SECTION PWC

POWER WINDOW CONTROL SYSTEM

CONTENTS

BASIC INSPECTION 4

DIAGNOSIS AND REPAIR WORKFLOW 4
Work Flow 4

SYSTEM DESCRIPTION 5

POWER WINDOW SYSTEM 5
System Diagram 5
System Description 5
Component Parts Location 7
Component Description 8

DIAGNOSIS SYSTEM (BCM) 9

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

RETAINED PWR 10
RETAINED PWR : CONSULT Function (BCM - RETAINED PWR) 10

DTC/CIRCUIT DIAGNOSIS 11

POWER SUPPLY AND GROUND CIRCUIT 11

POWER WINDOW MAIN SWITCH 11
POWER WINDOW MAIN SWITCH : Description 11
POWER WINDOW MAIN SWITCH : Component Function Check 11
POWER WINDOW MAIN SWITCH : Diagnosis Procedure 11
POWER WINDOW MAIN SWITCH : Component Inspection 14

FRONT POWER WINDOW SWITCH 15
FRONT POWER WINDOW SWITCH : Description 15
FRONT POWER WINDOW SWITCH : Component Function Check 15
FRONT POWER WINDOW SWITCH : Diagnosis Procedure 15

REAR POWER WINDOW SWITCH 17
REAR POWER WINDOW SWITCH : Description 17
REAR POWER WINDOW SWITCH : Component Function Check 17
REAR POWER WINDOW SWITCH : Diagnosis Procedure 17
REAR POWER WINDOW SWITCH : Component Inspection 19

POWER WINDOW MOTOR 20

DRIVER SIDE 20
DRIVER SIDE : Description 20
DRIVER SIDE : Component Function Check 20
DRIVER SIDE : Diagnosis Procedure 20
DRIVER SIDE : Component Inspection 21

PASSENGER SIDE 21
PASSENGER SIDE : Description 21
PASSENGER SIDE : Component Function Check 21
PASSENGER SIDE : Diagnosis Procedure 21
PASSENGER SIDE : Component Inspection 22

REAR LH 23
REAR LH : Description 23
REAR LH : Component Function Check 23
REAR LH : Diagnosis Procedure 23
REAR LH : Component Inspection 24

REAR RH 24
REAR RH : Description 24
REAR RH : Component Function Check 24
REAR RH : Diagnosis Procedure 25
REAR RH : Component Inspection 26

ENCODER 27

DRIVER SIDE 27
DRIVER SIDE : Description 27
DRIVER SIDE : Component Function Check 27
DRIVER SIDE : Diagnosis Procedure 27

PASSENGER SIDE 29
PASSENGER SIDE : Description 29
PASSENGER SIDE : Component Function Check ... 29
PASSENGER SIDE : Diagnosis Procedure 29

DOOR SWITCH 33
Description 33
Component Function Check 33
Diagnosis Procedure 33
Component Inspection 34

DOOR KEY CYLINDER SWITCH 35
Description 35
Component Function Check 35
Diagnosis Procedure 35
Component Inspection 36

POWER WINDOW SERIAL LINK 38

POWER WINDOW MAIN SWITCH 38
POWER WINDOW MAIN SWITCH : Description ... 38
POWER WINDOW MAIN SWITCH : Component Function Check 38
POWER WINDOW MAIN SWITCH : Diagnosis Procedure 38

FRONT POWER WINDOW SWITCH 39
FRONT POWER WINDOW SWITCH : Description 39
FRONT POWER WINDOW SWITCH : Component Function Check 39
FRONT POWER WINDOW SWITCH : Diagnosis Procedure 40

POWER WINDOW LOCK SWITCH 42
Description 42
Component Function Check 42

REAR POWER VENT WINDOW SWITCH CIRCUIT CHECK 43
Description 43
Diagnosis Procedure 43

REAR POWER VENT WINDOW MOTOR LH CIRCUIT CHECK 44
Description 44
Diagnosis Procedure 44

REAR POWER VENT WINDOW MOTOR RH CIRCUIT CHECK 45
Description 45
Diagnosis Procedure 45

REAR POWER VENT WINDOW RELAY (OPEN) CHECK 46
Description 46
Diagnosis Procedure 46

REAR POWER VENT WINDOW RELAY (CLOSE) CHECK 48
Description 48
Diagnosis Procedure 48

ECU DIAGNOSIS INFORMATION 50

POWER WINDOW MAIN SWITCH 50
Reference Value 50
Fail Safe 51

FRONT POWER WINDOW SWITCH 53
Reference Value 53
Fail Safe 54

BCM (BODY CONTROL MODULE) 55
Reference Value 55
Terminal Layout 58
Physical Values 58
Fail Safe 63
DTC Inspection Priority Chart 64
DTC Index 64

WIRING DIAGRAM 66

POWER WINDOW SYSTEM 66
Wiring Diagram 66

SYMPTOM DIAGNOSIS 76

NONE OF THE POWER WINDOWS CAN BE OPERATED USING ANY SWITCH 76
Diagnosis Procedure 76

DRIVER SIDE POWER WINDOW ALONE DOES NOT OPERATE 77
Diagnosis Procedure 77

FRONT PASSENGER SIDE POWER WINDOW ALONE DOES NOT OPERATE 78
Diagnosis Procedure 78

REAR LH SIDE POWER WINDOW ALONE DOES NOT OPERATE 79
Diagnosis Procedure 79

REAR RH SIDE POWER WINDOW ALONE DOES NOT OPERATE 80
Diagnosis Procedure 80

ANTI-PINCH SYSTEM DOES NOT OPERATE NORMALLY (DRIVER SIDE) 81
Diagnosis Procedure 81

ANTI-PINCH SYSTEM DOES NOT OPERATE NORMALLY (PASSENGER SIDE) 82
Diagnosis Procedure 82

AUTO OPERATION DOES NOT OPERATE BUT MANUAL OPERATES NORMALLY (DRIVER SIDE) 83
Diagnosis Procedure 83

AUTO OPERATION DOES NOT OPERATE BUT MANUAL OPERATES NORMALLY (PASSENGER SIDE) 84
Diagnosis Procedure 84

POWER WINDOW RETAINED POWER OPERATION DOES NOT OPERATE PROPERLY 85
Diagnosis Procedure 85

DOES NOT OPERATE BY KEY CYLINDER SWITCH 86
Diagnosis Procedure 86

KEYLESS POWER WINDOW DOWN DOES NOT OPERATE 87
Diagnosis Procedure 87

POWER WINDOW LOCK SWITCH DOES NOT FUNCTION 88
Diagnosis Procedure 88

REAR POWER VENT WINDOWS DO NOT OPERATE 89
Diagnosis Procedure 89

PRECAUTION 90

PRECAUTIONS 90
Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" 90
Precaution Necessary for Steering Wheel Rotation After Battery Disconnect 90
Precaution for Work 91

PREPARATION 92

PREPARATION 92
Special Service Tool 92

REMOVAL AND INSTALLATION 93

POWER WINDOW MAIN SWITCH 93
Removal and Installation 93

FRONT POWER WINDOW SWITCH 94
Removal and Installation 94

REAR POWER WINDOW SWITCH 95
Removal and Installation 95

REAR POWER VENT WINDOW SWITCH 96
Removal and Installation 96

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000007317389

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 vehicle 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 and then identify where to start performing the diagnosis based on possible causes and symptoms.

>> GO TO 4

4. IDENTIFY THE 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 >> Refer to GI-38, "Intermittent Incident".

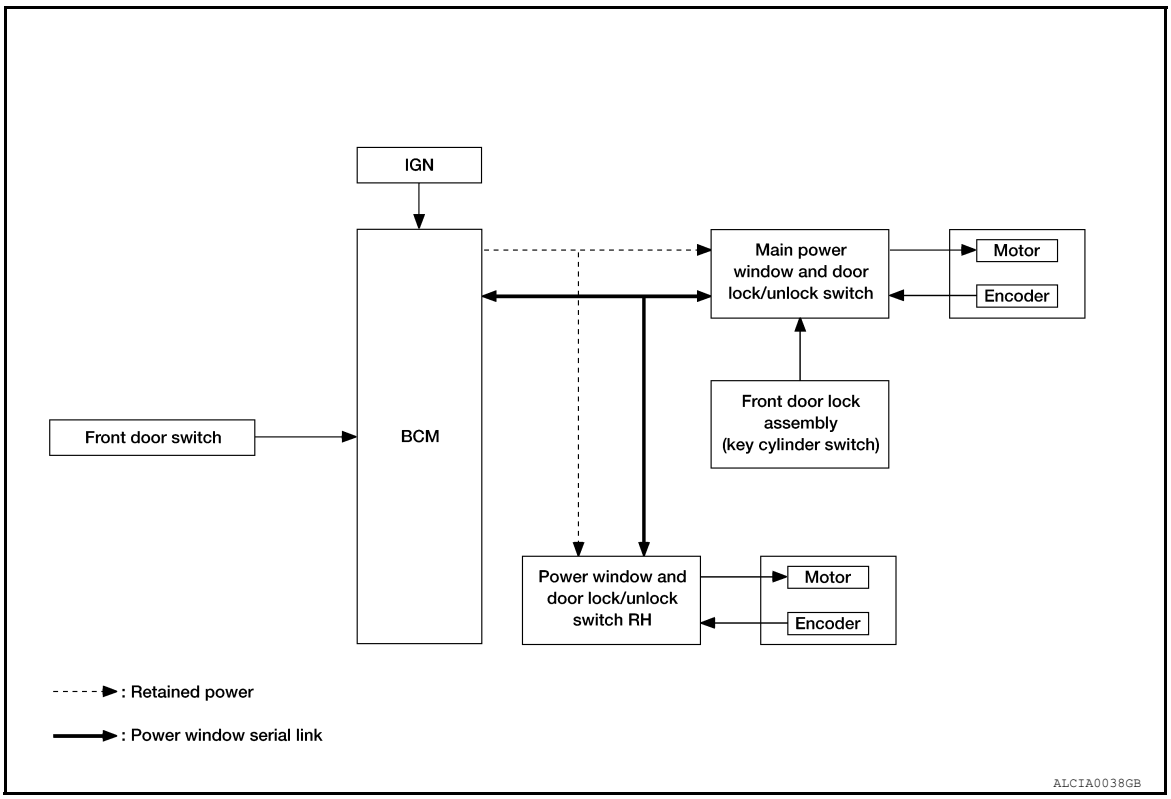
SYSTEM DESCRIPTION

POWER WINDOW SYSTEM

System Diagram

INFOID:0000000007317390

FRONT WINDOW ANTI-PINCH SYSTEM



System Description

INFOID:0000000007317391

POWER WINDOW MAIN SWITCH

INPUT/OUTPUT SIGNAL CHART

Item	Input signal to main power window and door lock/unlock switch	Main power window and door lock/unlock switch function	Actuator
Key cylinder switch	LOCK/UNLOCK signal (more than 1.5 seconds over)	Power window control	Front power window motor
Encoder	Encoder pulse signal		
Main power window and door lock/unlock switch	Front power window motor LH UP/ DOWN signal		
Power window and door lock/unlock switch RH	Front power window motor RH UP/ DOWN signal		
BCM	RAP signal		
Rear power window switch	Rear power window motor UP/DOWN signal		Rear power window motor

POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH

INPUT/OUTPUT SIGNAL CHART

Item	Input signal to front power window switch	Front power window switch function	Actuator
Power window and door lock/unlock switch RH	Front power window motor RH UP/ DOWN signal	Power window control	Front power window motor RH
Encoder	Encoder pulse signal		
BCM	RAP signal		

POWER WINDOW OPERATION

- Power window system is operable during the retained power operation timer after turning ignition switch ON and OFF.
- Main power window and door lock/unlock switch can open/close all windows.
- Power window and door lock unlock switch RH & rear power window switches LH and RH can open/close the corresponding windows.

REAR POWER VENT WINDOW OPERATION (IF EQUIPPED)

- Rear power vent window system is operable during the retained power operation timer after turning ignition switch ON and OFF.
- Rear power vent window switch can open/close the rear power vent window LH and RH.

POWER WINDOW AUTO-OPERATION (FRONT LH & RH)

- AUTO UP/DOWN operation can be performed when main power window and door lock/unlock switch & power window and door lock/unlock switch RH turns to AUTO.
- Encoder continues detecting the movement of power window motor and transmits to power window switch as the encoder pulse signal while power window motor is operating.
- Power window switch reads the changes of encoder signal and stops AUTO operation when door glass is at fully opened/closed position.
- Power window motor is operable in case encoder is malfunctioning.

RETAINED POWER OPERATION

- Retained power operation is an additional power supply function that enables power window system to operate during the 45 seconds even 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.
- When timer time passes. (45 seconds)

POWER WINDOW LOCK

Ground circuit inside main power window and door lock/unlock switch shuts off when power window lock switch is ON. This inhibits power window switch operation except with the main power window and door lock/unlock switch.

ANTI-PINCH OPERATION (FRONT LH & RH)

- Pinch foreign material in the door glass during AUTO-UP operation, and it is the anti-pinch function that lowers the door glass 150 mm (5.91 in) or 2 seconds when detected.
- Encoder continues detecting the movement of power window motor and transmits to power window switch as the encoder pulse signal while power window motor is operating.
- Resistance is applied to the power window motor rotation that changes the frequency of encoder pulse signal if foreign material is trapped in the door glass.
- Power window switch controls to lower the window glass for 150 mm (5.91 in) or 2 seconds after it detects encoder pulse signal frequency change.

OPERATION CONDITION

- When all door glass AUTO-UP operation is performed (anti-pinch function does not operate just before the door glass closes and is fully closed)

NOTE:

Depending on environment and driving conditions, if a similar impact or load is applied to the door glass, it may lower.

KEY CYLINDER SWITCH OPERATION

Hold the door key cylinder to the LOCK or UNLOCK direction for more than 1 second to OPEN or CLOSE front power windows when ignition switch is OFF. In addition, it stops when key position is moved to NEUTRAL when operating.

OPERATION CONDITION

- Ignition switch OFF
- Hold door key cylinder to LOCK position for more than 1 second to perform CLOSE operation of the door glass.
- Hold door key cylinder to UNLOCK position for more than 1 second to perform OPEN operation of the door glass.

KEYLESS POWER WINDOW DOWN OPERATION (FRONT LH & RH)

Front power windows open when the unlock button on Intelligent Key or keyfob is activated and kept pressed for more than 3(NOTE) seconds with the ignition switch OFF. The windows keep opening if the unlock button is continuously pressed.

The power window opening stops when the following operations are performed:

- When the unlock button is kept pressed more than 15 seconds.
- When the ignition switch is turned ON while the power window opening is operated.
- When the unlock button is released.

While retained power operation activate, keyless power window down function cannot be operated.

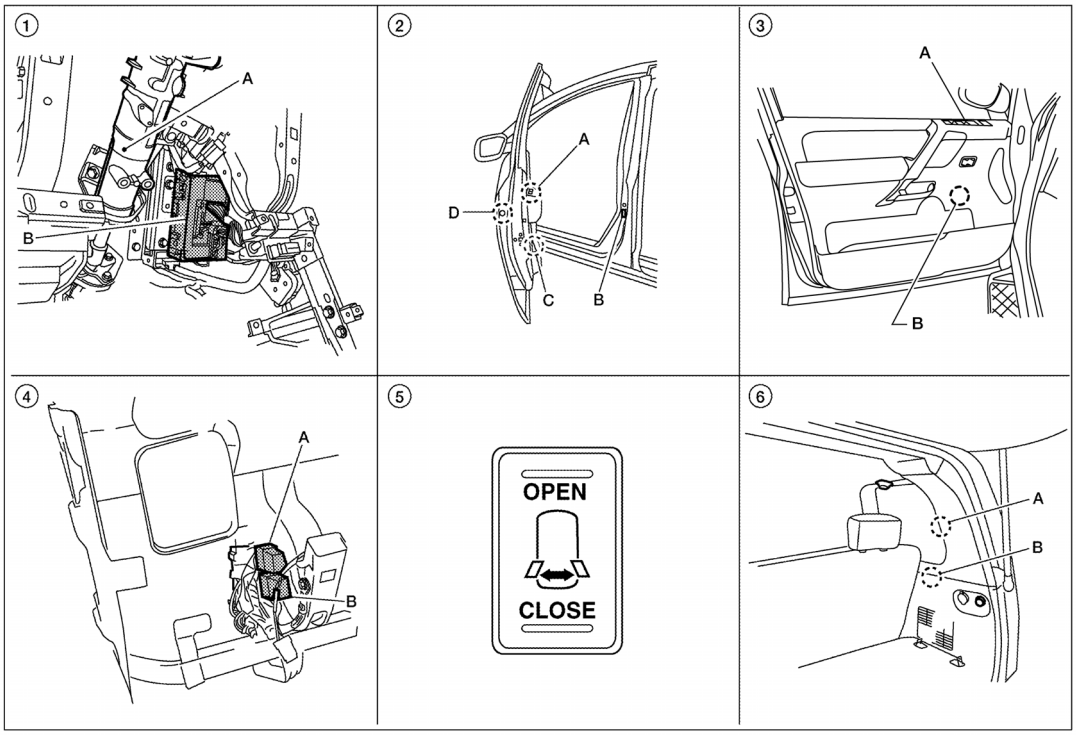
NOTE:

Use CONSULT to change settings.

MODE1 (3sec)/MODE2 (OFF)/MODE3 (5sec)

Component Parts Location

INFOID:0000000007317392



ALKIA1935ZZ

1. A. Steering column
   B. BCM M18, M19, M20 (view with instrument panel removed)
2. A. Main power window and door lock/unlock switch D7, D8
   Power window and door lock/unlock switch RH D105
   B. Front door switch LH B8, RH B108
   C. Front power window motor LH D9, RH D104
   D. Front door lock assembly LH (key cylinder switch) D14
3. A. Rear power window switch LH D203, RH D303
   B. Rear power window motor LH D204, RH D304
4. A. Rear power vent window relay (CLOSE) M89
   B. Rear power vent window relay (OPEN) M87
5. Rear power vent window switch M95 (if equipped)
6. A. Rear power vent window motor LH B52, RH B150 (if equipped)
   B. Condenser-3 B119
   Condenser-4 B120

Component Description

INFOID:0000000007317393

FRONT WINDOW ANTI-PINCH SYSTEM

Component	Function
BCM	• Supplies power supply to power window switch. • Controls retained power.
Main power window and door lock/unlock switch	• Directly controls all power window motor of all doors. • Controls anti-pinch operation of front power window LH.
Power window and door lock/unlock switch RH	• Controls front power window motor RH. • Controls anti-pinch operation of front power window RH.
Rear power window switch	• Controls rear power window motors LH and RH.
Front power window motor LH	• Integrates the ENCODER and POWER WINDOW MOTOR. • Starts operating with signals from main power window and door lock/unlock switch. • Transmits power window motor rotation as a pulse signal to main power window and door lock/unlock switch.
Front power window motor RH	Starts operating with signals from main power window and door lock/unlock switch & power window and door lock/unlock switch RH.
Rear power window motor	Starts operating with signals from main power window and door lock/unlock switch & rear power window switch.
Front door lock assembly LH (key cylinder switch)	Transmits operation condition of key cylinder switch to power window main switch.
Front door switch LH or RH	Detects door open/close condition and transmits to BCM.

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

INFOID:0000000007794037

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

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

SYSTEM APPLICATION
BCM can perform the following functions.

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

RETAINED PWR

RETAINED PWR : CONSULT Function (BCM - RETAINED PWR)

INFOID:0000000007794038

DATA MONITOR

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

ACTIVE TEST

Test Item	Description
RETAINED PWR	This test is able to check retained power operation [Off/On].

