	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch RH	 PKIC6370E 6.0 V
63 (R)	Ground	Interior room lamp timer control	Output	Interior room lamp	OFF	Battery voltage
					ON	0 V
65 (V)	Ground	All doors LOCK	Output	All doors	LOCK (Actuator is activated)	Battery voltage
					Other then LOCK (Actuator is not activated)	0 V
66 (G)	Ground	Passenger door and rear door UNLOCK	Output	Passenger door and rear door	UNLOCK (Actuator is activated)	Battery voltage
					Other then UNLOCK (Actuator is not activated)	0 V
67 (B)	Ground	Ground	Output	Ignition switch ON		0 V
68 (L)	Ground	P/W power supply (RAP)	Output	Ignition switch ON		Battery voltage
69 (P)	Ground	P/W power supply (BAT)	Output	Ignition switch OFF		Battery voltage
70 (Y)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage

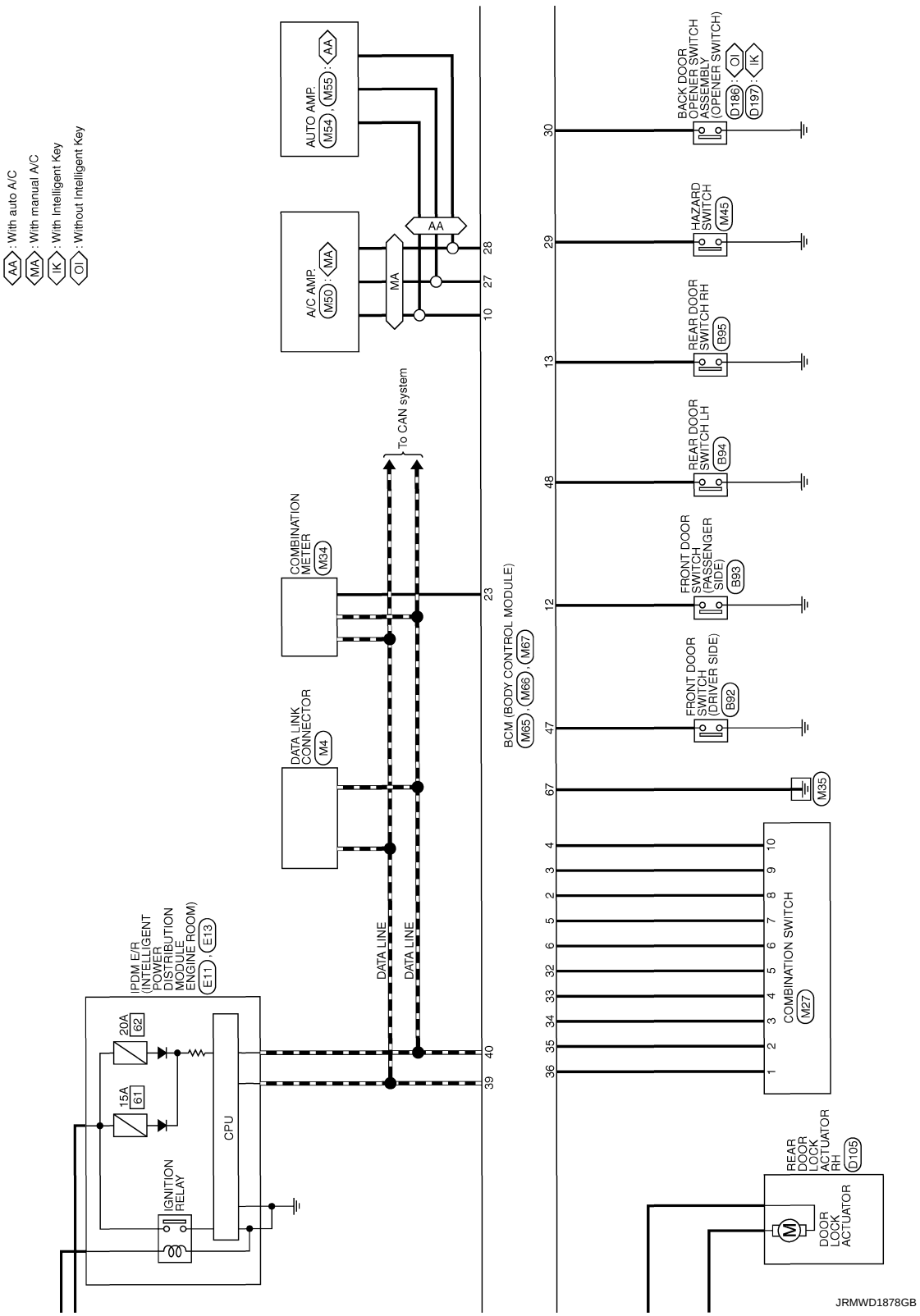
*: Except for Mexico with Intelligent Key