WORK SUPPORT

Support Item	Setting		Description
RETAINED PWR SET	MODE3	2 min	Sets the retained accessory power operating time.
	MODE2	OFF	
	MODE1*	45 sec	

*: Initial setting

DTC/CIRCUIT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT

POWER WINDOW MAIN SWITCH

POWER WINDOW MAIN SWITCH : Description

INFOID:0000000007317396

- BCM supplies power.
- It operates each power window motor via corresponding power window switch and makes window move up/down when main power window and door lock/unlock switch is operated.

POWER WINDOW MAIN SWITCH : Component Function Check

INFOID:0000000007317397

Main Power Window And Door Lock/Unlock Switch

1. CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH FUNCTION

Does power window motor operate with main power window and door lock/unlock switch operation?

Is the inspection result normal?

YES >> Main power window and door lock/unlock switch power supply and ground circuit are OK.
NO >> Refer to PWC-11, "POWER WINDOW MAIN SWITCH : Diagnosis Procedure".

POWER WINDOW MAIN SWITCH : Diagnosis Procedure

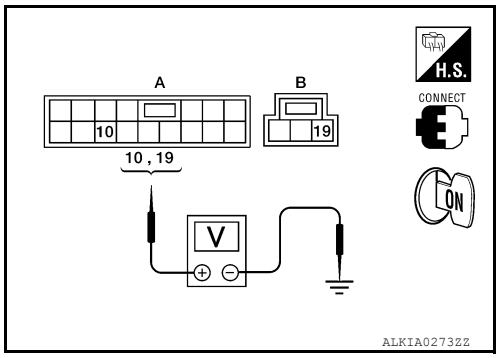
INFOID:0000000007317398

Regarding Wiring Diagram information, refer to PWC-66, "Wiring Diagram".

1. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between main power window and door lock/unlock switch connectors and ground.

Terminal			Voltage (V) (Approx.)
(+)		(–)	
Main power window and door lock/unlock switch connector	Terminal		
D7 (A)	10	Ground	Battery voltage
D8 (B)	19		



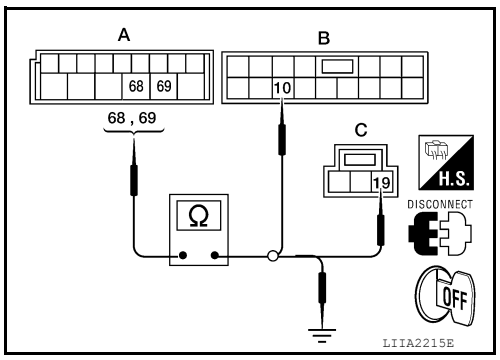
Is the measurement value within the specification?

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

2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect BCM and main power window and door lock/unlock switch.
3. Check continuity between BCM connector and main power window and door lock/unlock switch connectors.

BCM connector	Terminal	Main power window and door lock/unlock switch connector	Terminal	Continuity
M20 (A)	68	D7 (B)	10	Yes
	69	D8 (C)	19	



4. Check continuity between BCM connector (A) and ground.

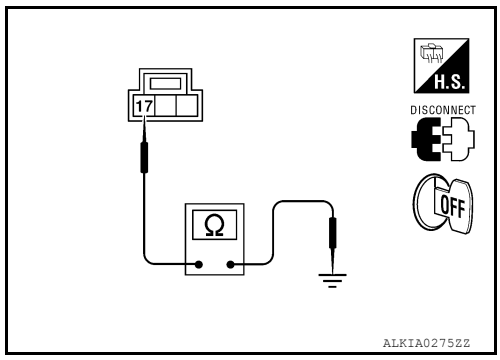
BCM connector	Terminal	Ground	Continuity
M20 (A)	68		No
	69		

Is the inspection result normal?

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

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect main power window and door lock/unlock switch.
3. Check continuity between main power window and door lock/unlock switch connector and ground.



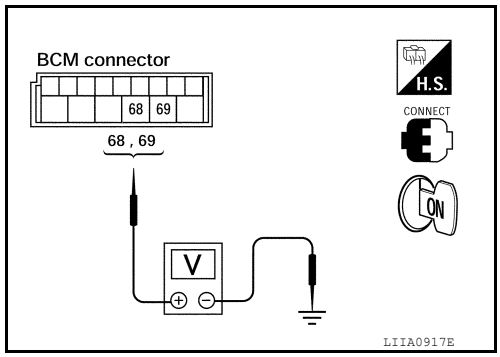
Main power window and door lock/unlock switch connector	Terminal	Ground	Continuity
D8	17		Yes

Is the inspection result normal?

YES >> Replace main power window and door lock/unlock switch. Refer to PWC-93, "Removal and Installation".
NO >> Repair or replace harness.

4. CHECK BCM OUTPUT SIGNAL

1. Connect BCM.
2. Turn ignition switch ON.
3. Check voltage between BCM connector and ground.



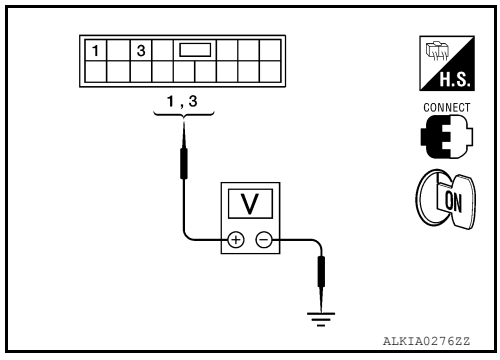
Terminals			Voltage (V) (Approx.)
(+)		(–)	
BCM connector	Terminal		
M20	68	Ground	Battery voltage
	69		

Is the measurement value within the specification?

YES >> Check main power window and door lock/unlock switch output signal (rear power window switch LH) GO TO 5
YES >> Check main power window and door lock/unlock switch output signal (rear power window switch RH) GO TO 6
NO >> Replace BCM. Refer to BCS-54, "Removal and Installation".

5. CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH OUTPUT SIGNAL (REAR POWER WINDOW SWITCH LH)

1. Turn ignition switch ON.
2. Check voltage between main power window and door lock/unlock switch connector and ground.



Terminal			Window condition	Voltage (V) (Approx.)
(+)		(–)		
Main power window and door lock/unlock switch connector	Terminal			
D7	1	Ground	UP	Battery voltage
			DOWN	0
	3		UP	0
			DOWN	Battery voltage

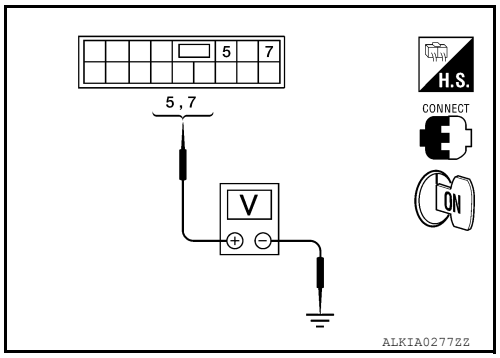
Is the measurement value within the specification?

YES >> GO TO 7

NO >> Replace main power window and door lock/unlock switch. Refer to PWC-93, "Removal and Installation".

6. CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH OUTPUT SIGNAL (REAR POWER WINDOW SWITCH RH)

1. Turn ignition switch ON.
2. Check voltage between main power window and door lock/unlock switch connector and ground.



Terminal			Window condition	Voltage (V) (Approx.)
(+)		(–)		
Main power window and door lock/unlock switch connector	Terminal			
D7	7	Ground	UP	Battery voltage
			DOWN	0
	5		UP	0
			DOWN	Battery voltage

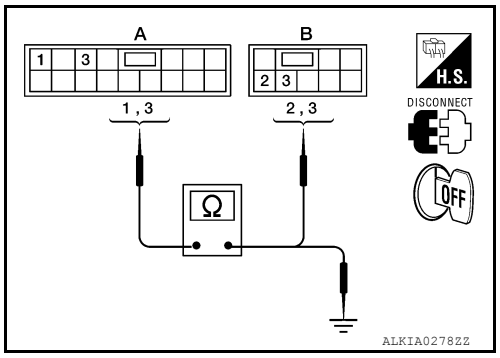
Is the measurement value within the specification?

YES >> GO TO 8

NO >> Replace main power window and door lock/unlock switch. Refer to PWC-93, "Removal and Installation".

7. CHECK HARNESS CONTINUITY (REAR POWER WINDOW SWITCH LH)

1. Turn ignition switch OFF.
2. Disconnect rear power window switch LH.
3. Check continuity between main power window and door lock/unlock switch connector and rear power window switch LH connector.



Main power window and door lock/unlock switch connector	Terminal	Rear power window switch LH connector	Terminal	Continuity
D7 (A)	1	D203 (B)	2	Yes
	3		3	

4. Check continuity between main power window and door lock/unlock switch connector and ground.

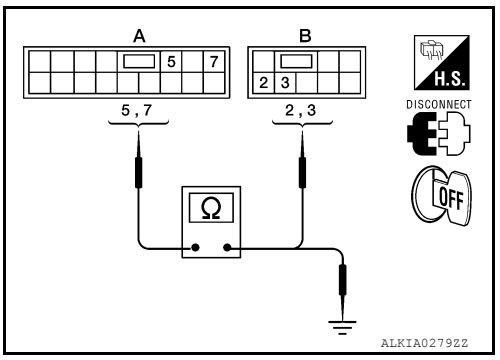
Main power window and door lock/unlock switch connector	Terminal	Ground	Continuity
D7 (A)	1		No
	3		

Is the inspection result normal?

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

8. CHECK HARNESS CONTINUITY (REAR POWER WINDOW SWITCH RH)

1. Turn ignition switch OFF.
2. Disconnect rear power window switch RH.
3. Check continuity between main power window and door lock/unlock switch connector and rear power window switch RH connector.



Main power window and door lock/unlock switch connector	Terminal	Rear power window switch RH connector	Terminal	Continuity
D7 (A)	5	D303 (B)	3	Yes
	7		2	

4. Check continuity between main power window and door lock/unlock switch connector and ground.

Main power window and door lock/unlock switch connector	Terminal	Ground	Continuity
D7 (A)	5		No
	7		

Is the inspection result normal?

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

9. CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH

Check main power window and door lock/unlock switch.
Refer to PWC-14, "POWER WINDOW MAIN SWITCH : Component Inspection".

Is the inspection result normal?

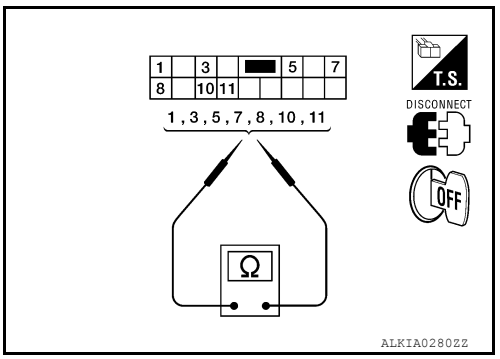
YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".
NO >> Replace main power window and door lock/unlock switch. Refer to PWC-93, "Removal and Installation".

POWER WINDOW MAIN SWITCH : Component Inspection

INFOID:0000000007317399

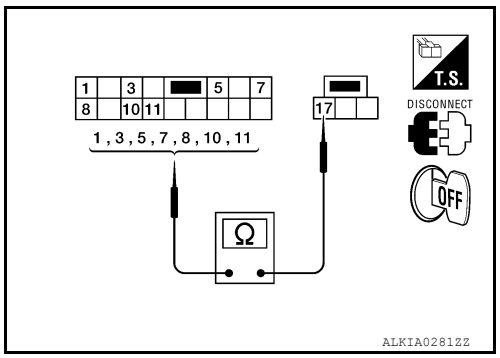
1. CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH

1. Check main power window and door lock/unlock switch.



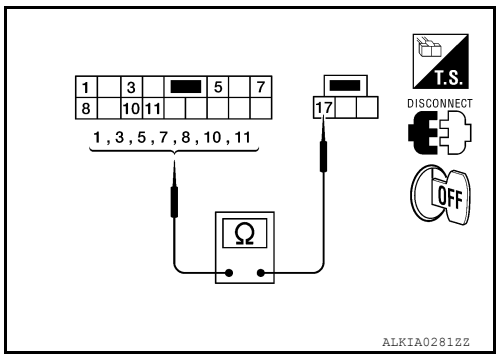
Terminal		Main power window and door lock/unlock switch condition		Continuity
10	1	Rear LH	UP	Yes
10	7	Rear RH		
1	3	Rear LH	NEUTRAL	
5	7	Rear RH		
10	3	Rear LH	DOWN	
10	5	Rear RH		

2. Check continuity between main power window and door lock/unlock switch (power window lock switch). (Lock operation).



Terminal		Main power window and door lock/unlock switch condition		Continuity
3	17	Rear LH	UP	No
5		Rear RH		
1		Rear LH	NEUTRAL	
3				
5		Rear RH		
7				
1		Rear LH	DOWN	
7		Rear RH		

3. Check continuity between main power window and door lock/unlock switch (power window lock switch). (Unlock operation).



Terminal		Main power window and door lock/unlock switch condition		Continuity
3	17	Rear LH	UP	Yes
5		Rear RH		
1		Rear LH	NEUTRAL	
3				
5		Rear RH		
7				
1		Rear LH	DOWN	
7		Rear RH		

Is the inspection result normal?

YES >> Main power window and door lock/unlock switch is OK.
NO >> Replace main power window and door lock/unlock switch. Refer to PWC-93, "Removal and Installation".

FRONT POWER WINDOW SWITCH

FRONT POWER WINDOW SWITCH : Description

INFOID:0000000007317400

- BCM supplies power.
- Front power window motor RH will be operated if power window and door lock/unlock switch RH is operated.

FRONT POWER WINDOW SWITCH : Component Function Check

INFOID:0000000007317401

Power Window And Door Lock/Unlock Switch RH

1. CHECK FRONT POWER WINDOW MOTOR RH FUNCTION

Does front power window motor RH operate with power window and door lock/unlock switch RH operation?

Is the inspection result normal?

YES >> Power window and door lock/unlock switch RH power supply and ground circuit are OK.
NO >> Refer to PWC-15, "FRONT POWER WINDOW SWITCH : Diagnosis Procedure".

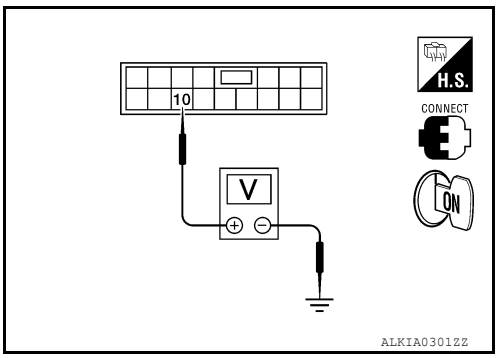
FRONT POWER WINDOW SWITCH : Diagnosis Procedure

INFOID:0000000007317402

Regarding Wiring Diagram information, refer to PWC-66, "Wiring Diagram".

1. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between power window and door lock/unlock switch RH connector and ground.



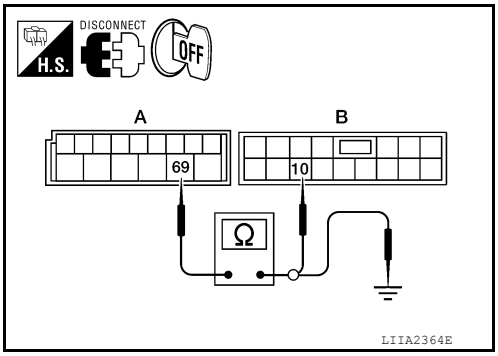
Terminal			Voltage (V) (Approx.)
(+)		(–)	
Power window and door lock/ unlock switch RH connector	Terminal		
D105	10	Ground	Battery voltage

Is the measurement value within the specification?

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

2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect BCM and power window and door lock/unlock switch RH.
3. Check continuity between BCM connector and power window and door lock/unlock switch RH connector.



BCM connector	Terminal	Power window and door lock/unlock switch RH connector	Terminal	Continuity
M20 (A)	69	D105 (B)	10	Yes

4. Check continuity between BCM connector and ground.

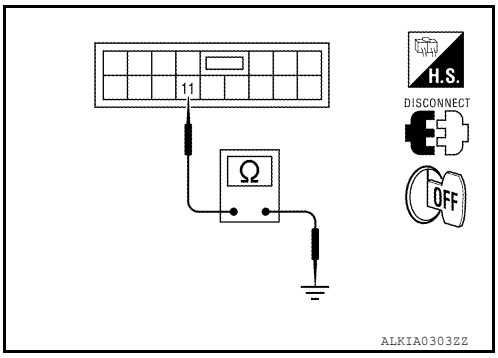
BCM connector	Terminal	Ground	Continuity
M20 (A)	69		No

Is the inspection result normal?

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

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect power window and door lock/unlock switch RH.
3. Check continuity between power window and door lock/unlock switch RH connector and ground.



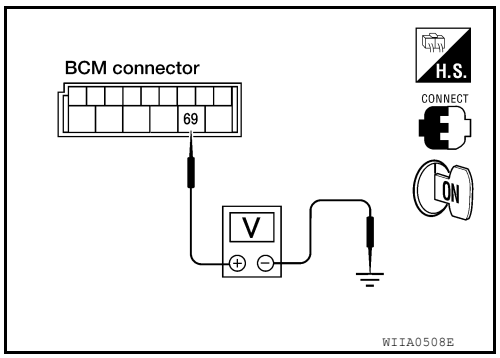
Power window and door lock/unlock switch RH	Terminal	Ground	Continuity
D105	11		Yes

Is the inspection result normal?

YES >> Replace power window and door lock/unlock switch RH. Refer to PWC-94, "Removal and Installation".
NO >> Repair or replace harness.

4. CHECK BCM OUTPUT SIGNAL

1. Connect BCM.
2. Turn ignition switch ON.
3. Check voltage between BCM connector and ground.



Terminals			Voltage (V) (Approx.)
(+)		(-)	
BCM connector	Terminal		
M20	69	Ground	Battery voltage

Is the measurement value within the specification?

YES >> Replace power window and door lock/unlock switch RH. Refer to PWC-94, "Removal and Installation".
NO >> Replace BCM. Refer to BCS-54, "Removal and Installation".

REAR POWER WINDOW SWITCH

REAR POWER WINDOW SWITCH : Description

INFOID:0000000007317403

- BCM supplies power.
- Rear power window motor will be operated if rear power window switch is operated. Rear power window switch.

REAR POWER WINDOW SWITCH : Component Function Check

INFOID:0000000007317404

Rear Power Window Switch

1. CHECK REAR POWER WINDOW MOTOR FUNCTION

Does rear power window motor operate with rear power window switch operation?

Is the inspection result normal?

YES >> Rear power window switch power supply and ground circuit are OK.
NO >> Refer to PWC-17, "REAR POWER WINDOW SWITCH : Diagnosis Procedure".

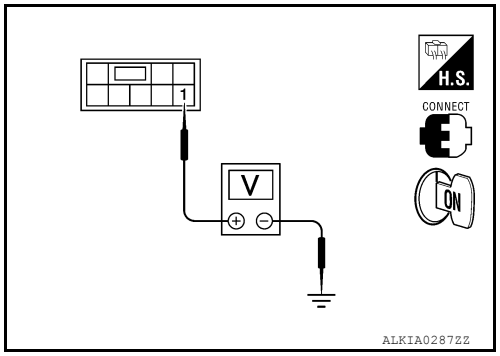
REAR POWER WINDOW SWITCH : Diagnosis Procedure

INFOID:0000000007317405

Regarding Wiring Diagram information, refer to PWC-66, "Wiring Diagram".

1. CHECK POWER SUPPLY CIRCUIT

Check voltage between rear power window switch connector and ground.



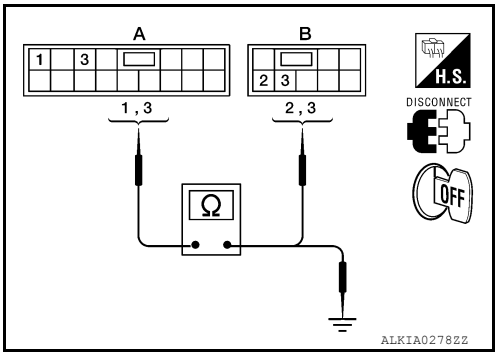
Terminal				Condition	Voltage (V) (Approx.)
(+)			(–)		
Rear power window switch connector		Terminal			
LH	D203	1	Ground	Ignition switch ON	Battery voltage
RH	D303				

Is the measurement value within the specification?

YES >> GO TO 2 (Rear power window switch LH)
YES >> GO TO 3 (Rear power window switch RH)
NO >> GO TO 4

2. CHECK HARNESS CONTINUITY (REAR POWER WINDOW SWITCH LH)

1. Turn ignition switch OFF.
2. Disconnect main power window and door lock/unlock switch and rear power window switch LH.
3. Check continuity between main power window and door lock/unlock switch connector and rear power window switch LH connector.



Main power window and door lock/unlock switch connector	Terminal	Rear power window switch LH connector	Terminal	Continuity
D7 (A)	1	D203 (B)	2	Yes
	3		3	

4. Check continuity between main power window and door lock/unlock switch connector and ground.

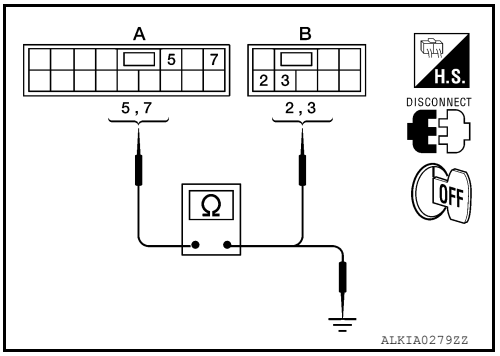
Main power window and door lock/unlock switch connector	Terminal	Ground	Continuity
D7 (A)	1		No
	3		

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".
NO >> Repair or replace harness.

3. CHECK HARNESS CONTINUITY (REAR POWER WINDOW SWITCH RH)

1. Turn ignition switch OFF.
2. Disconnect main power window and door lock/unlock switch and rear power window switch RH.
3. Check continuity between main power window and door lock/unlock switch connector and rear power window switch RH connector.



Main power window and door lock/unlock switch connector	Terminal	Rear power window switch RH connector	Terminal	Continuity
D7 (A)	5	D303 (B)	3	Yes
	7		2	

4. Check continuity between main power window and door lock/unlock switch connector and ground.

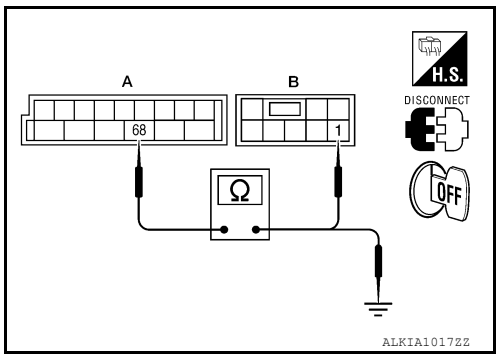
Main power window and door lock/unlock switch connector	Terminal	Ground	Continuity
D7 (A)	5		No
	7		

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".
NO >> Repair or replace harness.

4. CHECK HARNESS CONTINUITY

1. Disconnect BCM and rear power window switch.
2. Check continuity between BCM connector and rear power window switch connector.



BCM connector	Terminal	Rear power window switch connector		Terminal	Continuity
M20 (A)	68	LH	D203 (B)	1	Yes
		RH	D303 (B)		

3. Check continuity between BCM connector (A) and ground.

BCM connector	Terminal	Ground	Continuity
M20 (A)	68		No

Is the inspection result normal?

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

5. CHECK REAR POWER WINDOW SWITCH

Check rear power window switch.
Refer to PWC-19, "REAR POWER WINDOW SWITCH : Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".
NO >> Replace rear power window switch. Refer to PWC-95, "Removal and Installation".

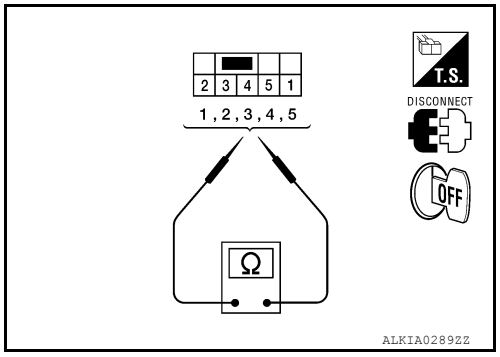
REAR POWER WINDOW SWITCH : Component Inspection

INFOID:0000000007317406

COMPONENT INSPECTION

1. CHECK REAR POWER WINDOW SWITCH

Check rear power window switch.



Terminal		Power window switch condition	Continuity
1	5	UP	Yes
3	4		
3	4	NEUTRAL	
5	2		
1	4	DOWN	
5	2		

Is the inspection result normal?

YES >> Rear power window switch is OK.
NO >> Replace rear power window switch. Refer to PWC-95, "Removal and Installation".

POWER WINDOW MOTOR
DRIVER SIDE

DRIVER SIDE : Description

INFOID:0000000007317407

Door glass moves UP/DOWN by receiving the signal from power window main switch.

DRIVER SIDE : Component Function Check

INFOID:0000000007317408

1. CHECK POWER WINDOW MOTOR CIRCUIT

Does front power window motor LH operate with operating main power window and door lock/unlock switch?

Is the inspection result normal?

YES >> Front power window motor LH is OK.
NO >> Refer to PWC-20, "DRIVER SIDE : Diagnosis Procedure".

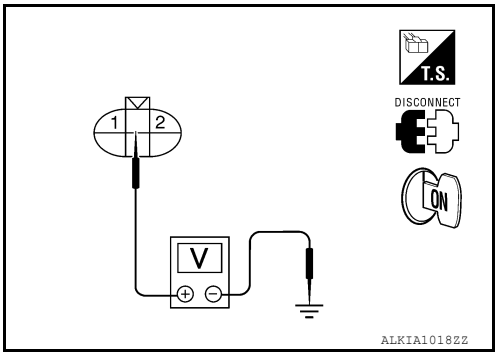
DRIVER SIDE : Diagnosis Procedure

INFOID:0000000007317409

Regarding Wiring Diagram information, refer to PWC-66, "Wiring Diagram".

1. CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH OUTPUT SIGNAL

1. Disconnect front power window motor LH.
2. Turn ignition switch ON.
3. Check voltage between front power window motor LH connector and ground.



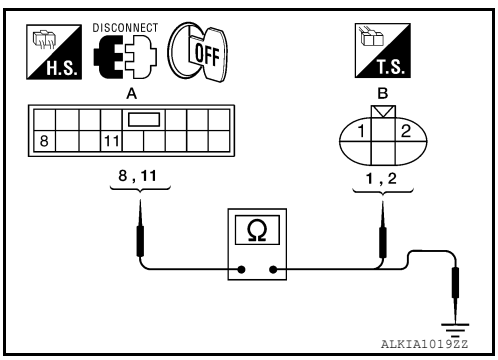
Terminal			Main power window and door lock/unlock switch condition	Voltage (V) (Approx.)
(+)		(–)		
Power window motor LH connector	Terminal			
D9	2	Ground	UP	Battery voltage
			DOWN	0
	1		UP	0
			DOWN	Battery voltage

Is the measurement value within the specification?

YES >> GO TO 2
NO >> Replace main power window and door lock/unlock switch. Refer to PWC-93, "Removal and Installation".

2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect main power window and door lock/unlock switch and front power window motor LH.
3. Check continuity between main power window and door lock/unlock switch connector and front power window motor connector LH.



Main power window and door lock/unlock switch connector	Terminal	Front power window motor LH connector	Terminal	Continuity
D7 (A)	8	D9 (B)	2	Yes
	11		1	

4. Check continuity between main power window and door lock/unlock switch connector and ground.

Main power window and door lock/unlock switch connector	Terminal	Ground	Continuity
D7 (A)	8		No
	11		

Is the inspection result normal?

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

3. CHECK POWER WINDOW MOTOR

Check front power window motor LH.
Refer to PWC-21, "DRIVER SIDE : Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".
NO >> Replace power window motor LH. Refer to GW-15, "Removal and Installation".

DRIVER SIDE : Component Inspection

INFOID:0000000007317410

COMPONENT INSPECTION

1. CHECK FRONT POWER WINDOW MOTOR LH

Does motor operate by connecting the battery voltage directly to power window motor?

Terminal		Motor condition
(+)	(–)	
1	2	DOWN
2	1	UP

Is the inspection result normal?

YES >> Front power window motor LH is OK.
NO >> Replace front power window motor LH. Refer to GW-15, "Removal and Installation".

PASSENGER SIDE

PASSENGER SIDE : Description

INFOID:0000000007317411

Door glass moves UP/DOWN by receiving the signal from main power window and door lock/unlock switch or power window and door lock/unlock switch RH.

PASSENGER SIDE : Component Function Check

INFOID:0000000007317412

1. CHECK POWER WINDOW MOTOR CIRCIUT

Does power window motor operate with operating main power window and door lock/unlock switch or power window and door lock/unlock switch RH?

Is the inspection result normal?

YES >> Front power window motor RH is OK.
NO >> Refer to PWC-21, "PASSENGER SIDE : Diagnosis Procedure".

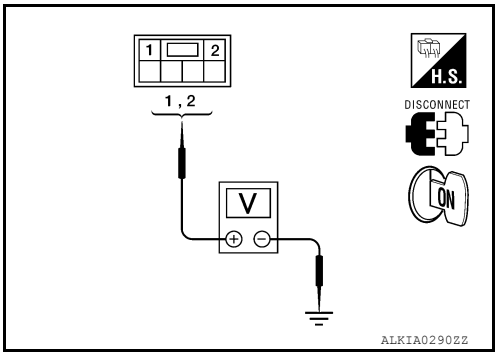
PASSENGER SIDE : Diagnosis Procedure

INFOID:0000000007317413

Regarding Wiring Diagram information, refer to PWC-66, "Wiring Diagram".

1. CHECK FRONT POWER WINDOW SWITCH RH OUTPUT SIGNAL

1. Disconnect front power window motor RH.
2. Turn ignition switch ON.
3. Check voltage between front power window motor RH connector and ground.



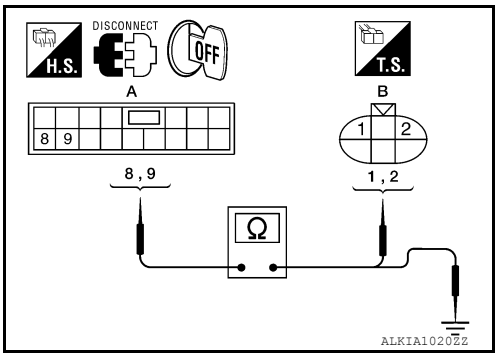
Terminal			Front power window motor RH condition	Voltage (V) (Approx.)
(+)		(–)		
Front power window motor RH connector	Terminal			
D104	2	Ground	UP	Battery voltage
			DOWN	0
	1		UP	0
			DOWN	Battery voltage

Is the measurement value within the specification?

YES >> GO TO 2
NO >> Replace power window and door lock/unlock switch RH. Refer to PWC-94, "Removal and Installation".

2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect power window and door lock/unlock switch RH.
3. Check continuity between power window and door lock/unlock switch RH connector and front power window motor RH connector.



Power window and door lock/unlock switch RH connector	Terminal	Front power window motor RH connector	Terminal	Continuity
D105 (A)	8	D104 (B)	2	Yes
	9		1	

4. Check continuity between power window and door lock/unlock switch RH connector and ground.

Power window and door lock/unlock switch RH connector	Terminal	Ground	Continuity
D105 (A)	8		No
	9		

Is the inspection result normal?

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

3. CHECK FRONT POWER WINDOW MOTOR RH

Check front power window motor RH.
Refer to PWC-22, "PASSENGER SIDE : Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".
NO >> Replace front power window motor RH. Refer to GW-15, "Removal and Installation".

PASSENGER SIDE : Component Inspection

INFOID:0000000007317414

COMPONENT INSPECTION

1. CHECK FRONT POWER WINDOW MOTOR RH

Does motor operate by connecting the battery voltage directly to front power window motor RH?

Terminal		Motor condition
(+)	(–)	
1	2	DOWN
2	1	UP

Is the inspection result normal?

YES >> Front power window motor RH is OK.
NO >> Replace front power window motor RH. Refer to GW-15, "Removal and Installation".

REAR LH

REAR LH : Description

INFOID:0000000007317415

Door glass moves UP/DOWN by receiving the signal from power window main switch or rear power window switch LH.

REAR LH : Component Function Check

INFOID:0000000007317416

1. CHECK REAR POWER WINDOW MOTOR LH CIRCUIT

Does rear power window motor LH operate with main power window and door lock/unlock switch or rear power window switch LH?

Is the inspection result normal?

YES >> Rear power window motor LH is OK.
NO >> Refer to PWC-23, "REAR LH : Diagnosis Procedure"

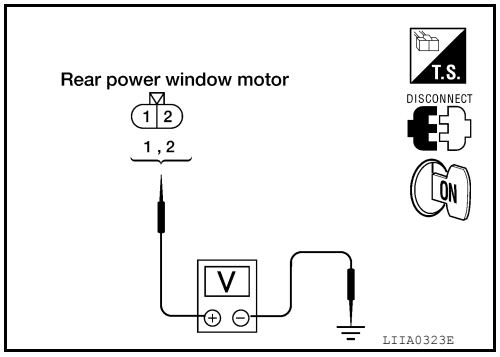
REAR LH : Diagnosis Procedure

INFOID:0000000007317417

Regarding Wiring Diagram information, refer to PWC-66, "Wiring Diagram".

1. CHECK REAR POWER WINDOW SWITCH OUTPUT SIGNAL

1. Disconnect rear power window motor LH.
2. Turn ignition switch ON.
3. Check voltage between rear power window motor LH connector and ground.



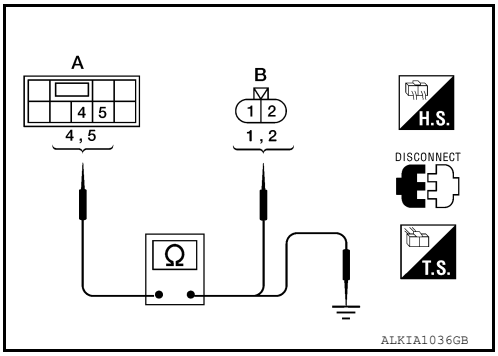
Terminal			Window condition	Voltage (V) (Approx.)
(+)		(–)		
Rear power window motor LH connector	Terminal			
D204	2	Ground	UP	Battery voltage
			DOWN	0
	1		UP	0
			DOWN	Battery voltage

Is the measurement value within the specification?

YES >> GO TO 2
NO >> Check rear power window switch LH. Refer to PWC-17, "REAR POWER WINDOW SWITCH : Component Function Check".

2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect rear power window switch LH.
3. Check continuity between rear power window switch LH connector and rear power window motor LH connector.



Rear power window switch LH connector	Terminal	Rear power window motor LH connector	Terminal	Continuity
D203 (A)	5	D204 (B)	2	Yes
	4		1	

4. Check continuity between rear power window switch LH connector and ground.

Rear power window switch LH connector	Terminal	Ground	Continuity
D203 (A)	5		No
	4		

Is the inspection result normal?

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

3. CHECK REAR POWER WINDOW MOTOR LH

Check rear power window motor LH.
Refer to PWC-24, "REAR LH : Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".
NO >> Replace rear power window motor LH. Refer to GW-18, "Removal and Installation".

REAR LH : Component Inspection

INFOID:0000000007317418

COMPONENT INSPECTION

1. CHECK REAR POWER WINDOW MOTOR LH

Does motor operate by connecting the battery voltage directly to rear power window motor LH?

Terminal		Motor condition
(+)	(–)	
1	2	DOWN
2	1	UP

Is the inspection result normal?

YES >> Rear power window motor LH is OK.
NO >> Replace rear power window motor LH. Refer to GW-18, "Removal and Installation".

REAR RH

REAR RH : Description

INFOID:0000000007317419

Door glass moves UP/DOWN by receiving the signal from main power window and door lock/unlock switch or rear power window switch RH.

REAR RH : Component Function Check

INFOID:0000000007317420

1. CHECK REAR POWER WINDOW MOTOR RH CIRCUIT

Does rear power window motor RH operate with operating main power window and door lock/unlock switch or rear power window switch RH?

Is the inspection result normal?

YES >> Rear power window motor RH is OK.
NO >> Refer to PWC-25, "REAR RH : Diagnosis Procedure".

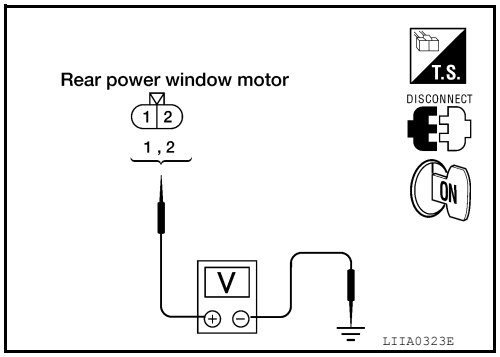
REAR RH : Diagnosis Procedure

INFOID:0000000007317421

Regarding Wiring Diagram information, refer to PWC-66, "Wiring Diagram".

1. CHECK REAR POWER WINDOW SWITCH RH OUTPUT SIGNAL

1. Disconnect rear power window motor RH.
2. Turn ignition switch ON.
3. Check voltage between rear power window motor RH connector and ground.



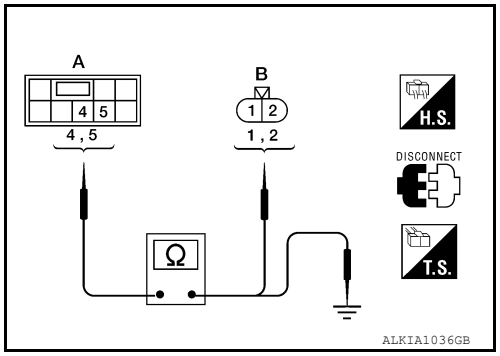
Terminal			Rear power window switch RH condition	Voltage (V) (Approx.)
(+)		(–)		
Rear power window motor RH connector	Terminal			
D304	2	Ground	UP	Battery voltage
			DOWN	0
	1		UP	0
			DOWN	Battery voltage

Is the measurement value within the specification?

YES >> GO TO 2
NO >> Check rear power window switch RH. Refer to PWC-17, "REAR POWER WINDOW SWITCH : Component Function Check".

2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect rear power window switch RH.
3. Check continuity between rear power window switch RH connector and rear power window motor RH connector.



Rear power window switch RH connector	Terminal	Rear power window motor RH connector	Terminal	Continuity
D303 (A)	5	D304 (B)	2	Yes
	4		1	

4. Check continuity between rear power window switch RH connector and ground.

Rear power window switch RH connector	Terminal	Ground	Continuity
D303 (A)	5		No
	4		

Is the inspection result normal?