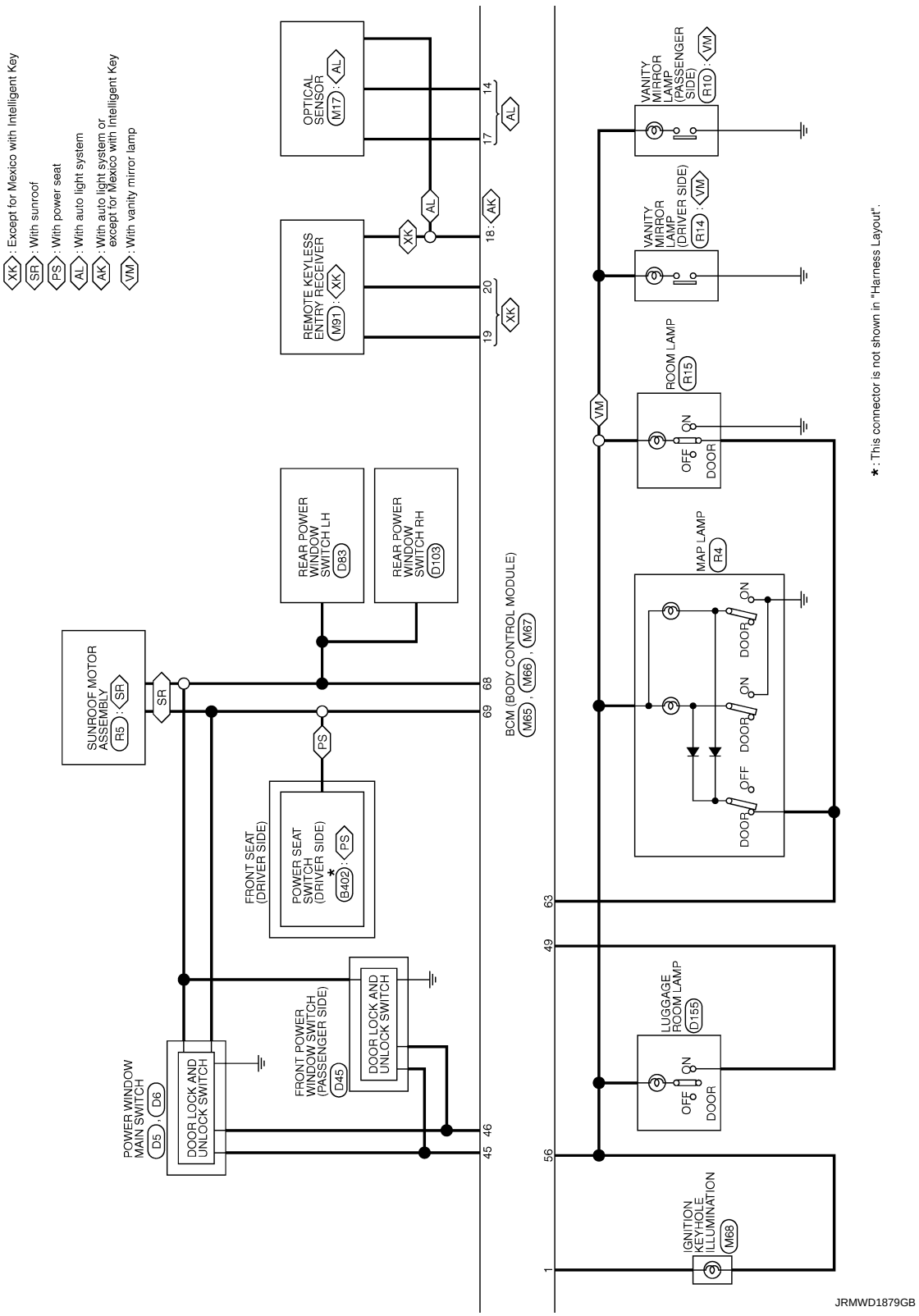
Wiring Diagram - BCM -

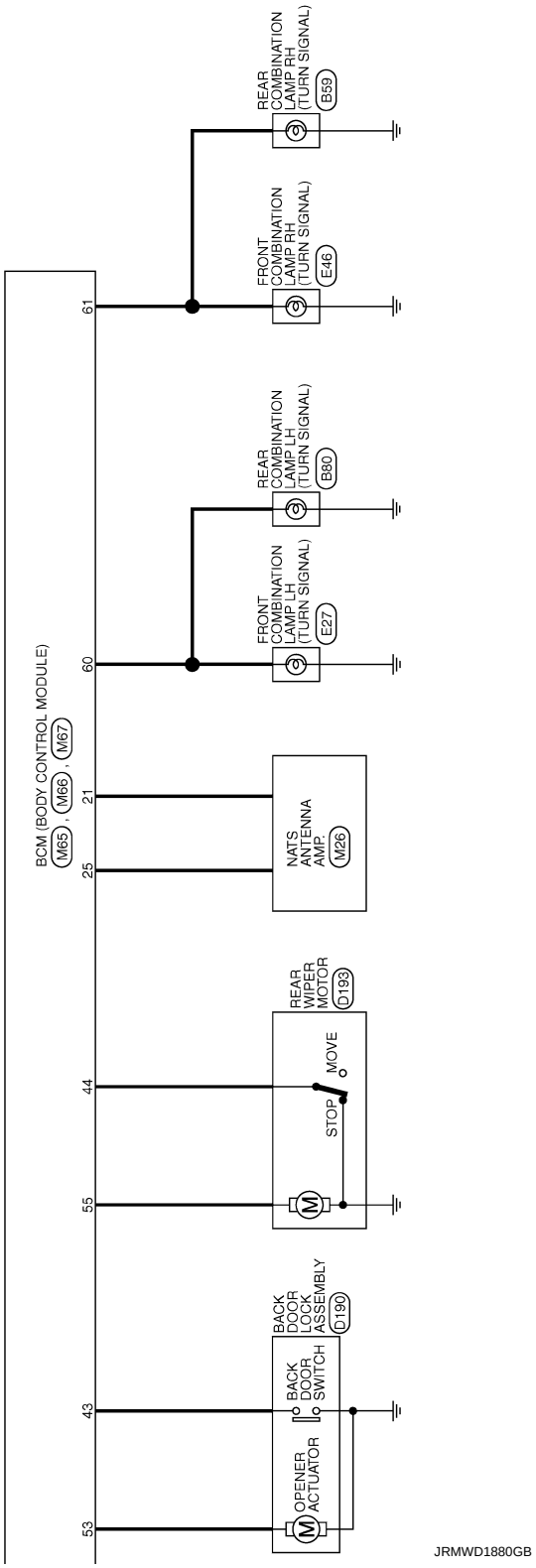
INFOID:0000000008729086

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".




AA : With auto A/C
MA : With manual A/C
IK : With Intelligent Key
OI : Without Intelligent Key
AUTO AMP. (M54), (M55) : AA
A/C AMP. (M50) : MA
AA
MA
28
27
10
To CAN system
COMBINATION METER (M34)
23
DATA LINK CONNECTOR (M4)
DATA LINE
DATA LINE
40
39
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) (E11), (E13)
20A 62
15A 61
CPU
IGNITION RELAY
BCM (BODY CONTROL MODULE) (M65), (M66), (M67)
30
BACK DOOR OPENER SWITCH ASSEMBLY (OPENER SWITCH) (D186) : OI (D197) : IK
29
HAZARD SWITCH (M45)
13
REAR DOOR SWITCH RH (B95)
48
REAR DOOR SWITCH LH (B94)
12
FRONT DOOR SWITCH (PASSENGER SIDE) (B93)
47
FRONT DOOR SWITCH (DRIVER SIDE) (B92)
67
(M35)
4 3 2 5 6 32 33 34 35 36
10 9 8 7 6 5 4 3 2 1
COMBINATION SWITCH (M27)
REAR DOOR LOCK ACTUATOR RH (D105)
DOOR LOCK ACTUATOR
JRMWD1878GB


XK : Except for Mexico with Intelligent Key
SR : With sunroof
PS : With power seat
AL : With auto light system
AK : With auto light system or except for Mexico with Intelligent Key
VM : With vanity mirror lamp
OPTICAL SENSOR M17 : AL
REMOTE KEYLESS ENTRY RECEIVER M91 : XK
REAR POWER WINDOW SWITCH LH D83
REAR POWER WINDOW SWITCH RH D103
SUNROOF MOTOR ASSEMBLY R5 : SR
POWER SEAT SWITCH (DRIVER SIDE) B402 : PS
FRONT SEAT (DRIVER SIDE)
FRONT POWER WINDOW SWITCH (PASSENGER SIDE) D45
POWER WINDOW MAIN SWITCH D5 D6
DOOR LOCK AND UNLOCK SWITCH
BCM (BODY CONTROL MODULE) M65 , M66 , M67
VANITY MIRROR LAMP (PASSENGER SIDE) R10 : VM
VANITY MIRROR LAMP (DRIVER SIDE) R14 : VM
ROOM LAMP R15
MAP LAMP R4
LUGGAGE ROOM LAMP D155
IGNITION KEYHOLE ILLUMINATION M68
ON
OFF
DOOR
*: This connector is not shown in "Harness Layout".
JRMWD1879GB



Fail-safe

INFOID:0000000008729087

REAR WIPER MOTOR PROTECTION

BCM detects the rear wiper stopping position according to the rear wiper stop position signal.
When the rear wiper stop position signal does not change more than 5 seconds while driving the rear wiper, BCM stops power supply to protect the rear wiper motor.

Condition of cancellation

1. Pass more than 1 minute after the rear wiper stop.
2. Turn the rear wiper switch OFF.
3. Operate the rear wiper switch or rear washer switch.

DTC Inspection Priority Chart

INFOID:0000000008729088

If some DTCs are displayed at the same time, perform inspections one by one based on the following priority chart.

Priority	DTC
1	U1000: CAN COMM CIRCUIT
2	C1735: IGN CIRCUIT OPEN
3	• C1704: LOW PRESSURE FL • C1705: LOW PRESSURE FR • C1706: LOW PRESSURE RR • C1707: LOW PRESSURE RL • C1708: [NO DATA] FL • C1709: [NO DATA] FR • C1710: [NO DATA] RR • C1711: [NO DATA] RL • C1716: [PRESS DATA ERR] FL • C1717: [PRESS DATA ERR] FR • C1718: [PRESS DATA ERR] RR • C1719: [PRESS DATA ERR] RL • C1729: VHCL SPEED SIG ERR

DTC Index

INFOID:0000000008729089

NOTE:
Details of time display
- CRNT: Displays when there is a malfunction now or after returning to the normal condition until turning ignition switch OFF → ON again.
- 1 - 39: Displayed if any previous malfunction is present when current condition is normal. It increases like 1 → 2 → 3...38 → 39 after returning to the normal condition whenever ignition switch OFF → ON. The counter remains at 39 even if the number of cycles exceeds it. It is counted from 1 again when turning ignition switch OFF → ON after returning to the normal condition if the malfunction is detected again.

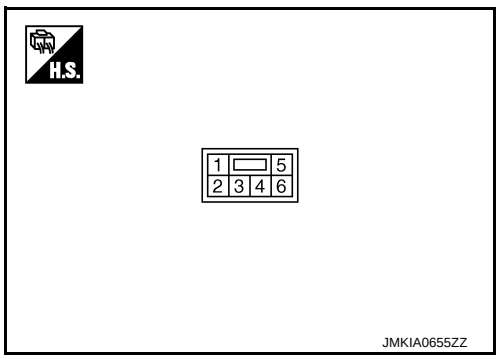
CONSULT display	Tire pressure monitor warning lamp ON	Reference
U1000: CAN COMM CIRCUIT	—	BCS-34
C1704: LOW PRESSURE FL	×	WT-14
C1705: LOW PRESSURE FR	×	
C1706: LOW PRESSURE RR	×	
C1707: LOW PRESSURE RL	×	
C1708: [NO DATA] FL	×	WT-16
C1709: [NO DATA] FR	×	
C1710: [NO DATA] RR	×	
C1711: [NO DATA] RL	×	
C1716: [PRESS DATA ERR] FL	×	WT-19
C1717: [PRESS DATA ERR] FR	×	
C1718: [PRESS DATA ERR] RR	×	
C1719: [PRESS DATA ERR] RL	×	
C1729: VHCL SPEED SIG ERR	×	WT-21
C1735: IGN CIRCUIT OPEN	—	BCS-35

SUNROOF MOTOR ASSEMBLY

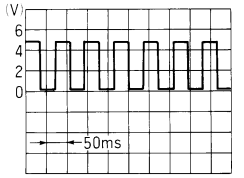
Reference Value

INFOID:0000000008279758

TERMINAL LAYOUT



PHYSICAL VALUES

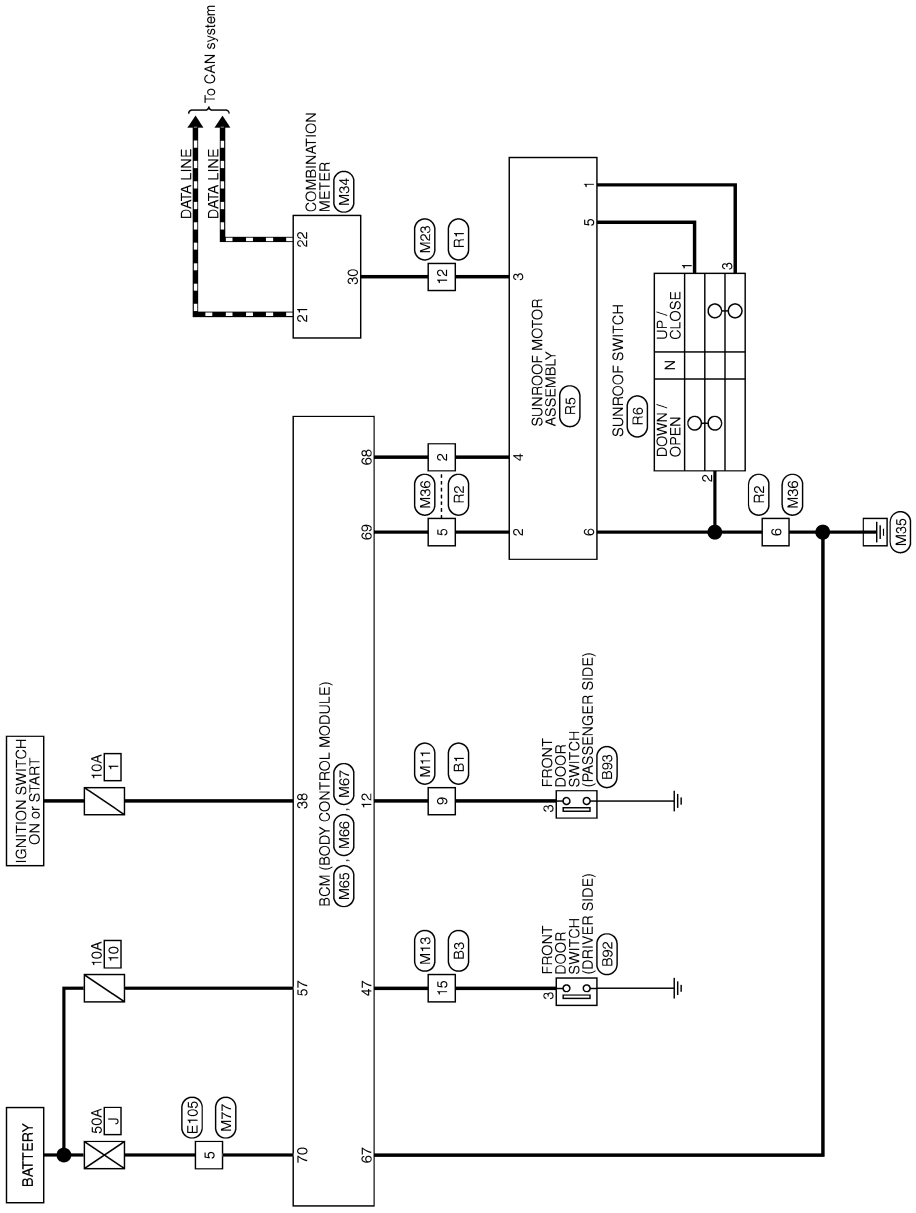
Terminal No. (Wire color)		Description		Condition	Value
+	-	Signal name	Input/ Output		
1 (R)	Ground	Sunroof close switch signal	Input	Sunroof switch in following position • TILT UP • SLIDE CLOSE	0
				Other than above	Battery voltage
2 (P)	Ground	Sunroof power supply	Input	—	Battery voltage
3 (O)	Ground	Vehicle speed signal (2-pulse)	Input	Speedometer operated [When vehicle speed is approx.40km/ h (25MPH)]	 ELF1080D
4 (L)	Ground	Ignition switch power supply	Input	Ignition switch ON	Battery voltage
				Other than above	0
5 (G)	Ground	Sunroof open switch signal	Input	Sunroof switch in following position • TILT DOWN • SLIDE OPEN	0
				Other than above	Battery voltage
6 (B)	Ground	Ground	—	—	0

Wiring Diagram— SUNROOF —

INFOID:0000000008279759

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

SUNROOF



2012/05/23

JRKWC2055GB

SYMPTOM DIAGNOSIS

SUNROOF DOES NOT OPERATE PROPERLY

Description

INFOID:0000000008279760

Sunroof does not operate normally.
- Glass lid does not slide or tilt.
- Judder occurs during sliding operation of glass lid.
- Sliding or tilting operation of glass lid is slow.

Diagnosis Procedure

INFOID:0000000008279761

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-54, "GLASS LID : Removal and Installation".

Is the inspection result normal?

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

2.CHECK SUNROOF FRAME ASSEMBLY

Check the following items.
- Damage, deformation or trapped foreign material of slide rail.
- Insufficient application of grease to sliding section of slide rail.
  Refer to RF-59, "SUNROOF UNIT ASSEMBLY : Removal and Installation".

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-61, "SUNSHADE : 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-36, "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-10, "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-11, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 7.
NO >> Repair or replace the malfunctioning parts.

7. CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-46, "Intermittent Incident".
NO >> GO TO 1.

AUTO OPERATION DOES NOT OPERATE

Description

INFOID:0000000008279762

Auto operation does not operate
- Auto operation of glass lid does not operate.
- Glass lid stops halfway.
- Anti-pinch function operates.

Diagnosis Procedure

INFOID:0000000008279763

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-54, "GLASS LID : Removal and Installation".

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-62, "WIND DEFLECTOR : Removal and Installation".

Is the inspection result normal?

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

3.CHECK SUNROOF FRAME ASSEMBLY

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

Refer to RF-59, "SUNROOF UNIT ASSEMBLY : Removal and Installation".

Is the inspection result normal?

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

4.PERFORM INITIALIZATION PROCEDURE

Perform initialization procedure.
Refer to RF-4, "ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Special Repair Requirement".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace sunroof motor assembly. Refer to RF-56, "SUNROOF MOTOR ASSEMBLY : Removal and Installation".

SUNROOF DOES NOT OPERATE ANTI-PINCH FUNCTION

Diagnosis Procedure

INFOID:0000000008279764

1.PERFORM INITIALIZATION PROCEDURE

Perform initialization procedure.
Refer to RF-4, "ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Special Repair Requirement".

Is the inspection result normal?

YES >> Inspection end.
NO >> Check intermittent incident. Refer to GI-46, "Intermittent Incident".

RETAINED POWER OPERATION DOES NOT OPERATE PROPERLY

Diagnosis Procedure

INFOID:0000000008279765

1.CHECK DOOR SWITCH

Check door switch.
Refer to DLK-57, "Component Function Check".

Is the inspection result normal?

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

2.CHECK POWER WINDOW MAIN SWITCH

Check power window main switch system.
Refer to PWC-11, "POWER WINDOW MAIN SWITCH : Diagnosis Procedure".

Is the inspection result normal?

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

3.CHECK BCM POWER SUPPLY AND GROUND

Check BCM power supply and ground circuit.
Refer to BCS-36, "Diagnosis Procedure".

Is the inspection result normal?

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

4.CHECK SUNROOF MOTOR ASSEMBLY POWER SUPPLY AND GROUND

Check sunroof motor assembly power supply and ground circuit.
Refer to RF-10, "SUNROOF MOTOR ASSEMBLY : Diagnosis Procedure".

Is the inspection result normal?

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

5.CHECK SUNROOF SWITCH

Check sunroof switch circuit.
Refer to RF-11, "Diagnosis Procedure".

Is the inspection result normal?

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

6.CONFIRM THE OPERATION

Confirm the operation again.

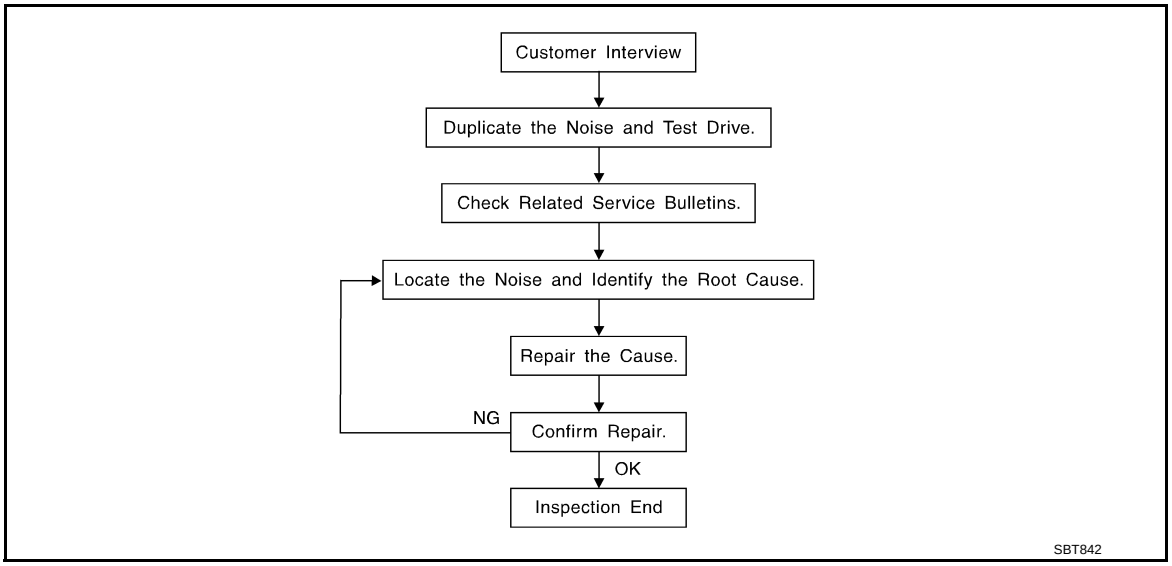
Is the result normal?