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

3. CHECK REAR POWER WINDOW MOTOR RH

Check rear power window motor RH.
Refer to PWC-26, "REAR RH : Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".
NO >> Replace rear power window motor RH. Refer to GW-18, "Removal and Installation".

REAR RH : Component Inspection

INFOID:0000000007317422

COMPONENT INSPECTION

1. CHECK REAR POWER WINDOW MOTOR RH

Does motor operate by connecting the battery voltage directly to rear power window motor RH?

Terminal		Motor condition
(+)	(–)	
1	2	DOWN
2	1	UP

Is the inspection result normal?

YES >> Rear power window motor RH is OK.
NO >> Replace rear power window motor RH. Refer to GW-18, "Removal and Installation".

ENCODER
DRIVER SIDE

DRIVER SIDE : Description

INFOID:0000000007317423

Detects condition of the front power window motor LH operation and transmits to main power window and door lock/unlock switch as pulse signal.

DRIVER SIDE : Component Function Check

INFOID:0000000007317424

1. CHECK ENCODER OPERATION

Does front door glass LH perform AUTO open/close operation normally when operating main power window and door lock/unlock switch?

Is the inspection result normal?

YES >> Encoder operation is OK.
NO >> Refer to PWC-27, "DRIVER SIDE : Diagnosis Procedure"

DRIVER SIDE : Diagnosis Procedure

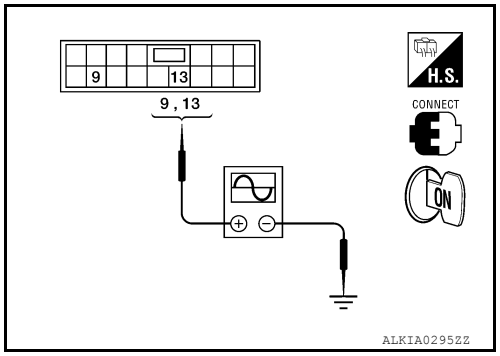
INFOID:0000000007317425

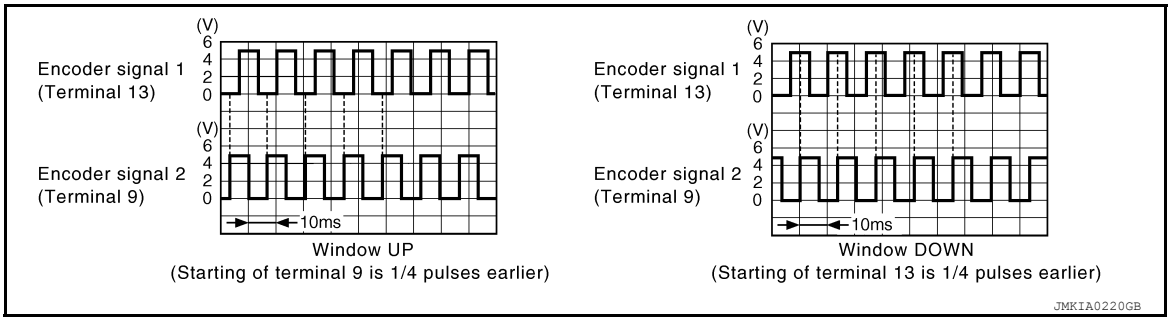
Regarding Wiring Diagram information, refer to PWC-66, "Wiring Diagram".

1. CHECK ENCODER OPERATION

1. Turn ignition switch ON.
2. Check signal between main power window and door lock/unlock switch connector and ground with oscilloscope.

Terminals			
(+)		(–)	Signal (Reference value)
Main power window and door lock/unlock switch connector	Terminal		
D7	9	Ground	Refer to following signal
	13		



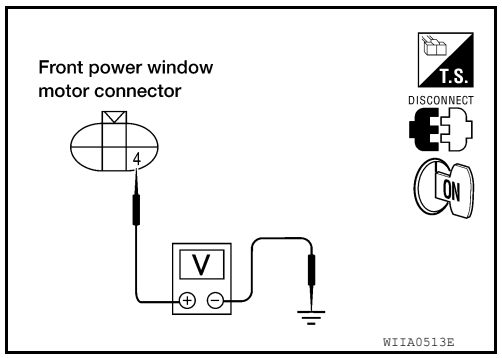


Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".
NO >> GO TO 2

2. CHECK FRONT POWER WINDOW MOTOR LH POWER SUPPLY

1. Disconnect front power window motor LH.
2. Check voltage between front power window motor LH connector and ground.



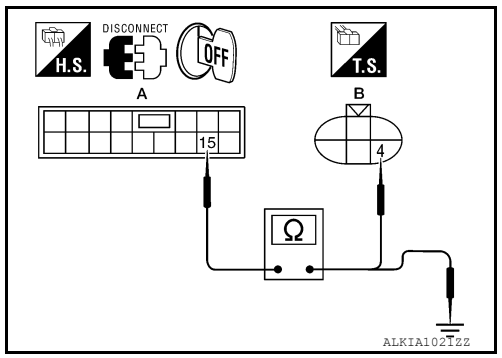
Terminal			Voltage (V) (Approx.)
(+)		(–)	
Front power window motor LH connector	Terminal		
D9	4	Ground	10

Is the measurement value within the specification?

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

3. CHECK HARNESS CONTINUITY 1

1. Turn ignition switch OFF.
2. Disconnect main power window and door lock/unlock switch.
3. Check continuity between main power window and door lock/unlock switch connector and front power window motor LH connector.



Main power window and door lock/unlock switch connector	Terminal	Front power window motor LH connector	Terminal	Continuity
D7 (A)	15	D9 (B)	4	Yes

4. Check continuity between main power window and door lock/unlock switch connector and ground.

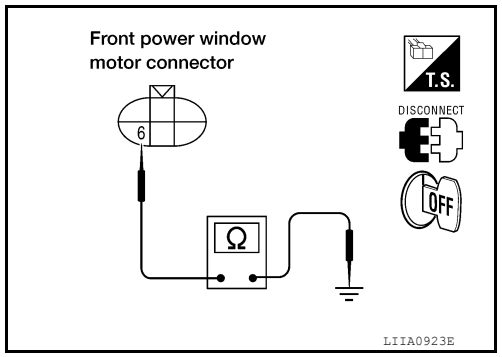
Main power window and door lock/unlock switch connector	Terminal	Ground	Continuity
D7 (A)	15		No

Is the inspection result normal?

YES >> Replace main power window and door lock/unlock switch. Refer to PWC-93, "Removal and Installation".
NO >> Repair or replace harness.

4. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between front power window motor LH connector and ground.



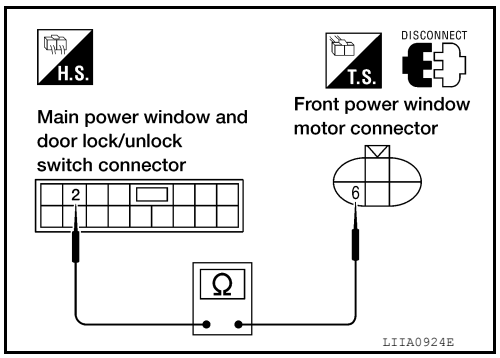
Front power window motor LH connector	Terminal	Ground	Continuity
D9	6		Yes

Is the inspection result normal?

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

5. CHECK HARNESS CONTINUITY 2

1. Disconnect main power window and door lock/unlock switch.
2. Check continuity between main power window and door lock/unlock switch connector and front power window motor LH connector.



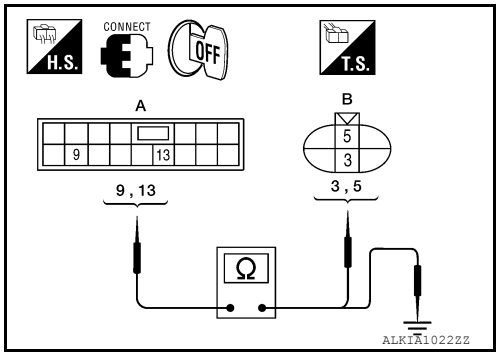
Main power window and door lock/unlock switch connector	Terminal	Front power window motor LH connector	Terminal	Continuity
D7	2	D9	6	Yes

Is the inspection result normal?

YES >> Replace main power window and door lock/unlock switch. Refer to PWC-93, "Removal and Installation".
NO >> Repair or replace harness.

6. CHECK HARNESS CONTINUITY 3

1. Disconnect main power window and door lock/unlock switch.
2. Check continuity between main power window and door lock/unlock switch connector and front power window motor LH connector.



Main power window and door lock/unlock switch connector	Terminal	Front power window motor LH connector	Terminal	Continuity
D7 (A)	9	D9 (B)	5	Yes
	13		3	

3. Check continuity between main power window and door lock/unlock switch connector and ground.

Main power window and door lock/unlock switch connector	Terminal	Ground	Continuity
D7 (A)	9		No
	13		

Is the inspection result normal?

YES >> Replace front power window motor LH. Refer to GW-15, "Removal and Installation".
NO >> Repair or replace harness.

PASSENGER SIDE

PASSENGER SIDE : Description

INFOID:0000000007317426

Detects condition of the front power window motor RH operation and transmits to power window and door lock/unlock switch RH as pulse signal.

PASSENGER SIDE : Component Function Check

INFOID:0000000007317427

1. CHECK ENCODER OPERATION

Does front door glass RH perform AUTO open/close operation normally when operating power window and door lock/unlock switch RH?

Is the inspection result normal?

YES >> Encoder operation is OK.
NO >> Refer to PWC-29, "PASSENGER SIDE : Diagnosis Procedure".

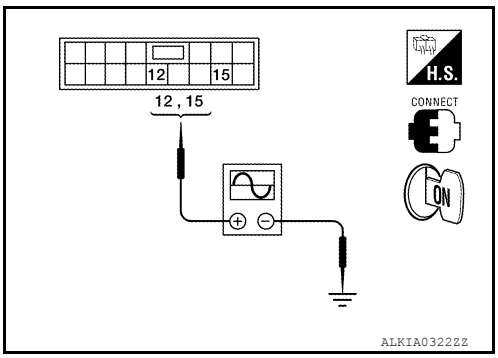
PASSENGER SIDE : Diagnosis Procedure

INFOID:0000000007317428

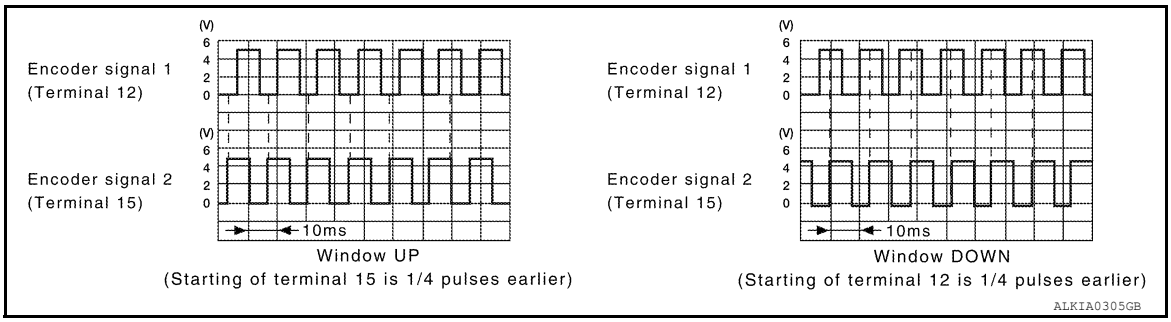
Regarding Wiring Diagram information, refer to PWC-66, "Wiring Diagram".

1. CHECK ENCODER SIGNAL

1. Turn ignition switch ON.
2. Check signal between power window and door lock/unlock switch RH connector and ground with oscilloscope.



Terminals			Signal (Reference value)
(+)		(–)	
Power window and door lock/unlock switch RH connector	Terminal		
D105	12	Ground	Refer to following signal
	15		

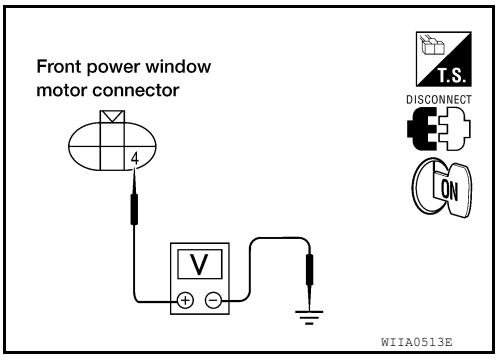


Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".
NO >> GO TO 2

2. CHECK FRONT POWER WINDOW MOTOR RH POWER SUPPLY

1. Disconnect front power window motor RH.
2. Check voltage between front power window motor RH connector and ground.



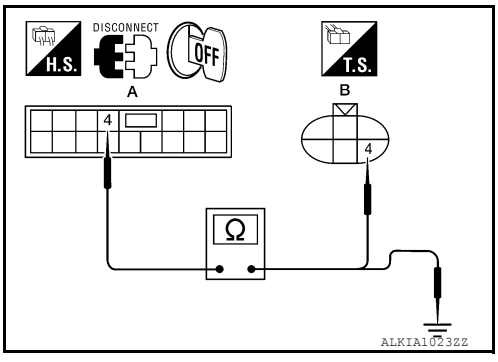
Terminal			Voltage (V) (Approx.)
(+)		(–)	
Front power window motor RH connector	Terminal		
D105	4	Ground	10

Is the measurement value within the specification?

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

3. CHECK HARNESS CONTINUITY 1

1. Turn ignition switch OFF.
2. Disconnect power window and door lock/unlock switch RH.
3. Check continuity between power window and door lock/unlock switch RH connector and front power window motor RH connector.



Power window and door lock/unlock switch RH connector	Terminal	Front power window motor RH connector	Terminal	Continuity
D105 (A)	4	D104 (B)	4	Yes

4. Check continuity between power window and door lock/unlock switch RH connector and ground.

Power window and door lock/unlock switch RH connector	Terminal	Ground	Continuity
D105 (A)	4		No

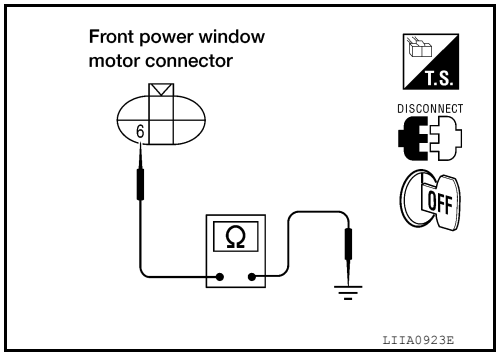
Is the inspection result normal?

YES >> Replace power window and door lock/unlock switch RH. Refer to PWC-94, "Removal and Installation".

NO >> Repair or replace harness.

4. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between front power window motor RH connector and ground.



Front power window motor RH connector	Terminal	Ground	Continuity
D104	6		Yes

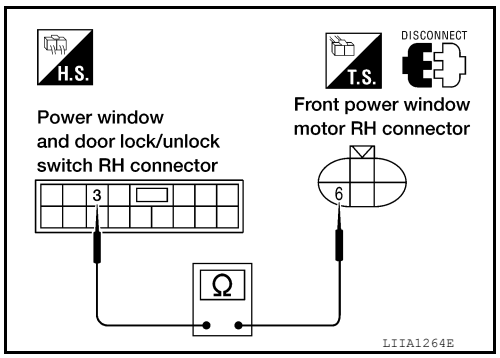
Is the inspection result normal?

YES >> GO TO 6

NO >> GO TO 5

5. CHECK HARNESS CONTINUITY 2

1. Disconnect power window and door lock/unlock switch RH.
2. Check continuity between power window and door lock/unlock switch RH connector and front power window motor RH connector.



Power window and door lock/unlock switch RH connector	Terminal	Front power window motor RH connector	Terminal	Continuity
D105	3	D104	6	Yes

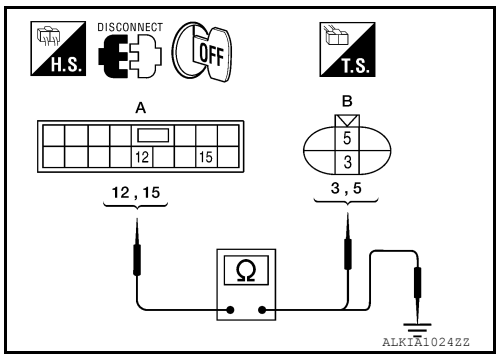
Is the inspection result normal?

YES >> Replace power window and door lock/unlock switch RH. Refer to PWC-94, "Removal and Installation".

NO >> Repair or replace harness.

6. CHECK HARNESS CONTINUITY 3

1. Disconnect power window and door lock/unlock switch RH.
2. Check continuity between power window and door lock/unlock switch RH connector and front power window motor RH connector.



Power window and door lock/unlock switch RH connector	Terminal	Front power window motor RH connector	Terminal	Continuity
D105 (A)	12	D104 (B)	3	Yes
	15		5	

3. Check continuity between power window and door lock/unlock switch RH connector and ground.

Power window and door lock/unlock switch RH connector	Terminal	Ground	Continuity
D105 (A)	12		No
	15		

Is the inspection result normal?

YES >> Replace front power window motor RH. Refer to GW-15, "Removal and Installation".
NO >> Repair or replace harness.

DOOR SWITCH

Description

INFOID:0000000007317429

Detects door open/close condition and transmits the signal to BCM.

Component Function Check

INFOID:0000000007317430

1. CHECK FRONT DOOR SWITCH INPUT SIGNAL

Check (“DOOR SW-DR” and “DOOR SW-AS”) in “DATA MONITOR” mode with CONSULT. Refer to BCS-26, "RETAINED PWR : CONSULT Function (BCM - RETAINED PWR)".

Monitor item	Condition	
DOOR SW-DR	OPEN	: ON
	CLOSE	: OFF
DOOR SW-AS	OPEN	: ON
	CLOSE	: OFF

Is the inspection result normal?

YES >> Front door switch circuit is OK.
NO >> Refer to PWC-33, "Diagnosis Procedure".

Diagnosis Procedure

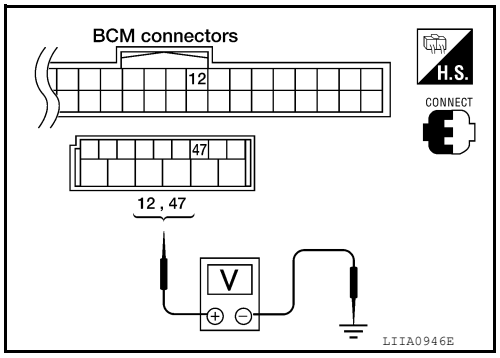
INFOID:0000000007317431

Regarding Wiring Diagram information, refer to PWC-66, "Wiring Diagram".

1. CHECK FRONT DOOR SWITCH

Check voltage between BCM connector and ground.

Terminals (+) BCM connector	Terminals (+) Terminal	Terminals (–)	Door condition		Voltage (V) (Approx.)
M18	12	Ground	Front door RH	OPEN	0
				CLOSE	Battery voltage
M19	47		Front door LH	OPEN	0
				CLOSE	Battery voltage

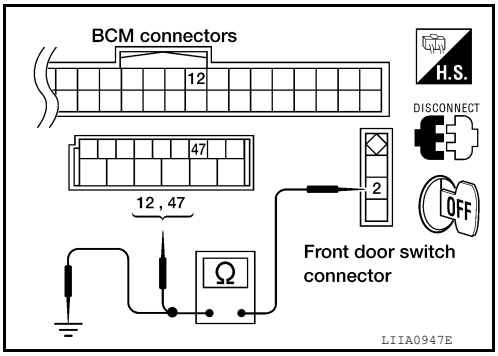


Is the measurement value within the specification?

YES >> Replace BCM. Refer to BCS-54, "Removal and Installation".
NO >> GO TO 2

2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect BCM and front door switch.
3. Check continuity between BCM connector and front door switch connector.



BCM connector	Terminal	Front door switch connector	Terminal	Continuity
M18	12	RH: B108	2	Yes
M19	47	LH: B8		

4. Check continuity between front door switch connector and ground.

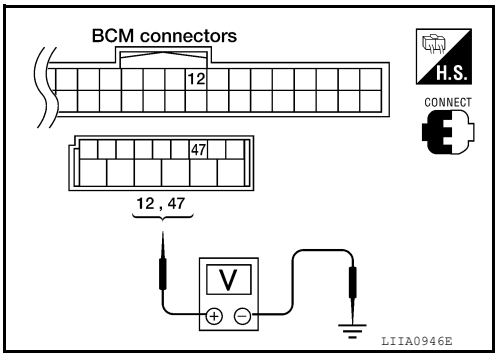
Front door switch connector	Terminal	Ground	Continuity
B8 (LH)	2		No
B108 (RH)			

Is the inspection result normal?

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

3. CHECK BCM OUTPUT SIGNAL

1. Connect BCM connector.
2. Check voltage between BCM connector and ground.



Terminal			Voltage (V) (Approx.)
(+)		(–)	
BCM connector	Terminal		
M18	12	Ground	Battery voltage
M19	47		

Is the measurement value within the specification?

YES >> GO TO 4
NO >> Replace BCM. Refer to BCS-54, "Removal and Installation".

4. CHECK FRONT DOOR SWITCH

Check front door switch.
Refer to PWC-34, "Component Inspection".

Is the inspection result normal?

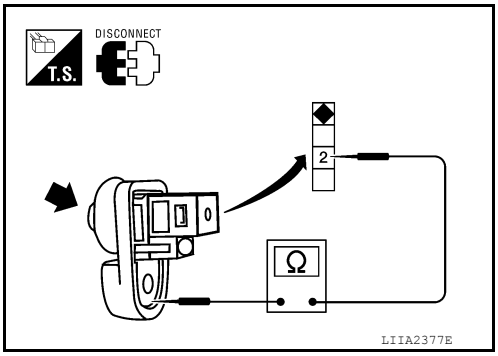
YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".
NO >> Replace front door switch.

Component Inspection

INFOID:0000000007317432

1. CHECK FRONT DOOR SWITCH

Check front door switches.



Terminal		Door switch	Continuity
Door switches			
2	Ground part of door switch	Pressed	No
		Released	Yes

Is the inspection result normal?

YES >> Front door switch is OK.
NO >> Replace front door switch.

DOOR KEY CYLINDER SWITCH

Description

INFOID:0000000007317433

Main power window and door lock/unlock switch detects condition of the door key cylinder and transmits to BCM as the LOCK or UNLOCK signals.

Component Function Check

INFOID:0000000007317434

1. CHECK DOOR KEY CYLINDER SWITCH INPUT SIGNAL

Check (“KEY CYL LK-SW”, “KEY CYL UN-SW”) in “DATA MONITOR” mode for “POWER DOOR LOCK SYSTEM” with CONSULT. Refer to BCS-16, "COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)".

Monitor item	Condition	
KEY CYL LK-SW	Lock	: ON
	Neutral / Unlock	: OFF
KEY CYL UN-SW	Unlock	: ON
	Neutral / Lock	: OFF

Is the inspection result normal?

YES >> Key cylinder switch is OK.
NO >> Refer to PWC-35, "Diagnosis Procedure".

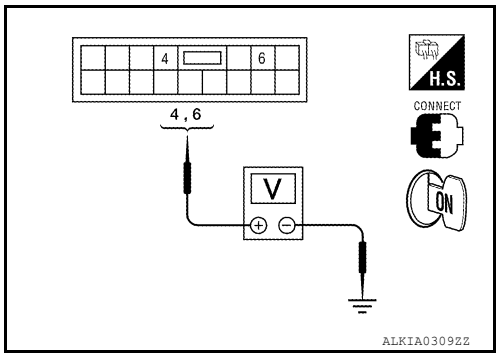
Diagnosis Procedure

INFOID:0000000007317435

Regarding Wiring Diagram information, refer to PWC-66, "Wiring Diagram".

1. CHECK DOOR KEY CYLINDER SWITCH INPUT SIGNAL

1. Turn ignition switch ON.
2. Check voltage between main power window and door lock/unlock switch connector and ground.



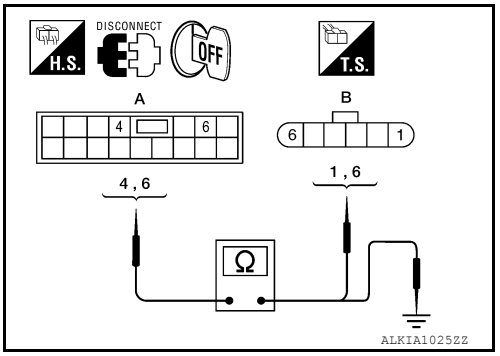
Terminals			Key position	Voltage (V) (Approx.)
(+)		(–)		
Main power window and door lock/unlock switch connector	Terminal			
D7	4	Ground	Lock	0
			Neutral/Unlock	5
	6		Unlock	0
			Neutral/Lock	5

Is the measurement value within the specification?

YES >> Replace main power window and door lock/unlock switch.
NO >> GO TO 2

2. CHECK DOOR KEY CYLINDER SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect main power window and door lock/unlock switch and front door lock assembly LH (key cylinder switch).
3. Check continuity between main power window and door lock/unlock switch connector and front door lock assembly LH (key cylinder switch) connector.



Main power window and door lock/unlock switch connector	Terminal	Front door lock assembly LH (key cylinder switch) connector	Terminal	Continuity
D7 (A)	4	D14 (B)	1	Yes
	6		6	

4. Check continuity between main power window and door lock/unlock switch connector and ground.

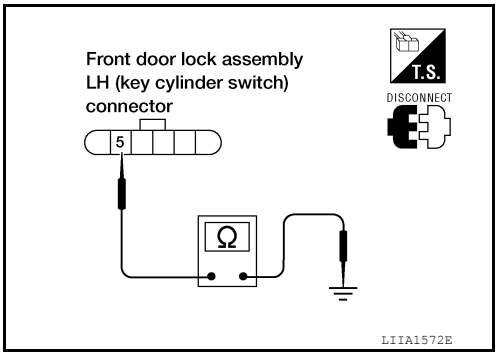
Main power window and door lock/unlock switch connector	Terminal	Ground	Continuity
D7 (A)	4		No
	6		

Is the inspection result normal?

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

3. CHECK DOOR KEY CYLINDER SWITCH GROUND CIRCUIT

Check continuity between front door lock assembly LH (key cylinder switch) connector and ground.



Front door lock assembly LH (key cylinder switch) connector	Terminal	Ground	Continuity
D14	5		Yes

Is the inspection result normal?

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

4. CHECK DOOR KEY CYLINDER SWITCH

Check door key cylinder switch.
Refer to PWC-36, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".
NO >> Replace front door lock assembly LH (door key cylinder switch).

Component Inspection

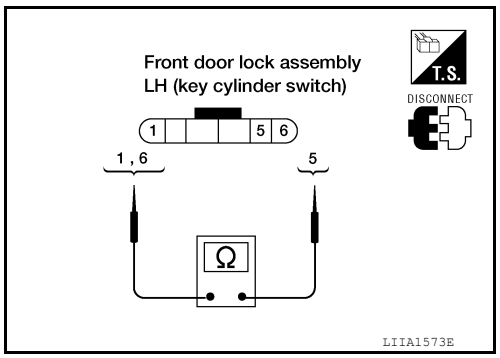
INFOID:0000000007317436

COMPONENT INSPECTION

1. CHECK DOOR KEY CYLINDER SWITCH

Check front door lock assembly LH (key cylinder switch).

Terminal		Key position	Continuity
Front door lock assembly LH (key cylinder switch) connector			
6	5	Unlock	Yes
		Neutral/Lock	No
1		Lock	Yes
		Neutral/Unlock	No



Is the inspection result normal?

YES >> Key cylinder switch is OK.
NO >> Replace front door lock assembly LH (key cylinder switch).

POWER WINDOW SERIAL LINK
POWER WINDOW MAIN SWITCH

POWER WINDOW MAIN SWITCH : Description

INFOID:0000000007317437

Main power window and door lock/unlock switch, power window and door lock/unlock switch RH and BCM transmit and receive the signal by power window serial link.
The signal mentioned below is transmitted from BCM to main power window and door lock/unlock switch and power window and door lock/unlock switch RH
- Keyless power window down signal

The signal mentioned below is transmitted from main power window and door lock/unlock switch to power window and door lock/unlock switch RH
- Front door window RH operation signal
- Power window control by key cylinder switch signal
- Power window lock switch signal
- Retained power operation signal

POWER WINDOW MAIN SWITCH : Component Function Check

INFOID:0000000007317438

1. CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH OUTPUT SIGNAL

Check (“CDL LOCK SW ”, “CDL UNLOCK SW”) in “DATA MONITOR” mode for “POWER DOOR LOCK SYSTEM” with CONSULT. Refer to BCS-16, "COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)".

Monitor item	Condition	
CDL LOCK SW	LOCK	: ON
	UNLOCK	: OFF
CDL UNLOCK SW	LOCK	: OFF
	UNLOCK	: ON

Is the inspection result normal?

YES >> Power window serial link is OK.
NO >> Refer to PWC-38, "POWER WINDOW MAIN SWITCH : Diagnosis Procedure".

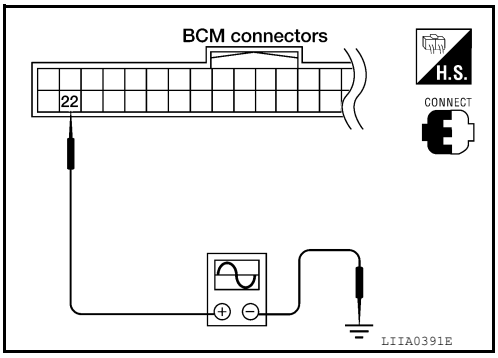
POWER WINDOW MAIN SWITCH : Diagnosis Procedure

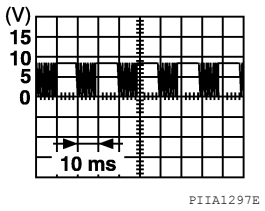
INFOID:0000000007317439

Regarding Wiring Diagram information, refer to PWC-66, "Wiring Diagram".

1. CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH OUTPUT SIGNAL

1. Remove Intelligent Key or ignition key, and close front door LH and RH.
2. Check signal between BCM connector and ground with oscilloscope when door lock and unlock switch (LH and RH) is turned to “LOCK” or “UNLOCK”.
3. Check that signals which are shown in the figure below can be detected during 10 second just after door lock and unlock switch (LH and RH) is turned to “LOCK” or “UNLOCK”.



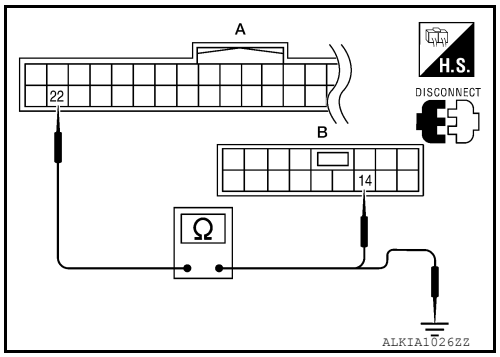
Terminal			Signal (Reference value)
(+)		(–)	
BCM connector	Terminal		
M18	22	Ground	

Is the inspection result normal?

YES >> Power window serial link is OK.
NO >> GO TO 2

2. CHECK POWER WINDOW SERIAL LINK CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM and main power window and door lock/unlock switch.
3. Check continuity between BCM connector and main power window and door lock/unlock switch connector.



BCM connector	Terminal	Main power window and door lock/unlock switch connector	Terminal	Continuity
M18 (A)	22	D7 (B)	14	Yes

4. Check continuity between BCM connector and ground.

BCM connector	Terminal	Ground	Continuity
M18 (A)	22		No

Is the inspection result normal?

YES >> Replace main power window and door lock/unlock switch. Refer to PWC-93, "Removal and Installation".
NO >> Repair or replace harness.

FRONT POWER WINDOW SWITCH

FRONT POWER WINDOW SWITCH : Description

INFOID:0000000007317440

Main power window and door lock/unlock switch, power window and door lock/unlock switch RH and BCM transmit and receive the signal by power window serial link.
The signal mentioned below is transmitted from BCM to main power window and door lock/unlock switch and power window and door lock/unlock switch RH
- Keyless power window down signal

The signal mentioned below is transmitted from main power window and door lock/unlock switch to power window and door lock/unlock switch RH
- Front door window RH operation signal
- Power window control by key cylinder switch signal
- Retained power operation signal
- Power window lock switch signal

FRONT POWER WINDOW SWITCH : Component Function Check

INFOID:0000000007317441

1. CHECK POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH OUTPUT SIGNAL

Check (“CDL LOCK SW ”, “CDL UNLOCK SW”) in “DATA MONITOR” mode for “POWER DOOR LOCK SYSTEM” with CONSULT. Refer to BCS-16, "COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)".

Monitor item	Condition	
CDL LOCK SW	LOCK	: ON
	UNLOCK	: OFF
CDL UNLOCK SW	LOCK	: OFF
	UNLOCK	: ON

Is the inspection result normal?

YES >> Power window serial link is OK.
NO >> Refer to PWC-40, "FRONT POWER WINDOW SWITCH : Diagnosis Procedure".

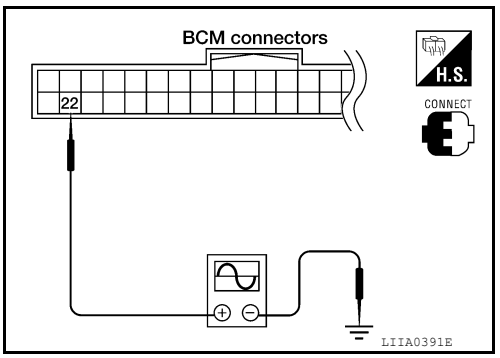
FRONT POWER WINDOW SWITCH : Diagnosis Procedure

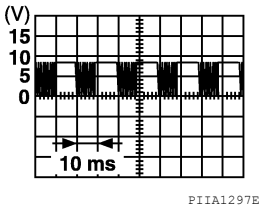
INFOID:0000000007317442

Regarding Wiring Diagram information, refer to PWC-66, "Wiring Diagram".

1. CHECK POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH

1. Remove Intelligent Key or ignition key, and close the front door LH and RH.
2. Check signal between BCM connector and ground with oscilloscope when door lock and unlock switch (LH and RH) is turned to “LOCK” or “UNLOCK”.
3. Check that signals which are shown in the figure below can be detected during 10 second just after door lock and unlock switch (LH and RH) is turned to “LOCK” or “UNLOCK”.



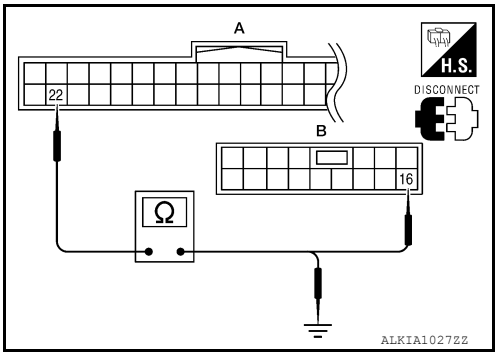
Terminal			Signal (Reference value)
(+)		(–)	
BCM connector	Terminal		
M18	22	Ground	

Is the inspection result normal?

YES >> Power window serial link is OK.
NO >> GO TO 2

2. CHECK POWER WINDOW SERIAL LINK CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM.
3. Check continuity between BCM connector and power window and door lock/unlock switch RH connector.



BCM connector	Terminal	Power window and door lock/unlock switch RH connector	Terminal	Continuity
M18 (A)	22	D105 (B)	16	Yes

4. Check continuity between BCM connector and ground.

BCM connector	Terminal	Ground	Continuity
M18 (A)	22		No

Is the inspection result normal?

YES >> Replace main power window and door lock/unlock switch. Refer to PWC-93, "Removal and Installation".

NO >> Repair or replace harness.

POWER WINDOW LOCK SWITCH

Description

INFOID:0000000007317443

Ground circuit of main power window and door lock/unlock switch shuts off if power window lock switch of main power window and door lock/unlock switch is operated. This inhibits all operation, except for the main switch.

Component Function Check

INFOID:0000000007317444

1. CHECK POWER WINDOW LOCK SIGNAL

Exchanges for a normal main power window and door lock/unlock switch, and operation is checked.

Does power window lock operate?

YES >> Replace main power window and door lock/unlock switch. Refer to PWC-93, "Removal and Installation".

NO >> Check condition of harness and connector.

REAR POWER VENT WINDOW SWITCH CIRCUIT CHECK

Description

INFOID:0000000007317445

Rear power vent window motor LH and RH will be operated if rear power vent window switch is operated.

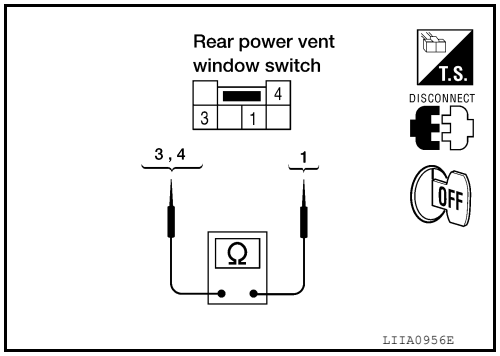
Diagnosis Procedure

INFOID:0000000007317446

Regarding Wiring Diagram information, refer to PWC-66, "Wiring Diagram".

1. CHECK REAR POWER VENT WINDOW SWITCH OPERATION

1. Turn ignition switch OFF.
2. Disconnect rear power vent window switch.
3. Check continuity between rear power vent window switch terminals 1, 3 and 4.



Terminals		Condition	Continuity
3	1	Rear power vent window switch is pressed OPEN.	Yes
4	1	Rear power vent window switch is pressed CLOSE.	Yes

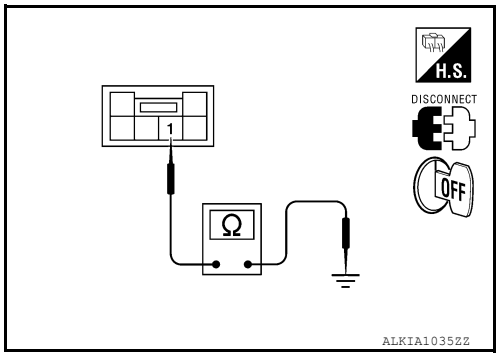
Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace rear power vent window switch.

2. CHECK REAR POWER VENT WINDOW SWITCH CIRCUIT HARNESS CONTINUITY

Check continuity between rear power vent window switch connector M95 terminal 1 and ground.

1 - Ground : Continuity should exist.



Is the inspection result normal?

YES >> Rear power vent window switch circuit harness OK.
NO >> Repair or replace harness.

REAR POWER VENT WINDOW MOTOR LH CIRCUIT CHECK

Description

INFOID:0000000007317447

Rear power vent windows OPEN/CLOSE by receiving the signal from rear power vent window switch.