YES >> Check intermittent incident. Refer to GI-46, "Intermittent Incident".
NO >> GO TO 1.

SQUEAK AND RATTLE TROUBLE DIAGNOSES

Work Flow

INFOID:0000000008279766



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 customer's comments; refer to RF-48, "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, perform a diagnosis and repair the noise that the customer is concerned about. This can be accomplished by performing a cruise test on 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 bumblebee)
  Buzz characteristics include high frequency rattle/firm contact.
- Often the degree of acceptable noise level will vary depending up on 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 models, drive position on 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 and 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-46, "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. A Nissan Squeak and Rattle Kit (J-43980) is available through the authorized Nissan Parts Department.

CAUTION:
Never 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 following materials are contained in the Nissan Squeak and Rattle Kit (J-43980). Each item can be ordered separately as needed.
URETHANE PADS [1.5 mm (0.059 in) thick]
Insulates connectors, harness, etc.
76268-9E005: 100 × 135 mm (3.94 × 5.31 in)/76884-71L01: 60 × 85 mm (2.36 × 3.35 in)/76884-71L02:15 × 25 mm (0.59 × 0.98 in)
INSULATOR (Foam blocks)
Insulates components from contact. Can be used to fill space behind a panel.
73982-9E000: 45 mm (1.77 in) thick, 50 × 50 mm (1.97 × 1.97 in)/73982-50Y00: 10 mm (0.39 in) thick, 50 × 50 mm (1.97 × 1.97 in)
INSULATOR (Light foam block)
80845-71L00: 30 mm (1.18 in) thick, 30 × 50 mm (1.18 × 1.97in)
FELT CLOTHTAPE
Used to insulate where movement does not occur. Ideal for instrument panel applications.
68370-4B000: 15 × 25 mm (0.59 × 0.98 in) pad/68239-13E00: 5 mm (0.20 in) wide tape roll
The following materials, not found in the kit, 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. 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:0000000008279767

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

INSTRUMENT PANEL

Most incidents are caused by contact and movement between:

1. The 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. The areas can usually be insulated with felt cloth tape or insulator foam blocks from the Nissan Squeak and Rattle Kit (J-43980) 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 the following:

1. Trunk lid dumpers 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. 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's important to note the position the seats 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. 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 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.

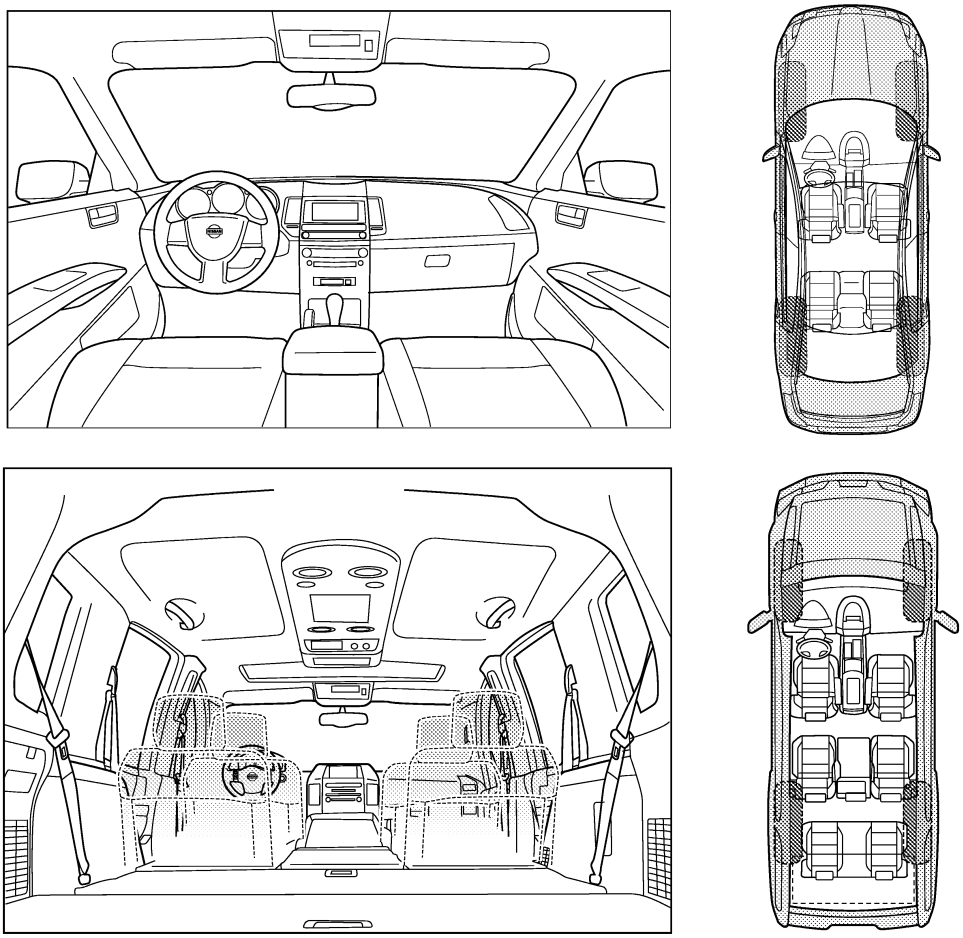
Diagnostic Worksheet

INFOID:0000000008279768

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

PRECAUTION

PRECAUTIONS
FOR MEXICO

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

INFOID:0000000008279769

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.**

FOR MEXICO : Service Notice

INFOID:0000000008279770

- When removing or installing various parts, place a cloth or padding onto the vehicle body to prevent scratches.
- Handle trim, molding, instruments, grille, etc. carefully during removing or installing. Be careful not to oil or damage them.
- Apply sealing compound where necessary when installing parts.
- When applying sealing compound, be careful that the sealing compound does not protrude from parts.
- When replacing any metal parts (for example body outer panel, members, etc.), be sure to take rust prevention measures.

FOR MEXICO : Precaution for Work

INFOID:0000000008279771

- 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 keep them.
- Replace a deformed or damaged clip.
- If a part is specified as a non-reusable part, always replace it with new one.
- Be sure to tighten bolts and nuts securely to the specified torque.
- After re-installation is completed, be sure to check that each part works normally.
- Follow the steps below to clean components.

- Water soluble foul: Dip a soft cloth into lukewarm water, and wring the water out of the cloth to wipe the fouled area.
  Then rub with a soft and dry cloth.

- Oily foul: Dip a soft cloth into lukewarm water with mild detergent (concentration: within 2 to 3%), and wipe the fouled area.
  Then dip a cloth into fresh water, and wring the water out of the cloth to wipe the detergent off. Then rub with a soft and dry cloth.
- Never use organic solvent such as thinner, benzene, alcohol, and gasoline.
- For genuine leather seats, use a genuine leather seat cleaner.

FOR USA AND CANADA

FOR USA AND CANADA : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000008279772

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted.
Information necessary to service the system safely is included in the “SRS 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.**

FOR USA AND CANADA : Service Notice

INFOID:0000000008279773

- When removing or installing various parts, place a cloth or padding onto the vehicle body to prevent scratches.
- Handle trim, molding, instruments, grille, etc. carefully during removing or installing. Be careful not to oil or damage them.
- Apply sealing compound where necessary when installing parts.
- When applying sealing compound, be careful that the sealing compound does not protrude from parts.
- When replacing any metal parts (for example body outer panel, members, etc.), be sure to take rust prevention measures.

FOR USA AND CANADA : Precaution for Work

INFOID:0000000008279774

- 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 keep them.
- Replace a deformed or damaged clip.
- If a part is specified as a non-reusable part, always replace it with new one.
- Be sure to tighten bolts and nuts securely to the specified torque.

- After re-installation is completed, be sure to check that each part works normally.
- Follow the steps below to clean components.

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

- Never use organic solvent such as thinner, benzene, alcohol, and gasoline.
- For genuine leather seats, use a genuine leather seat cleaner.

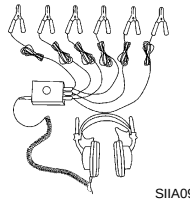
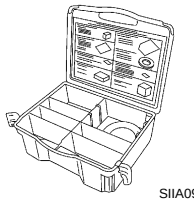
PREPARATION

PREPARATION

Special Service Tools

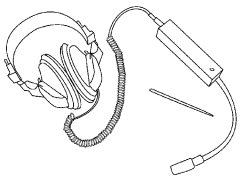
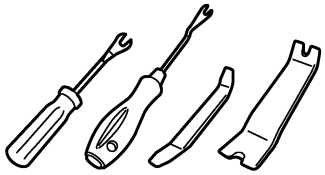
INFOID:0000000008279775

The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description
(J-39570) Chassis ear  SIIA0993E	Locates the noise
(J-43980) NISSAN Squeak and Rattle Kit  SIIA0994E	Repairs the cause of noise

Commercial Service Tool

INFOID:0000000008279776

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

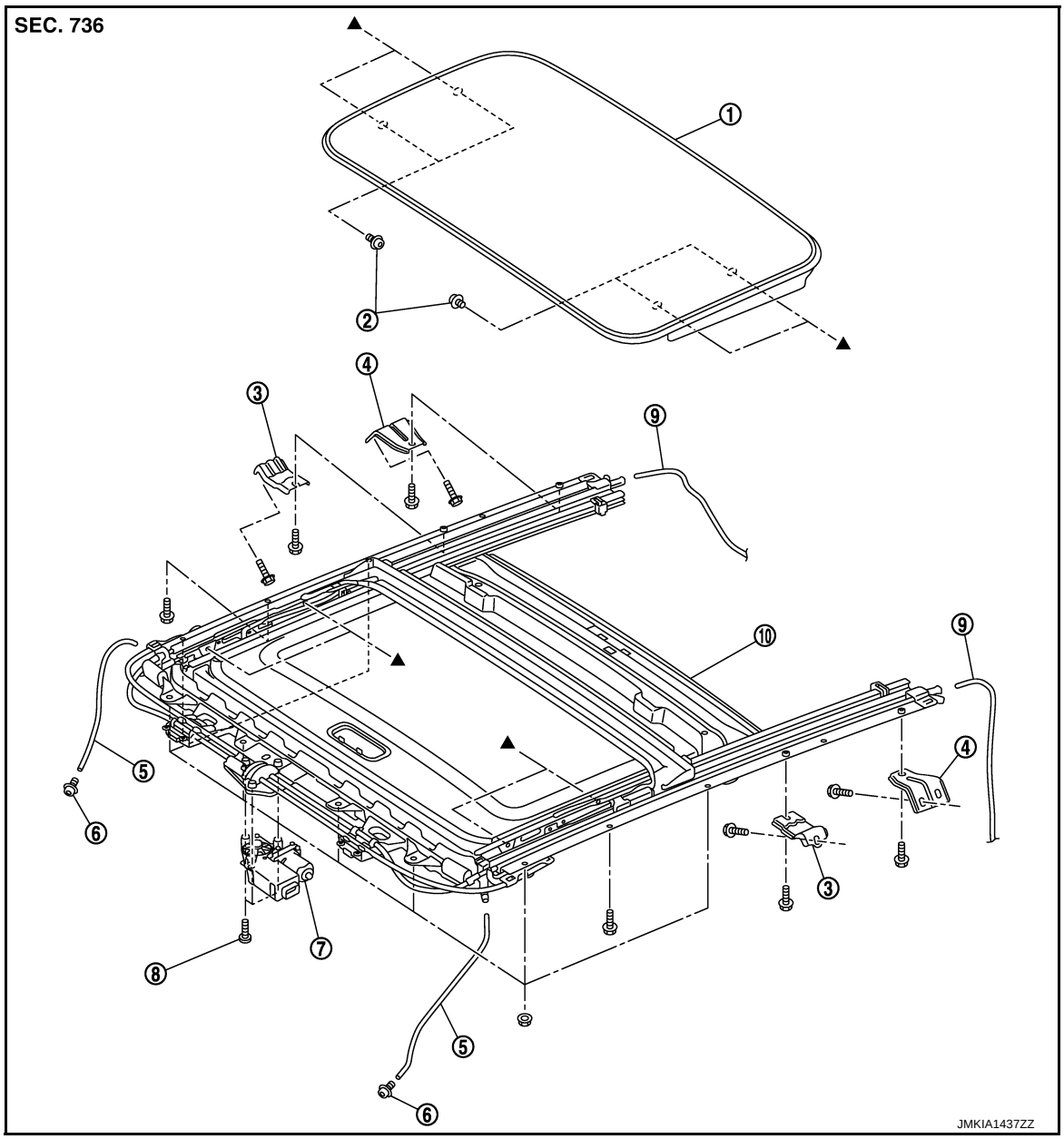
REMOVAL AND INSTALLATION

SUNROOF

GLASS LID

GLASS LID : Exploded View

INFOID:0000000008279777



1. Glass lid
2. TORX bolt
3. Sunroof front bracket (LH/RH)
4. Sunroof rear bracket (LH/RH)
5. Drain hose(front)
6. Drain connector
7. Sunroof motor assembly
8. TORX bolt
9. Drain hose(rear)
10. Sunroof unit assembly

GLASS LID : Removal and Installation

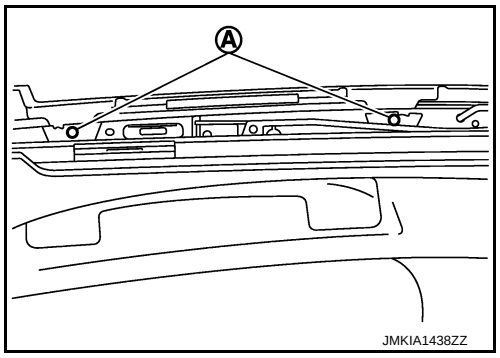
INFOID:0000000008279778

REMOVAL

CAUTION:

Always work with a helper.

1. Remove the side trim upper side, and then fold the side trim so that the TORX bolt can be seen.
2. Remove the TORX bolts (A), and then remove the glass lid.



3. Remove the sunroof lid from the vehicle.

INSTALLATION

CAUTION:

After installing the glass lid, perform the leak test and check that there is no malfunction.

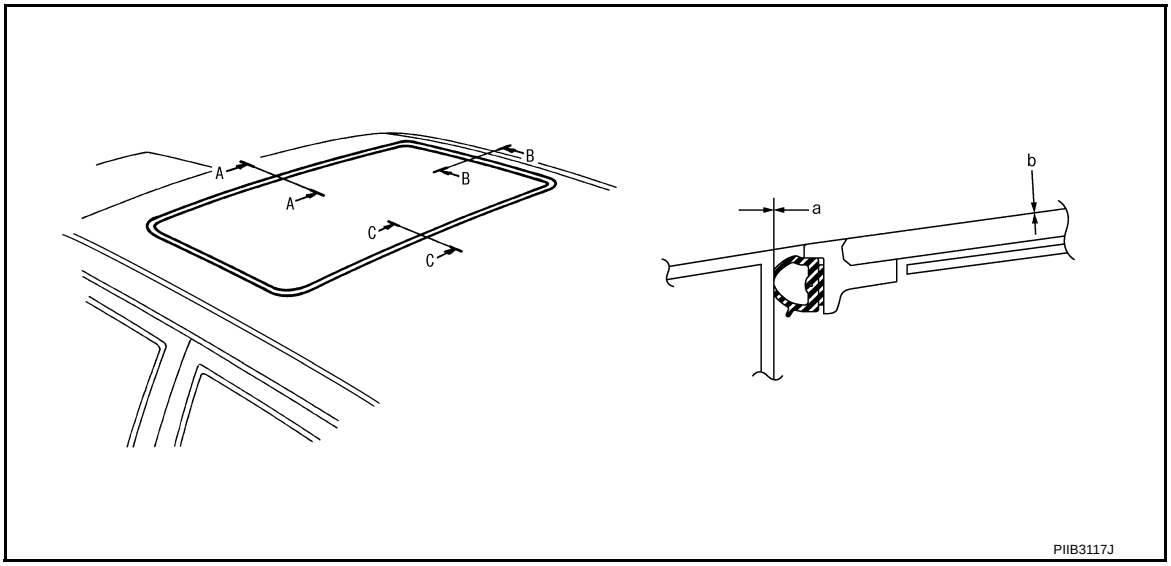
NOTE:

After installation carry out fitting adjustment. Refer to RF-55, "GLASS LID : Adjustment".

Install in the reverse order of removal.

GLASS LID : Adjustment

INFOID:0000000008279779



LID WEATHERSTRIP OVERLAP ADJUSTMENT AND SURFACE MISMATCH ADJUSTMENT

1. Remove the side trim upper side, and then fold the side trim so that the TORX bolt can be seen.
2. After loosening glass lid from TORX bolts (left and right), tilt down glass lid.
3. Adjust glass lid from outside of vehicle so it resembles “A – A” “B – B” “C – C” as shown in the figure.

	a	b
A – A	**0.5 – 1.9 mm (0.020 – 0.075 in)**	**–1.5 – 1.5 mm (–0.059 – 0.059 in)**
B – B	**0.5 – 1.9 mm (0.020 – 0.075 in)**	**–1.5 – 1.5 mm (–0.059 – 0.059 in)**
C – C	**0.5 – 1.9 mm (0.020 – 0.075 in)**	**–1.5 – 1.5 mm (–0.059 – 0.059 in)**

4. To prevent glass lid from moving after adjustment, first tighten the TORX bolts of front left, and then tighten the TORX bolts of rear right.
5. Tighten remaining TORX bolts, being careful to prevent glass lid from moving.
6. Tilt glass lid up and down several times to check that it moves smoothly.