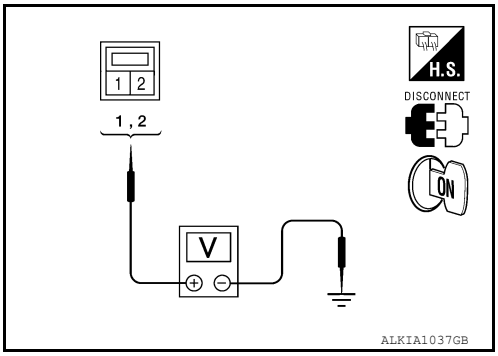
Diagnosis Procedure

INFOID:0000000007317448

Regarding Wiring Diagram information, refer to PWC-66, "Wiring Diagram".

1. CHECK REAR POWER VENT WINDOW LH SIGNAL

1. Turn ignition switch OFF.
2. Disconnect rear power vent window motor LH.
3. Turn ignition switch ON.
4. Check voltage between rear power vent window motor LH connector B52 terminals 1, 2 and ground.



Connector	Terminals		Condition	Voltage (V) (Approx.)
	(+)	(-)		
B52	1	Ground	Opening	Battery voltage
			Closing	0
	2		Opening	0
			Closing	Battery voltage

Is the inspection result normal?

YES >> Replace rear power vent window motor LH. Refer to GW-22, "Removal and Installation (with Rear Power Vent Windows)".

NO >> Repair or replace harness.

REAR POWER VENT WINDOW MOTOR RH CIRCUIT CHECK

Description

INFOID:0000000007317449

Rear power vent windows OPEN/CLOSE by receiving the signal from rear power vent window switch.

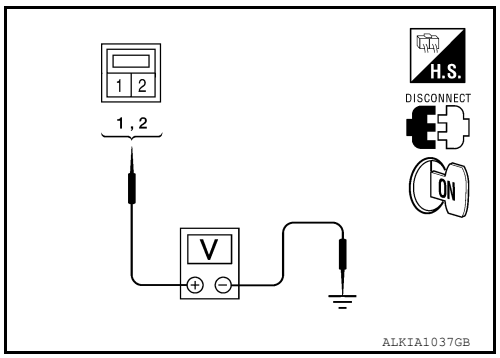
Diagnosis Procedure

INFOID:0000000007317450

Regarding Wiring Diagram information, refer to PWC-66, "Wiring Diagram".

1.CHECK REAR POWER VENT WINDOW SWITCH RH SIGNAL

1. Turn ignition switch OFF.
2. Disconnect rear power vent window motor RH.
3. Turn ignition switch ON.
4. Check voltage between rear power vent window motor LH connector B150 terminals 1, 2 and ground.



Connector	Terminals		Condition	Voltage (V) (Approx.)
	(+)	(-)		
B150	1	Ground	Opening	Battery voltage
			Closing	0
	2		Opening	0
			Closing	Battery voltage

Is the inspection result normal?

YES >> Replace rear power vent window motor RH. Refer to GW-22, "Removal and Installation (with Rear Power Vent Windows)".

NO >> Repair or replace harness.

REAR POWER VENT WINDOW RELAY (OPEN) CHECK

Description

INFOID:0000000007317451

Rear power vent windows OPEN/CLOSE by receiving the signal from rear power vent window switch.

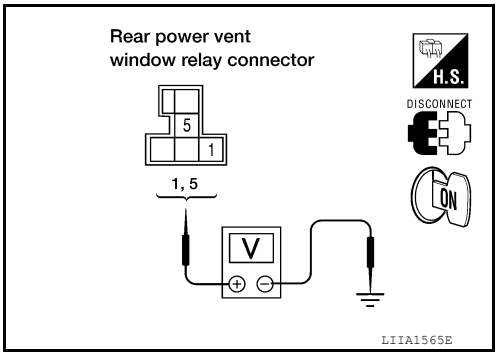
Diagnosis Procedure

INFOID:0000000007317452

Regarding Wiring Diagram information, refer to PWC-66, "Wiring Diagram".

1. CHECK REAR POWER VENT WINDOW RELAY (OPEN) POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear power vent window relay (OPEN).
3. Turn ignition switch ON.
4. Check voltage between rear power vent window relay (OPEN) connector and ground.



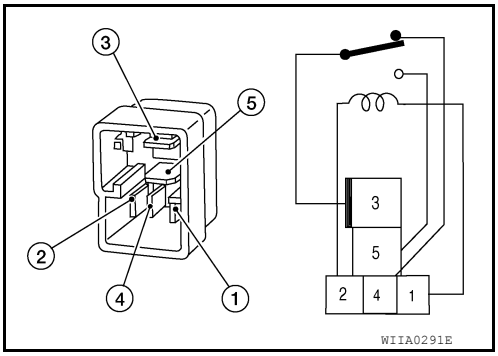
Connector	Terminals		Voltage (V) (Approx.)
	(+)	(-)	
M87	1	Ground	Battery voltage
	5		

Is the inspection result normal?

YES >> GO TO 2
NO >> Repair or replace harness.

2. CHECK REAR POWER VENT WINDOW RELAY (OPEN)

Check continuity between rear power vent window relay (OPEN) terminals 3 and 4, 3 and 5.



Terminals		Condition	Continuity
3	4	12V direct current supply between terminals 1 and 2	No
		No current supply	Yes
3	5	12V direct current supply between terminals 1 and 2	Yes
		No current supply	No

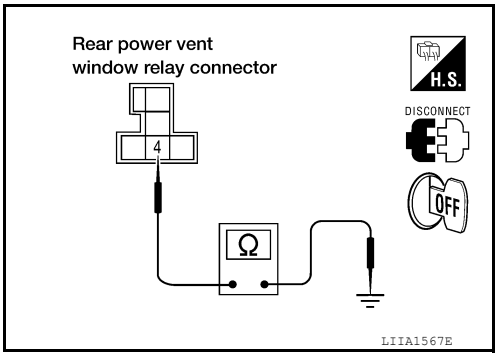
Is the inspection result normal?

YES >> GO TO 3
NO >> Replace rear power vent window relay (OPEN).

3. CHECK REAR POWER VENT WINDOW RELAY (OPEN) GROUND CIRCUIT

Check continuity between rear power vent window relay (OPEN) connector M87 terminal 4 and ground.

4 - Ground : Continuity should exist.



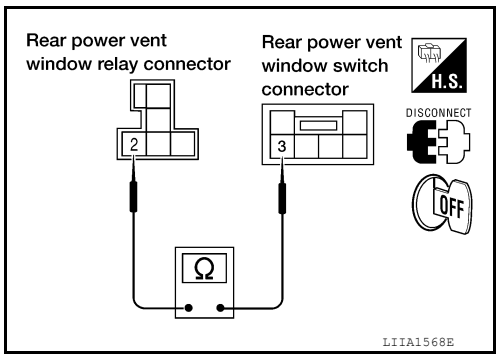
Is the inspection result normal?

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

4. CHECK REAR POWER VENT WINDOW RELAY (OPEN) CIRCUIT

1. Disconnect rear power vent window switch.
2. Check continuity between rear power vent window relay (OPEN) connector M87 terminal 2 and rear power vent window switch connector M95 terminal 3.

2 - 3 : Continuity should exist.



Is the inspection result normal?

YES >> Replace rear power vent window switch.
NO >> Repair or replace harness.

REAR POWER VENT WINDOW RELAY (CLOSE) CHECK

Description

INFOID:0000000007317453

Rear power vent windows OPEN/CLOSE by receiving the signal from rear power vent window switch.

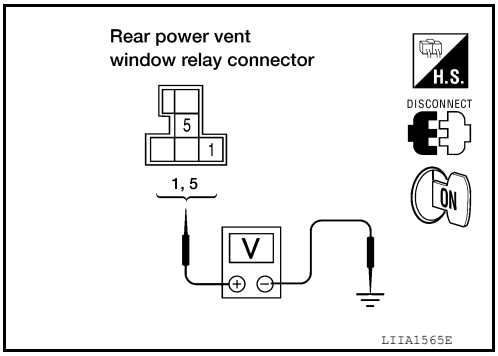
Diagnosis Procedure

INFOID:0000000007317454

Regarding Wiring Diagram information, refer to PWC-66, "Wiring Diagram".

1. CHECK REAR POWER VENT WINDOW RELAY (CLOSE) POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear power vent window relay (CLOSE).
3. Turn ignition switch ON.
4. Check voltage between rear power vent window relay (CLOSE) connector and ground.



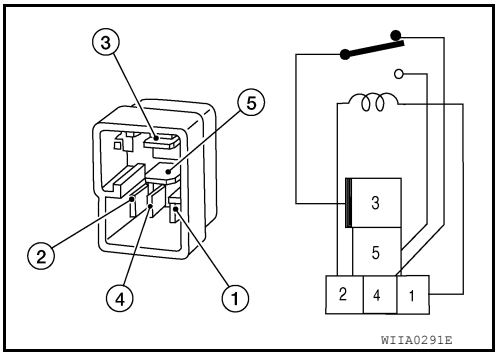
Connector	Terminals		Voltage (V) (Approx.)
	(+)	(-)	
M89	1	Ground	Battery voltage
	5		

Is the inspection result normal?

YES >> GO TO 2
NO >> Repair or replace harness.

2. CHECK REAR POWER VENT WINDOW RELAY (CLOSE)

Check continuity between rear power vent window relay (CLOSE) terminals 3 and 4, 3 and 5.



Terminals		Condition	Continuity
3	4	12V direct current supply between terminals 1 and 2	No
		No current supply	Yes
3	5	12V direct current supply between terminals 1 and 2	Yes
		No current supply	No

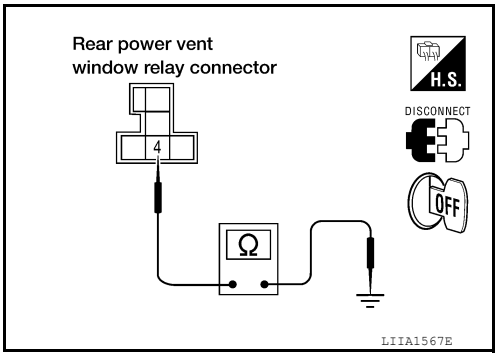
Is the inspection result normal?

YES >> GO TO 3
NO >> Replace rear power vent window relay (CLOSE).

3. CHECK REAR POWER VENT WINDOW RELAY (CLOSE) GROUND CIRCUIT

Check continuity between rear power vent window relay (CLOSE) connector M89 terminal 4 and ground.

4 - Ground : Continuity should exist.



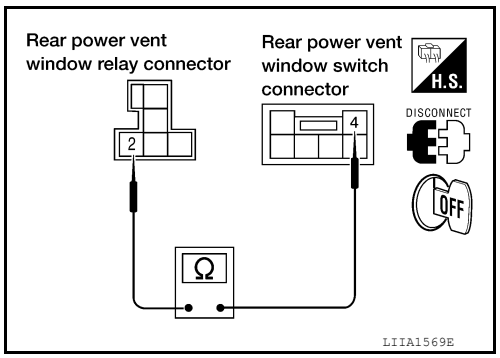
Is the inspection result normal?

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

4. CHECK REAR POWER VENT WINDOW RELAY (CLOSE) CIRCUIT

1. Disconnect rear power vent window switch.
2. Check continuity between rear power vent window relay (CLOSE) connector M89 terminal 2 and rear power vent window switch M95 terminal 4.

2 - 4 : Continuity should exist.



Is the inspection result normal?

YES >> Replace rear power vent window switch.
NO >> Repair or replace harness.

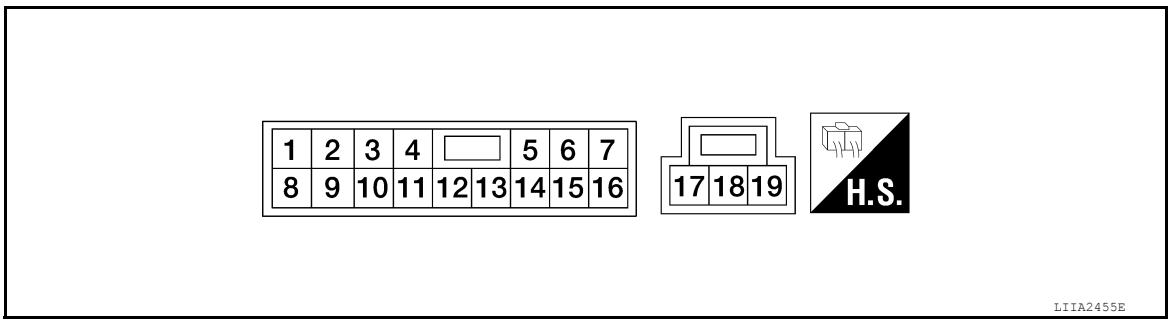
ECU DIAGNOSIS INFORMATION

POWER WINDOW MAIN SWITCH

Reference Value

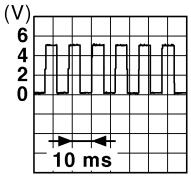
INFOID:0000000007317455

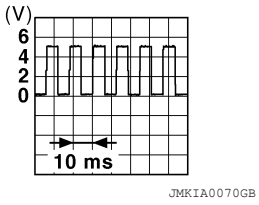
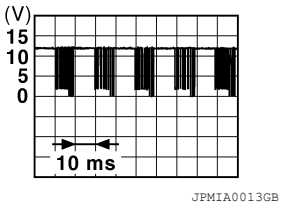
TERMINAL LAYOUT



PHYSICAL VALUES

MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH

Terminal No. (Wire color)		Description		Condition	Voltage [V] (Approx.)
+	–	Signal name	Input/ Output		
1 (R/Y)	Ground	Rear power window motor LH UP signal	Output	When rear LH switch in power window main switch is operated UP.	Battery voltage
2 (W/B)	Ground	Encoder ground	—	—	0
3 (R/B)	Ground	Rear power window motor LH DOWN signal	Output	When rear LH switch in power window main switch is operated DOWN.	Battery voltage
4 (L)	Ground	Door key cylinder switch LH LOCK signal	Input	Key position (Neutral → Locked)	5 → 0
5 (L)	Ground	Rear power window motor RH DOWN signal	Output	When rear RH switch in power window main switch is operated DOWN.	Battery voltage
6 (R)	Ground	Door key cylinder switch LH UNLOCK signal	Input	Key position (Neutral → Unlocked)	5 → 0
7 (R)	Ground	Rear power window motor RH UP signal	Output	When rear RH switch in power window main switch is operated UP.	Battery voltage
8 (G/R)	11	Front door power window motor LH UP signal	Output	When front LH switch in power window main switch is operated UP.	Battery voltage
9 (O)	2	Encoder pulse signal 2	Input	When power window motor operates.	

Terminal No. (Wire color)		Description		Condition	Voltage [V] (Approx.)
+	–	Signal name	Input/ Output		
10 (W/L)	Ground	RAP signal	Input	IGN SW ON	Battery voltage
				Within 45 second after ignition switch is turned to OFF.	Battery voltage
				When front LH or RH door is opened during retained power operation.	0
11 (G/W)	8	Front door power window motor LH DOWN signal	Output	When front LH switch in power window main switch is operated DOWN.	Battery voltage
13 (G/Y)	2	Encoder pulse signal 1	Input	When power window motor operates.	 JMKIA0070GB
14 (LG/W)	Ground	Power window serial link	Input/ Output	IGN SW ON or power window timer operating.	 JPMIA0013GB
15 (BR)	Ground	Encoder power supply	Output	When ignition switch ON or power window timer operates.	10
17 (B)	Ground	Ground	—	—	0
19 (W/R)	Ground	Battery power supply	Input	—	Battery voltage

Fail Safe

INFOID:0000000007317456

FAIL-SAFE CONTROL

Switches to fail-safe control when malfunction is detected in encoder signal that detects up/down speed and direction of door glass. Switches to fail-safe control when error beyond regulation value is detected between the fully closed position and the actual position of the glass.

Error	Error condition
Pulse sensor malfunction	When only one side of pulse signal is being detected for more than the specified value.
Both pulse sensors malfunction	When both pulse signals have not been detected for more than the specified value during glass open/close operation.
Pulse direction malfunction	When the pulse signal that is detected during glass open/close operation detects the opposite condition of power window motor operating direction.
Glass recognition position malfunction 1	When it detects the error between glass fully closed position in power window switch memory and actual fully closed position during glass open/close operation is more than the specified value.

Error	Error condition
Glass recognition position malfunction 2	When it detects pulse count more than the value of glass full stroke during glass open/close operation.
Malfunction of not yet updated closed position of glass	When glass open/close operation is continuously performed without fully closing more than the specified value (approximately 10 strokes).

It changes to condition before initialization and the following functions do not operate when switched to fail-safe control.
- Auto-up operation
- Anti-pinch function
- Retained power function

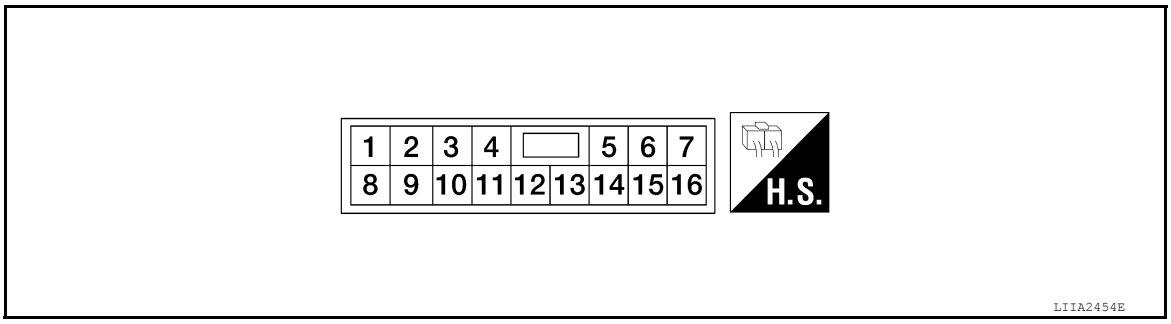
Perform initial operation to recover when switched to fail-safe mode. However, it switches back to fail-safe control when malfunction is found in power window switch or in motor.

FRONT POWER WINDOW SWITCH

Reference Value

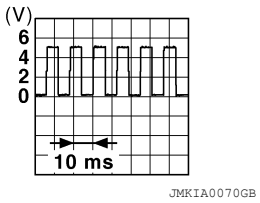
INFOID:0000000007317457

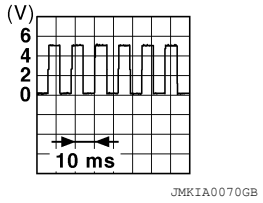
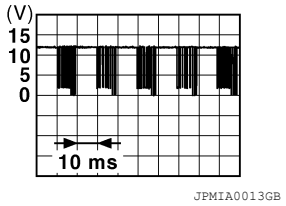
TERMINAL LAYOUT



PHYSICAL VALUES

POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH

Terminal No. (Wire color)		Description		Condition	Voltage [V] (Approx.)
+	–	Signal name	Input/ Output		
3 (W/B)	Ground	Encoder ground	—	—	0
4 (G/R)	Ground	Encoder power supply	Output	When ignition switch ON or power window timer operates	10
8 (L)	9	Power window motor UP signal	Output	When power window motor is UP at operated.	Battery voltage
9 (G)	8	Power window motor DOWN signal	Output	When power window motor is DOWN at operated.	Battery voltage
10 (W/R)	Ground	Battery power supply	Input	—	Battery voltage
11 (B)	Ground	Ground	—	—	0
12 (G/Y)	3	Encoder pulse signal 1	Input	When power window motor operates.	