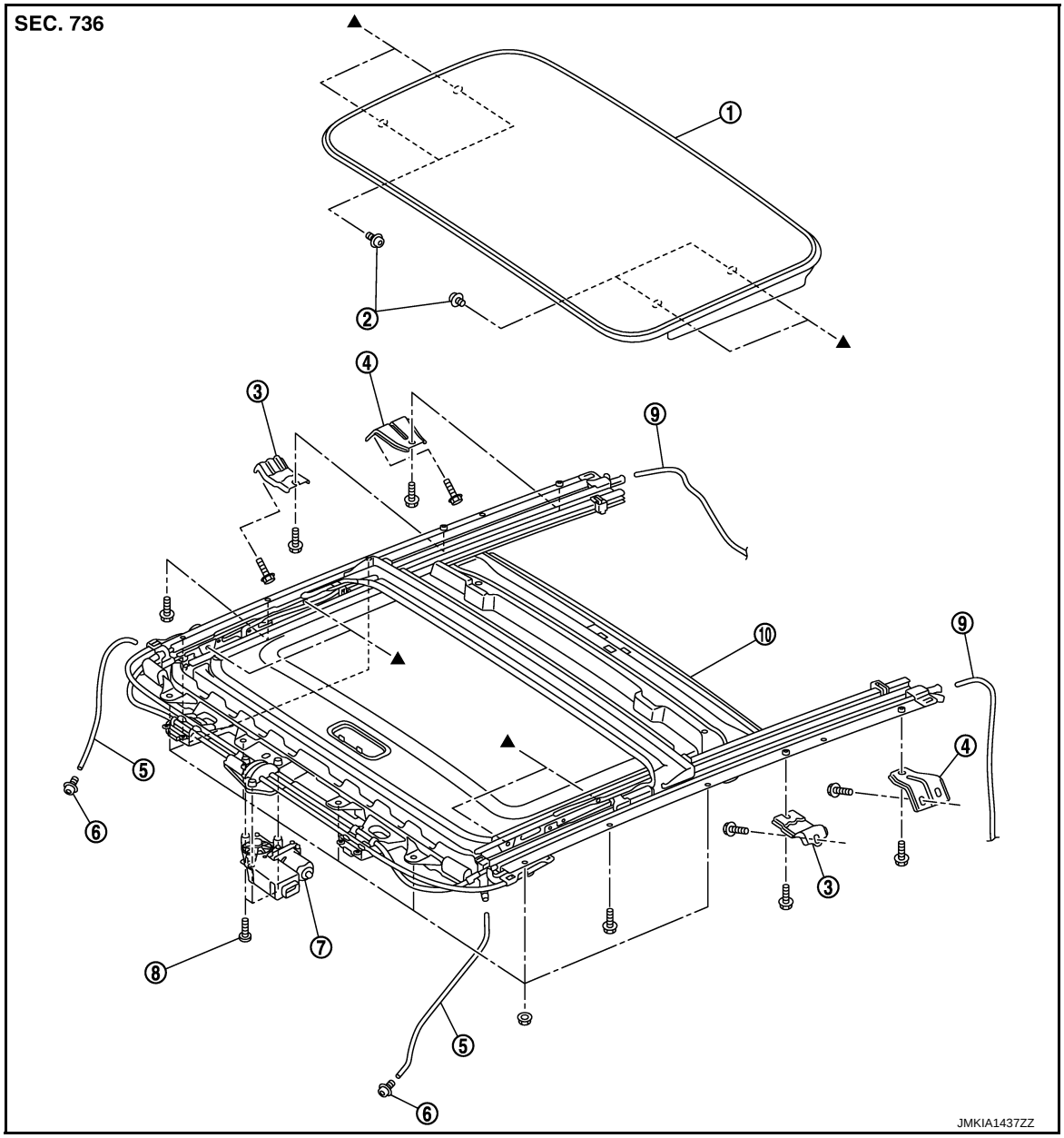
NOTE:

After adjustment the sunroof unit assembly, perform additional service. Refer to RF-4, "ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Special Repair Requirement".

SUNROOF MOTOR ASSEMBLY

SUNROOF MOTOR ASSEMBLY : Exploded View

INFOID:0000000008279780



1. Glass lid
2. TORX bolt
3. Sunroof front bracket (LH/RH)
4. Sunroof rear bracket (LH/RH)
5. Drain hose(front)
6. Drain connector
7. Sunroof motor assembly
8. TORX bolt
9. Drain hose(rear)
10. Sunroof unit assembly

SUNROOF MOTOR ASSEMBLY : Removal and Installation

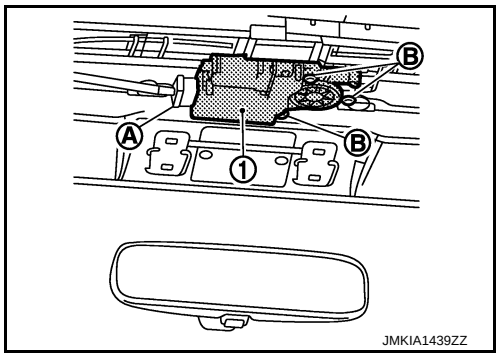
INFOID:0000000008279781

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. Remove the headlining. Refer to INT-27, "SUNROOF : Removal and Installation".
2. Disconnect connector (A) and from sunroof motor assembly. Remove sunroof motor assembly mounting TORX bolts (B), and then remove sunroof motor assembly (1).



INSTALLATION

CAUTION:

Before installing the sunroof motor assembly, be sure to the place the link and wire assembly in the symmetrical and fully closed position.

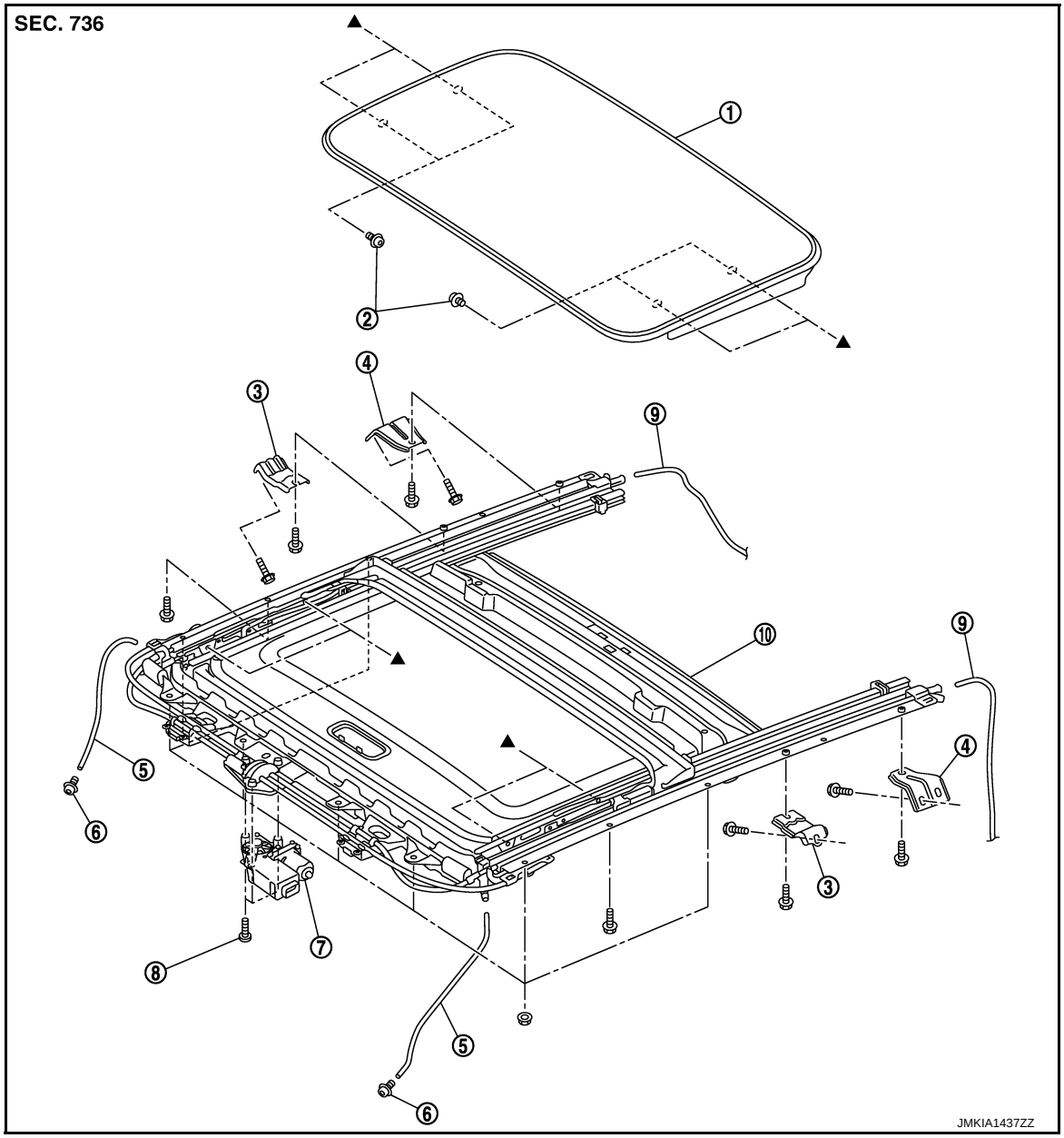
1. Move the sunroof motor assembly laterally by little so that the gear is completely engaged into the wire on the sunroof unit assembly and mounting surface becomes parallel. Then secure the sunroof motor assembly with TORX bolts.
2. Install the headlining. Refer to INT-27, "SUNROOF : Removal and Installation".

SUNROOF UNIT ASSEMBLY

SUNROOF UNIT ASSEMBLY : Exploded View

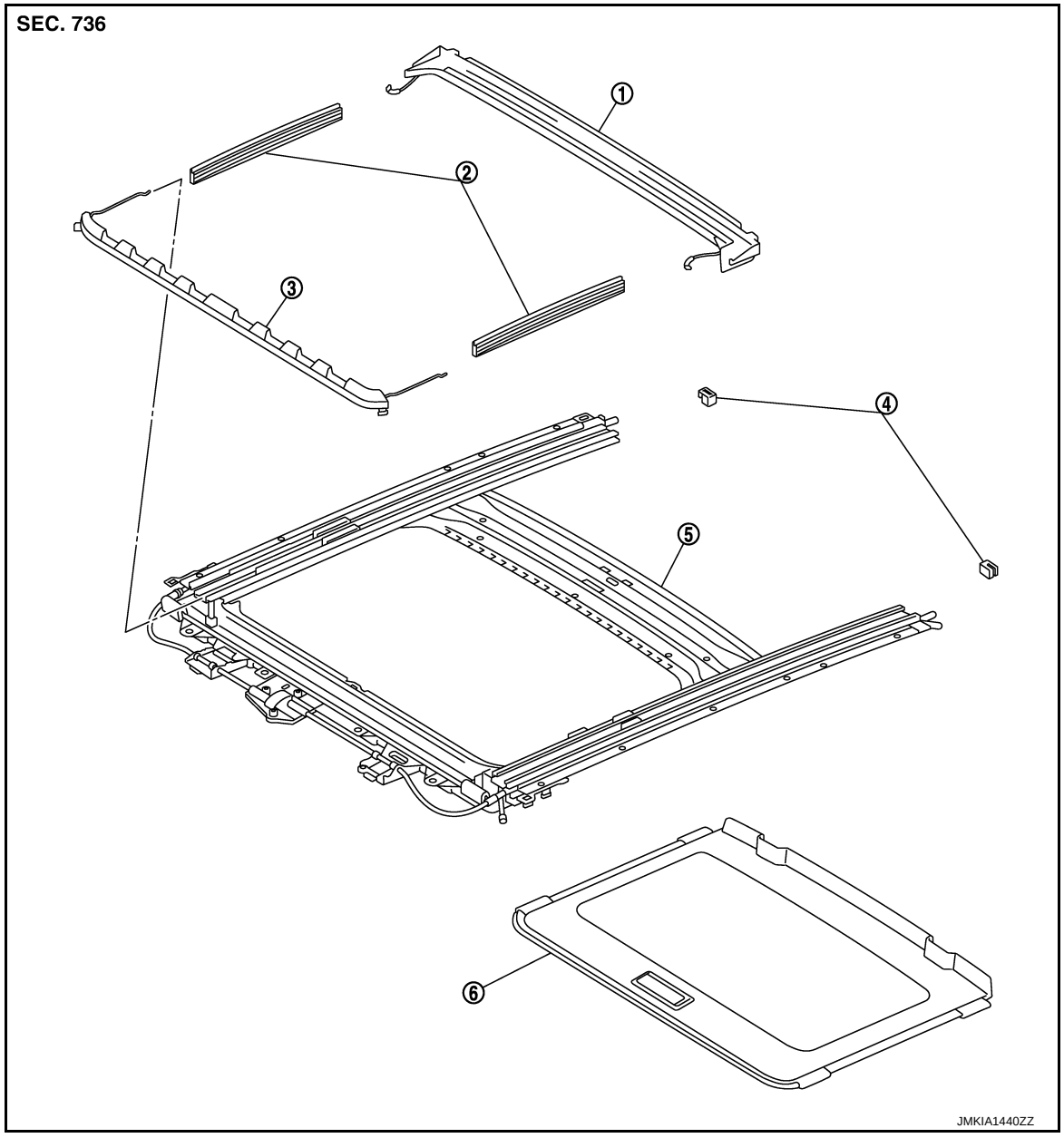
INFOID:0000000008279782

REMOVAL



1. Glass lid
2. TORX bolt
3. Sunroof front bracket (LH/RH)
4. Sunroof rear bracket (LH/RH)
5. Drain hose(front)
6. Drain connector
7. Sunroof motor assembly
8. TORX bolt
9. Drain hose(rear)
10. Sunroof unit assembly

DISASSEMBLY



1. Rear drain
2. Side trim (LH/RH)
3. Wind deflector
4. Sunshade stopper (LH/RH)
5. Sunroof frame
6. Sunshade

SUNROOF UNIT ASSEMBLY : Removal and Installation

INFOID:0000000008279783

REMOVAL

CAUTION:

- **Always work with a helper.**
- **Fully close the glass lid, before removal, then never operate sunroof motor assembly after removal.**
- **When taking sunroof unit assembly out, use cloths to protect the seats and trim from damage.**

1. Remove the headlining. Refer to INT-27, "SUNROOF : Removal and Installation".
2. Remove the glass lid. Refer to RF-54, "GLASS LID : Removal and Installation".
3. Remove the sunroof motor assembly. Refer to RF-56, "SUNROOF MOTOR ASSEMBLY : Removal and Installation"
4. Disconnect drain hoses.
5. Remove the sunroof front brackets (LH/RH).
6. Remove the sunroof rear brackets (LH/RH).

7. Remove nuts from the front end and side rail, and then remove sunroof unit assembly from roof panel.
8. Remove sunroof unit assembly through the back door while being careful not to damage the seats and trim.

INSTALLATION

CAUTION:

After installing the sunroof unit assembly and glass lid, perform the leak test and check that there is no malfunction.

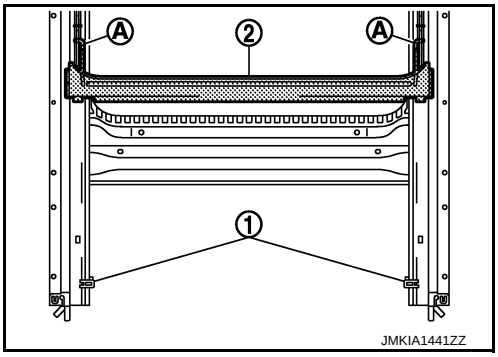
1. Temporarily tighten the mounting bolts to the sunroof rear brackets (LH/RH).
2. Bring sunroof unit into back door, and then place the rear end of the rail onto the sunroof brackets.
3. Temporarily tighten the mounting nuts to the front end of sunroof unit assembly.
4. Temporarily tighten the mounting bolts to the sunroof front and rear brackets (LH/RH)
5. Tighten the installation points diagonally excluding the installation point of the sunroof bracket around the roof opening.
6. Tighten the mounting nuts to the front end and side rail.
7. Tighten the sunroof bracket bolts of the vehicle side, and then tighten the bolt of the rail side.
8. Connect drain hoses.
9. Install the glass lid. Refer to RF-54, "GLASS LID : Removal and Installation".
   NOTE:
   After installation, carry out fitting adjustment. Refer to RF-55, "GLASS LID : Adjustment".
10. Install the headlining. Refer to INT-27, "SUNROOF : Removal and Installation".

SUNROOF UNIT ASSEMBLY : Disassembly and Assembly

INFOID:0000000008279784

DISASSEMBLY

1. Remove sunshade stopper (1) (LH/RH) from the rear end of sunroof frame.
2. Remove sunshade from the rear end of sunroof frame.
3. Remove the rear drain linkage (A) from the sunroof frame.
4. Remove the rear drain (2) from the rear end of suroof frame.
5. Remove the side trim (LH/RH) from the rear end of sunroof frame.