Terminal No. (Wire color)		Description		Condition	Voltage [V] (Approx.)
+	–	Signal name	Input/ Output		
15 (G/W)	3	Encoder pulse signal 2	Input	When power window motor operates.	 JMKIA0070GB
16 (LG/W)	Ground	Power window serial link	Input/ Output	IGN SW ON or power window timer operating.	 JPMIA0013GB

Fail Safe

INFOID:0000000007317458

FAIL-SAFE CONTROL

Switches to fail-safe control when malfunction is detected in encoder signal that detects up/down speed and direction of door glass. Switches to fail-safe control when error beyond regulation value is detected between the fully closed position and the actual position of the glass.

Error	Error condition
Pulse sensor malfunction	When only one side of pulse signal is being detected for more than the specified value.
Both pulse sensors malfunction	When both pulse signals have not been detected for more than the specified value during glass open/close operation.
Pulse direction malfunction	When the pulse signal that is detected during glass open/close operation detects the opposite condition of power window motor operating direction.
Glass recognition position malfunction 1	When it detects the error between glass fully closed position in power window switch memory and actual fully closed position during glass open/close operation is more than the specified value.
Glass recognition position malfunction 2	When it detects pulse count more than the value of glass full stroke during glass open/close operation.
Malfunction of not yet updated closed position of glass	When glass open/close operation is continuously performed without fully closing more than the specified value (approximately 10 strokes).

It changes to condition before initialization and the following functions do not operate when switched to fail-safe control.

- Auto-up operation
- Anti-pinch function
- Retained power function

Perform initial operation to recover when switched to fail-safe mode. However, it switches back to fail-safe control when malfunction is found in power window switch or in motor.

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:0000000007794039

NOTE:
The Signal Tech II Tool (J-50190) can be used to perform the following functions. Refer to the Signal Tech II User Guide for additional information.

- Activate and display TPMS transmitter IDs
- Display tire pressure reported by the TPMS transmitter
- Read TPMS DTCs
- Register TPMS transmitter IDs
- Check Intelligent Key relative signal strength
- Confirm vehicle Intelligent Key antenna signal strength
- Test remote keyless entry keyfob relative signal strength

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition	Value/Status
ACC ON SW	Ignition switch OFF or ON	Off
	Ignition switch ACC	On
AIR COND SW	A/C switch OFF	Off
	A/C switch ON	On
AIR PRESS FL	Front left tire air pressure value	kPa, kg/cm^2, psi
AIR PRESS FR	Front right tire air pressure value	kPa, kg/cm^2, psi
AIR PRESS RL	Rear left tire air pressure value	kPa, kg/cm^2, psi
AIR PRESS RR	Rear right tire air pressure value	kPa, kg/cm^2, psi
AUTO LIGHT SW	Lighting switch OFF	Off
	Lighting switch AUTO	On
BACK DOOR SW	Back door closed	Off
	Back door opened	On
BRAKE SW	Brake pedal released	Off
	Brake pedal applied	On
BUCKLE SW	Seat belt buckle unfastened	Off
	Seat belt buckle fastened	On
BUZZER	Buzzer in combination meter OFF	Off
	Buzzer in combination meter ON	On
CARGO LAMP SW	Cargo lamp switch OFF	Off
	Cargo lamp switch ON	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-AS	Front door RH closed	Off
	Front door RH opened	On
DOOR SW-DR	Front door LH closed	Off
	Front door LH opened	On
DOOR SW-RL	Rear door LH closed	Off
	Rear door LH opened	On

Monitor Item	Condition	Value/Status
DOOR SW-RR	Rear door RH closed	Off
	Rear door RH opened	On
FAN ON SIG	Blower motor fan switch OFF	Off
	Blower motor fan switch ON	On
FR FOG SW	Front fog lamp switch OFF	Off
	Front fog lamp switch ON	On
FR WASHER SW	Front washer switch OFF	Off
	Front washer switch ON	On
FR WIPER LOW	Front wiper switch OFF	Off
	Front wiper switch LO	On
FR WIPER HI	Front wiper switch OFF	Off
	Front wiper switch HI	On
FR WIPER INT	Front wiper switch OFF	Off
	Front wiper switch INT	On
FR WIPER STOP	Any position other than front wiper stop position	Off
	Front wiper stop position	On
HAZARD SW	When hazard switch is not pressed	Off
	When hazard switch is pressed	On
HEAD LAMP SW1	Headlamp switch OFF	Off
	Headlamp switch 1st	On
HEAD LAMP SW2	Headlamp switch OFF	Off
	Headlamp switch 1st	On
HI BEAM SW	High beam switch OFF	Off
	High beam switch HI	On
ID REGST FL1	ID registration of front left tire incomplete	YET
	ID registration of front left tire complete	DONE
ID REGST FR1	ID registration of front right tire incomplete	YET
	ID registration of front right tire complete	DONE
ID REGST RL1	ID registration of rear left tire incomplete	YET
	ID registration of rear left tire complete	DONE
ID REGST RR1	ID registration of rear right tire incomplete	YET
	ID registration of rear right tire complete	DONE
IGN ON SW	Ignition switch OFF or ACC	Off
	Ignition switch ON	On
IGN SW CAN	Ignition switch OFF or ACC	Off
	Ignition switch ON	On
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	1 - 7
I-KEY LOCK[1]	LOCK button of Intelligent Key is not pressed	Off
	LOCK button of Intelligent Key is pressed	On
I-KEY PANIC[1]	PANIC button of Intelligent Key is not pressed	Off
	PANIC button of Intelligent Key is pressed	On
I-KEY PW DWN[1]	UNLOCK button of Intelligent Key is not pressed	Off
	UNLOCK button of Intelligent Key is pressed for greater than 3 seconds and driver's window operating in DOWN direction	On

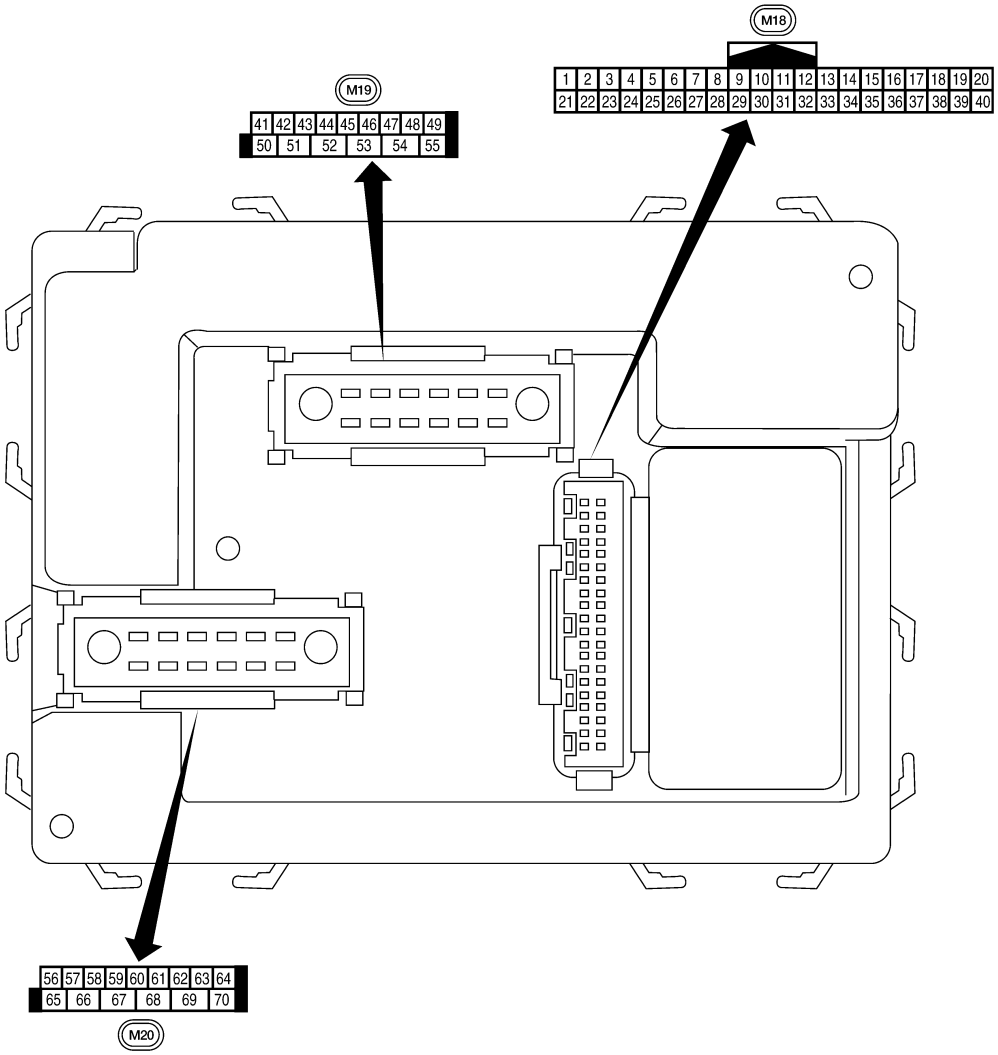
Monitor Item	Condition	Value/Status
I-KEY UNLOCK[1]	UNLOCK button of Intelligent Key is not pressed	Off
	UNLOCK button of Intelligent Key is pressed	On
KEY CYL LK-SW	Door key cylinder LOCK position	Off
	Door key cylinder other than LOCK position	On
KEY CYL UN-SW	Door key cylinder UNLOCK position	Off
	Door key cylinder other than UNLOCK position	On
KEY ON SW	Mechanical key is removed from key cylinder	Off
	Mechanical key is inserted to key cylinder	On
KEYLESS LOCK[2]	LOCK button of key fob is not pressed	Off
	LOCK button of key fob is pressed	On
KEYLESS PANIC[2]	PANIC button of key fob is not pressed	Off
	PANIC button of key fob is pressed	On
KEYLESS UNLOCK[2]	UNLOCK button of key fob is not pressed	Off
	UNLOCK button of key fob is pressed	On
LIGHT SW 1ST	Lighting switch OFF	Off
	Lighting switch 1st	On
OIL PRESS SW	• Ignition switch OFF or ACC • Engine running	Off
	Ignition switch ON	On
OPTICAL SENSOR	Bright outside of the vehicle	Close to 5V
	Dark outside of the vehicle	Close to 0V
PASSING SW	Other than lighting switch PASS	Off
	Lighting switch PASS	On
PUSH SW[1]	Return to ignition switch to LOCK position	Off
	Press ignition switch	On
REAR DEF SW	Rear window defogger switch OFF	Off
	Rear window defogger switch ON	On
RR WASHER SW	Rear washer switch OFF	Off
	Rear washer switch ON	On
RR WIPER INT	Rear wiper switch OFF	Off
	Rear wiper switch INT	On
RR WIPER ON	Rear wiper switch OFF	Off
	Rear wiper switch ON	On
RR WIPER STOP	Rear wiper stop position	Off
	Other than rear wiper stop position	On
RR WIPER STP2	Rear wiper stop position	Off
	Other than rear wiper stop position	On
TURN SIGNAL L	Turn signal switch OFF	Off
	Turn signal switch LH	On
TURN SIGNAL R	Turn signal switch OFF	Off
	Turn signal switch RH	On
VEHICLE SPEED	While driving	Equivalent to speedometer reading
WARNING LAMP	Low tire pressure warning lamp in combination meter OFF	Off
	Low tire pressure warning lamp in combination meter ON	On

1: With Intelligent Key

2: With remote keyless entry system

Terminal Layout

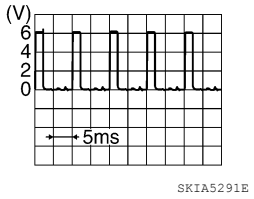
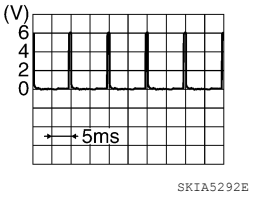
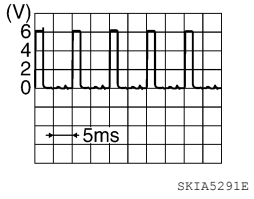
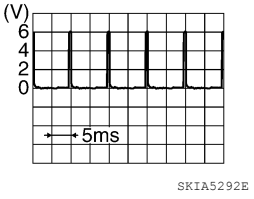
INFOID:0000000007794040

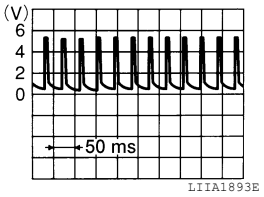
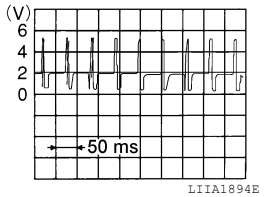
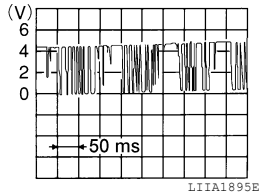
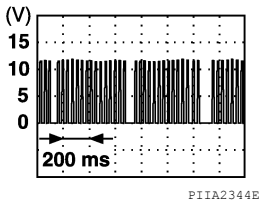


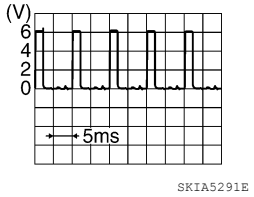
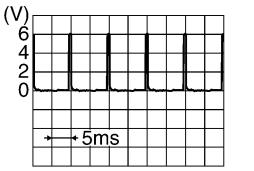
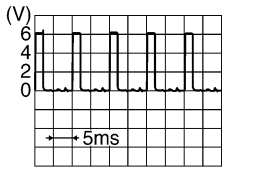
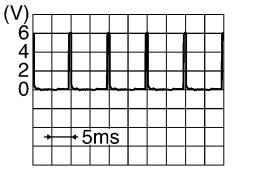
LIIA2443E

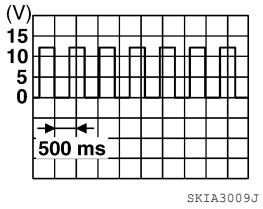
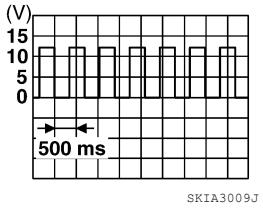
Physical Values

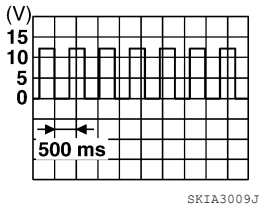
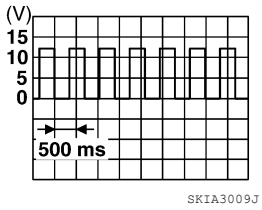
INFOID:0000000007794041

Terminal	Wire color	Signal name	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
1	BR/W	Ignition keyhole illumination	Output	OFF	Door is locked (SW OFF)	Battery voltage
					Door is unlocked (SW ON)	0V
2	SB	Combination switch input 5	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
3	G/Y	Combination switch input 4	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
4	Y	Combination switch input 3	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
5	G/B	Combination switch input 2	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
6	V	Combination switch input 1				
9	GR/R	Rear window defogger switch	Input	ON	Rear window defogger switch ON	0V
					Rear window defogger switch OFF	5V
10	G	Hazard lamp flash	Input	OFF	ON (opening or closing)	0V
					OFF (other than above)	Battery voltage
11	O	Ignition switch (ACC or ON)	Input	ACC or ON	Ignition switch ACC or ON	Battery voltage
12	R/L	Front door switch RH	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
13	GR	Rear door switch RH	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
15	L/W	Tire pressure warning check connector	Input	OFF	—	5V
18	P	Remote keyless entry receiver and optical sensor (ground)	Output	OFF	—	0V

Terminal	Wire color	Signal name	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
19	V/W	Remote keyless entry receiver (power supply)	Output	OFF	Ignition switch OFF	
20	G/W	Remote keyless entry receiver (signal)	Input	OFF	Stand-by (keyfob buttons released)	
					When remote keyless entry receiver receives signal from keyfob (keyfob buttons pressed)	
21	G	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF → ON)	Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage.
22	W/V	BUS	—	—	Ignition switch ON or power window timer operates	
23	G/O	Security indicator lamp	Output	OFF	Goes OFF → illuminates (Every 2.4 seconds)	Battery voltage → 0V
25	BR	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF → ON)	Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage.
26	Y/L	Rear wiper auto stop switch 2	Input	ON	Rise up position (rear wiper arm on stopper)	0V
					A Position (full clockwise stop position)	0V
					Forward sweep (counterclockwise direction)	Fluctuating
					B Position (full counterclockwise stop position)	Battery voltage
					Reverse sweep (clockwise direction)	Fluctuating
27	W/R	Compressor ON signal	Input	ON	A/C switch OFF	5V
					A/C switch ON	0V

Terminal	Wire color	Signal name	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
28	L/R	Front blower monitor	Input	ON	Front blower motor OFF	Battery voltage
					Front blower motor ON	0V
29	W/B	Hazard switch	Input	OFF	ON	0V
					OFF	5V
32	R/G	Combination switch output 5	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
33	R/Y	Combination switch output 4	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
34	L	Combination switch output 3	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
35	O/B	Combination switch output 2	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
36	R/W	Combination switch output 1				
37[1]	B/R	Key switch and ignition knob switch	Input	OFF	Intelligent Key inserted	Battery voltage
					Intelligent Key inserted	0V
37[2]	B/R	Key switch and key lock solenoid	Input	OFF	Key inserted	Battery voltage
					Key inserted	0V
38	W/L	Ignition switch (ON)	Input	ON	—	Battery voltage
39	L	CAN-H	—	—	—	—
40	P	CAN-L	—	—	—	—
42	GR	Glass hatch ajar switch	Input	ON	Glass hatch open	0
					Glass hatch closed	Battery
43	R/B	Back door switch (without power back door) or back door latch (door ajar switch) (with power back door)	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage

Terminal	Wire color	Signal name	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
44	O	Rear wiper auto stop switch 1	Input	ON	Rise up position (rear wiper arm on stopper)	0V
					A Position (full clockwise stop position)	Battery voltage
					Forward sweep (counterclockwise direction)	Fluctuating
					B Position (full counterclockwise stop position)	0V
					Reverse sweep (clockwise direction)	Fluctuating
47	SB	Front door switch LH	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
48	R/Y	Rear door switch LH	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
49	R	Cargo lamp	Output	OFF	Any door open (ON)	0V
					All doors closed (OFF)	Battery voltage
51	G/Y	Trailer turn signal (right)	Output	ON	Turn right ON	 SKIA3009J
52	G/B	Trailer turn signal (left)	Output	ON	Turn left ON	 SKIA3009J
54	Y	Rear wiper output circuit 2	Input	ON	Rise up position (rear wiper arm on stopper)	0V
					A Position (full clockwise stop position)	0V
					Forward sweep (counterclockwise direction)	0V
					B Position (full counterclockwise stop position)	Battery voltage
					Reverse sweep (clockwise direction)	Battery voltage
55	SB	Rear wiper output circuit 1	Output	ON	OFF	0
					ON	Battery voltage
56	R/G	Battery saver output	Output	OFF	15 minutes (early production) or 10 minutes (late production) after ignition switch is turned OFF	0V
				ON	—	Battery voltage
57	Y/R	Battery power supply	Input	OFF	—	Battery voltage

Terminal	Wire color	Signal name	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
58	W/R	Optical sensor	Input	ON	When optical sensor is illuminated	3.1V or more
					When optical sensor is not illuminated	0.6V or less
59	G	Front door lock assembly LH actuator (unlock)	Output	OFF	OFF (neutral)	0V
					ON (unlock)	Battery voltage
60	G/B	Turn signal (left)	Output	ON	Turn left ON	 SKIA3009J
61	G/Y	Turn signal (right)	Output	ON	Turn right ON	 SKIA3009J
62	R/W	Step lamp LH and RH	Output	OFF	ON (any door open)	0V
					OFF (all doors closed)	Battery voltage
63	L	Interior room/map lamp	Output	OFF	Any door switch: ON (open)	0V
					Any door switch: OFF (closed)	Battery voltage
65	V	All door lock actuators (lock)	Output	OFF	OFF (neutral)	0V
					ON (lock)	Battery voltage
66	G/Y	Front door lock actuator RH, rear door lock actuators LH/RH and back door lock actuator (unlock)	Output	OFF	OFF (neutral)	0V
					ON (unlock)	Battery voltage
67	B	Ground	Input	ON	—	0V
68	W/L	Power window power supply (RAP)	Output	—	Ignition switch ON	Battery voltage
					Within 45 seconds after ignition switch OFF	Battery voltage
					More than 45 seconds after ignition switch OFF	0V
					When front door LH or RH is open or power window timer operates	0V
69	W/R	Power window power supply	Output	—	—	Battery voltage
70	W/B	Battery power supply	Input	OFF	—	Battery voltage

1: With Intelligent Key system

2: With remote keyless entry system

Fail Safe

INFOID:0000000007794042

Fail-safe index

BCM performs fail-safe control when any DTC listed below is detected.