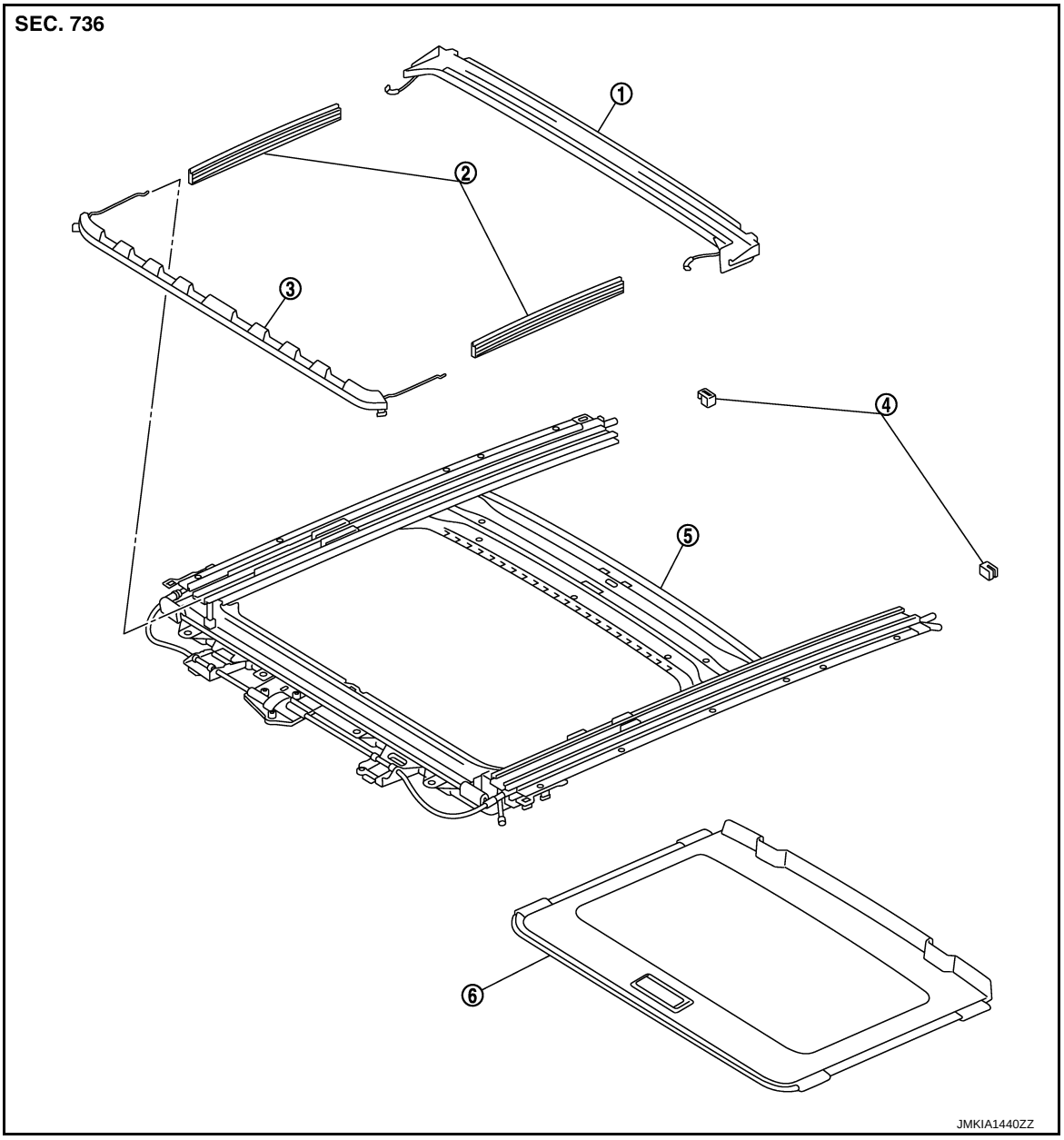
ASSEMBLY

Assemble in the reverse order of disassembly.

SUNSHADE

SUNSHADE : Exploded View

INFOID:0000000008279785



1. Rear drain
2. Side trim (LH/RH)
3. Wind deflector
4. Sunshade stopper (LH/RH)
5. Sunroof frame
6. Sunshade

SUNSHADE : Removal and Installation

INFOID:0000000008279786

REMOVAL

1. Remove the headlining. Refer to INT-27, "SUNROOF : Removal and Installation".
2. Remove the sunshade stopper (LH/RH) from the sunroof frame end.
3. Remove the sunshade from the rear end of sunroof frame.

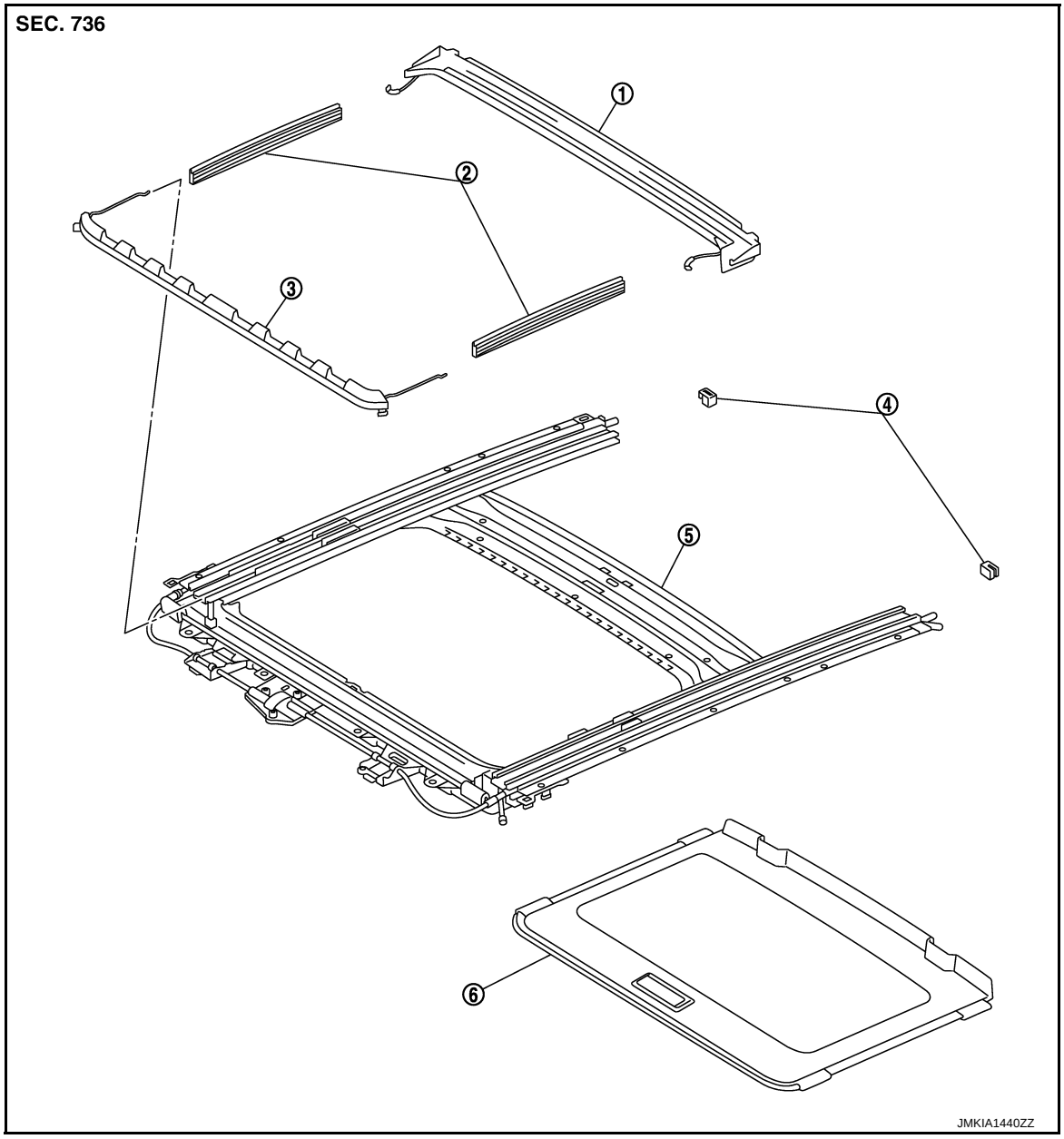
INSTALLATION

Install in the reverse order of removal.

WIND DEFLECTOR

WIND DEFLECTOR : Exploded View

INFOID:0000000008279787



1. Rear drain
2. Side trim (LH/RH)
3. Wind deflector
4. Sunshade stopper (LH/RH)
5. Sunroof frame
6. Sunshade

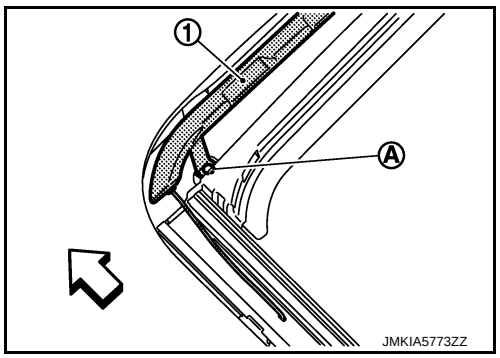
WIND DEFLECTOR : Removal and Installation

INFOID:0000000008279788

Removal

1. Open the glass lid to see the wind deflector installation point on the sun roof slide rail.
2. Remove wind deflector (1) mounting TORX bolts (A) (LH and RH).

⇦ : Vehicle front



3. Move the wind deflector from under the roof panel to upper the roof panel, and then remove the springs (LH and RH) from sunroof frame groove.
4. Remove the wind deflector from the vehicle.

Installation
Install in the reverse order of removal.

SUNROOF SWITCH

SUNROOF SWITCH : Exploded View

INFOID:0000000008279789

Refer to INL-59, "Exploded View".

SUNROOF SWITCH : Removal and Installation

INFOID:0000000008279790

Removal
Remove the sunroof switch. Refer to INL-59, "Removal and Installation".

Installation
Install in the reverse order of removal.