Display contents of CONSULT	Fail-safe	Cancellation
U1000: CAN COMM CIRCUIT	Inhibit engine cranking	When the BCM re-establishes communication with the other modules.

DTC Inspection Priority Chart

INFOID:0000000007794043

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	• B2190: NATS ANTENNA AMP • B2191: DIFFERENCE OF KEY • B2192: ID DISCORD BCM-ECM • B2193: CHAIN OF BCM-ECM • B2013: STRG COMM 1 • B2552: INTELLIGENT KEY • B2590: NATS MALFUNCTION
3	• C1729: VHCL SPEED SIG ERR • C1735: IGNITION SIGNAL
4	• C1708: [NO DATA] FL • C1709: [NO DATA] FR • C1710: [NO DATA] RR • C1711: [NO DATA] RL • C1712: [CHECKSUM ERR] FL • C1713: [CHECKSUM ERR] FR • C1714: [CHECKSUM ERR] RR • C1715: [CHECKSUM ERR] RL • C1716: [PRESSDATA ERR] FL • C1717: [PRESSDATA ERR] FR • C1718: [PRESSDATA ERR] RR • C1719: [PRESSDATA ERR] RL • C1720: [CODE ERR] FL • C1721: [CODE ERR] FR • C1722: [CODE ERR] RR • C1723: [CODE ERR] RL • C1724: [BATT VOLT LOW] FL • C1725: [BATT VOLT LOW] FR • C1726: [BATT VOLT LOW] RR • C1727: [BATT VOLT LOW] RL

DTC Index

INFOID:0000000007794044

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	Fail-safe	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	—	—	—	BCS-29

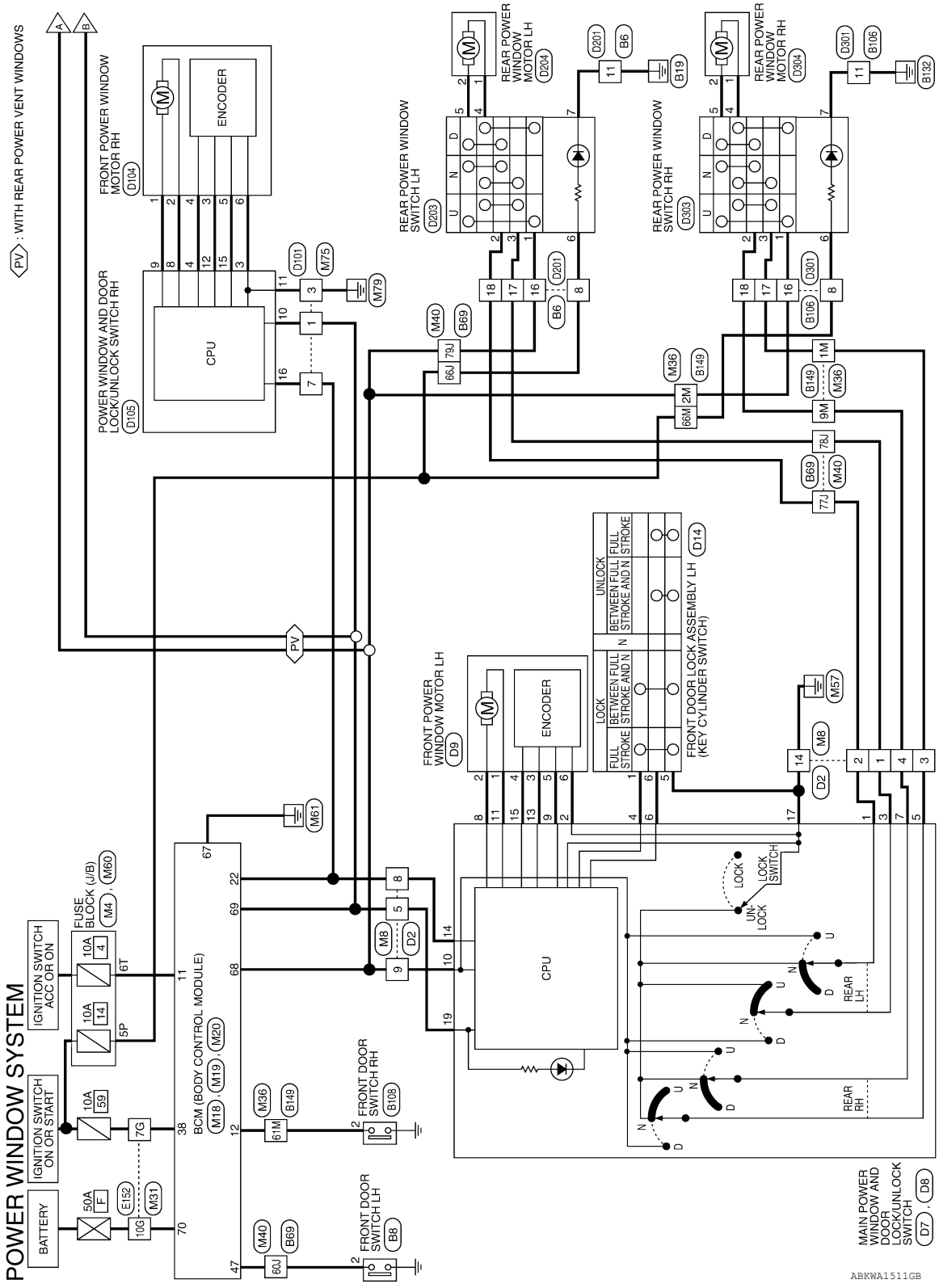
CONSULT display	Fail-safe	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page
B2013: STRG COMM 1	—	—	—	SEC-30
B2190: NATS ANTENNA AMP	—	—	—	SEC-33 (with I-Key), SEC-139 (without I-Key)
B2191: DIFFERENCE OF KEY	—	—	—	SEC-36 (with I-Key), SEC-142 (without I-Key)
B2192: ID DISCORD BCM-ECM	—	—	—	SEC-37 (with I-Key), SEC-143 (without I-Key)
B2193: CHAIN OF BCM-ECM	—	—	—	SEC-39 (with I-Key), SEC-145 (without I-Key)
B2552: INTELLIGENT KEY	—	—	—	SEC-41
B2590: NATS MALFUNCTION	—	—	—	SEC-42
C1708: [NO DATA] FL	—	—	—	WT-14
C1709: [NO DATA] FR	—	—	—	WT-16
C1710: [NO DATA] RR	—	—	—	WT-16
C1711: [NO DATA] RL	—	—	—	WT-16
C1712: [CHECKSUM ERR] FL	—	—	—	WT-16
C1713: [CHECKSUM ERR] FR	—	—	—	WT-16
C1714: [CHECKSUM ERR] RR	—	—	—	WT-16
C1715: [CHECKSUM ERR] RL	—	—	—	WT-16
C1716: [PRESSDATA ERR] FL	—	—	—	WT-18
C1717: [PRESSDATA ERR] FR	—	—	—	WT-16
C1718: [PRESSDATA ERR] RR	—	—	—	WT-16
C1719: [PRESSDATA ERR] RL	—	—	—	WT-16
C1720: [CODE ERR] FL	—	—	—	WT-16
C1721: [CODE ERR] FR	—	—	—	WT-16
C1722: [CODE ERR] RR	—	—	—	WT-16
C1723: [CODE ERR] RL	—	—	—	WT-16
C1724: [BATT VOLT LOW] FL	—	—	—	WT-16
C1725: [BATT VOLT LOW] FR	—	—	—	WT-16
C1726: [BATT VOLT LOW] RR	—	—	—	WT-16
C1727: [BATT VOLT LOW] RL	—	—	—	WT-16
C1729: VHCL SPEED SIG ERR	—	—	—	WT-20
C1735: IGN_CIRCUIT_OPEN	—	—	—	—

WIRING DIAGRAM

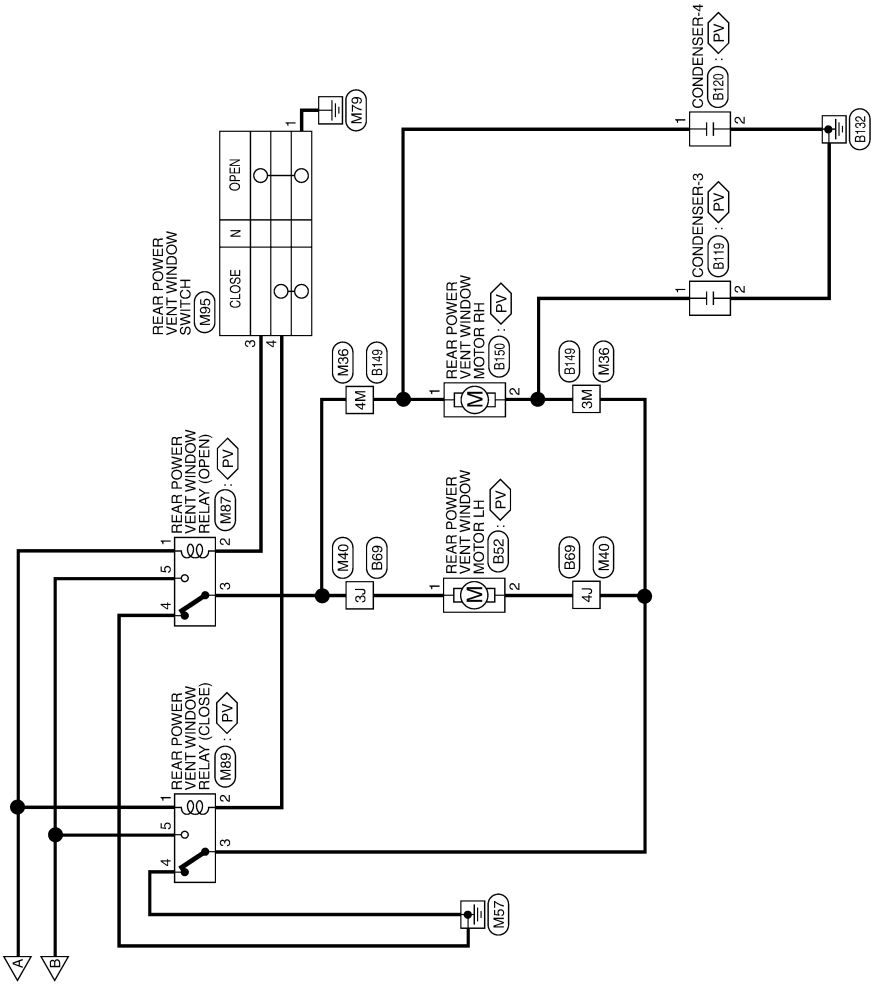
POWER WINDOW SYSTEM

Wiring Diagram

INFOID:0000000007317465



PV : WITH REAR POWER VENT WINDOWS



ABKWA1512GB

POWER WINDOW SYSTEM CONNECTORS

Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
5P	O/L	–

Connector No.	M8
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	R/B	–
2	R/Y	–
3	L	–
4	R	–
5	W/R	–
8	W/V	–
9	W/L	–
14	B	–

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
11	O	ACC SW
12	R/L	DOOR SW (AS)
22	W/V	ANTI-PINCH SERIAL LINK (RX, TX)
38	W/L	IGN SW

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	WHITE

H.S.

41	42	43	44	45	46	47	48	49
50	51	52	53	54	55

Terminal No.	Color of Wire	Signal Name
47	SB	DOOR SW (DR)

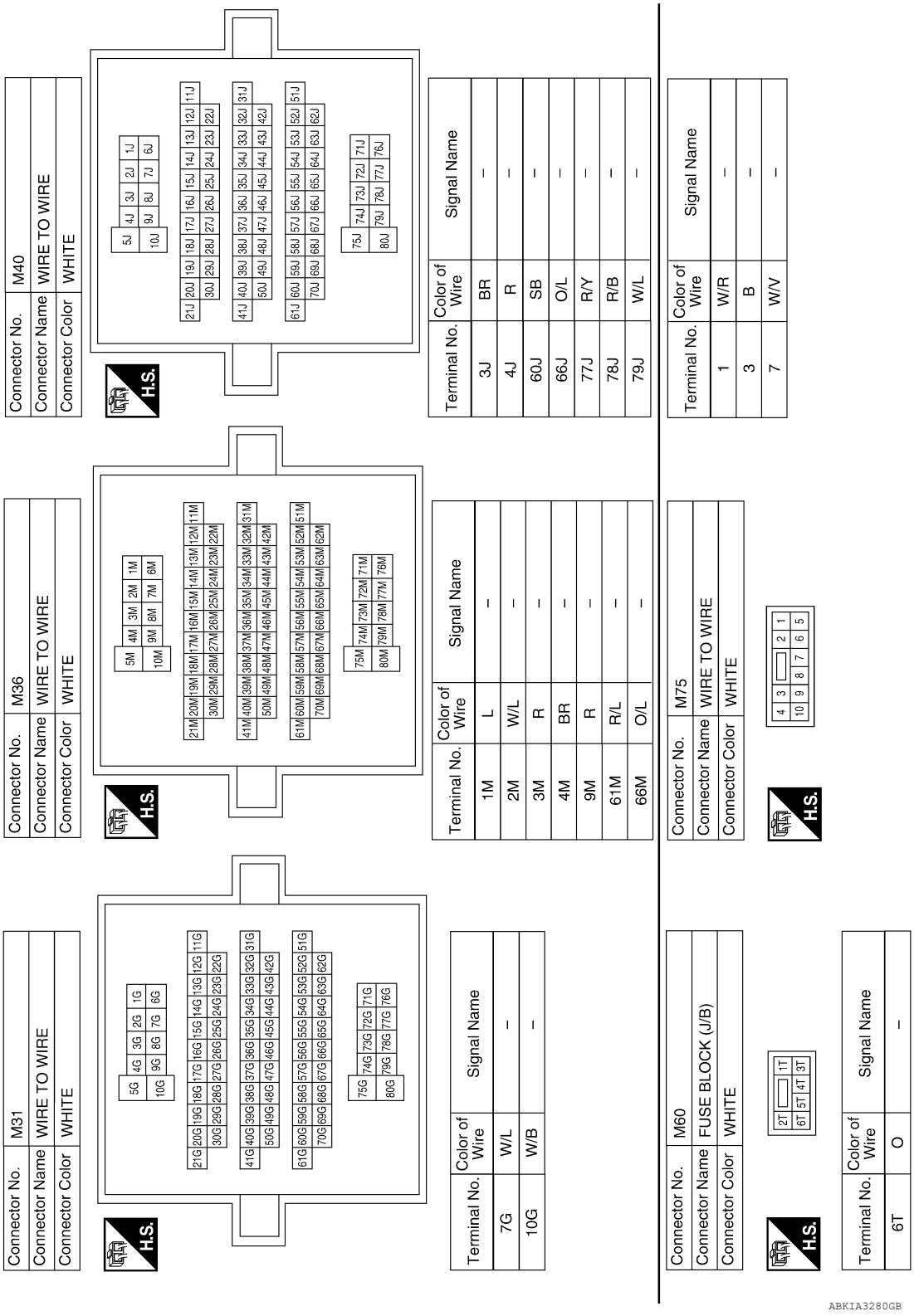
Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK

H.S.

56	57	58	59	60	61	62	63	64
65	66	67	68	69	70

Terminal No.	Color of Wire	Signal Name
67	B	GND (POWER)
68	W/L	POWER WINDOW POWER SUPPLY (LINKED TO RAP)
69	W/R	POWER WINDOW POWER SUPPLY(BAT)
70	W/B	BAT (F/L)

ABKIA3279GB


Connector No. M40
Connector Name WIRE TO WIRE
Connector Color WHITE
H.S.
Terminal No. Color of Wire Signal Name
3J BR –
4J R –
60J SB –
66J O/L –
77J R/Y –
78J R/B –
79J W/L –
Terminal No. Color of Wire Signal Name
1 W/R –
3 B –
7 W/V –
Connector No. M36
Connector Name WIRE TO WIRE
Connector Color WHITE
H.S.
Terminal No. Color of Wire Signal Name
1M L –
2M W/L –
3M R –
4M BR –
9M R –
61M R/L –
66M O/L –
Connector No. M75
Connector Name WIRE TO WIRE
Connector Color WHITE
H.S.
Connector No. M31
Connector Name WIRE TO WIRE
Connector Color WHITE
H.S.
Terminal No. Color of Wire Signal Name
7G W/L –
10G W/B –
Connector No. M60
Connector Name FUSE BLOCK (J/B)
Connector Color WHITE
H.S.
Terminal No. Color of Wire Signal Name
6T O –
ABKIA3280GB

Connector No.	M87
Connector Name	REAR POWER VENT WINDOW RELAY (OPEN)
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	W/L	–
2	R/G	–
3	BR	–
4	B	–
5	W/R	–

Connector No.	M89
Connector Name	REAR POWER VENT WINDOW RELAY (CLOSE)
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	W/L	–
2	G/R	–
3	R	–
4	B	–
5	W/R	–

Connector No.	M95
Connector Name	REAR POWER VENT WINDOW SWITCH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	B	–
3	R/G	–
4	G/R	–

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
7G	L/W	–
10G	W/B	–

Connector No.	B6
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
8	O/L	–
11	B	–
16	W/L	–
17	R/B	–
18	R/Y	–

ABKIA2819GB

Connector No.	B8
Connector Name	FRONT DOOR SWITCH LH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
2	SB	–

Connector No.	B52
Connector Name	REAR POWER VENT WINDOW MOTOR LH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	Y	–
2	G	–

Connector No.	B69
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
3J	Y	–
4J	G	–
60J	SB	–
66J	O/L	–
77J	R/Y	–
78J	R/B	–
79J	W/L	–

Connector No.	B106
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
8	O/L	–
11	B	–
16	W/L	–
17	L	–
18	R	–

ABKIA2820GB

Connector No.	B108
Connector Name	FRONT DOOR SWITCH RH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
2	R/L	–

Connector No.	B119
Connector Name	CONDENSER-3
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	BR	–
2	B	–

Connector No.	B120
Connector Name	CONDENSER-4
Connector Color	WHITE

H.S.

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

Connector No.	B149
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1M	L	–
2M	W/L	–
3M	BR	–
4M	R	–
9M	R	–
61M	R/L	–
66M	O/L	–

Connector No.	B150
Connector Name	REAR POWER VENT WINDOW MOTOR RH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	R	–
2	BR	–

ABKIA2821GB

Connector No.	D2
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	R/B	–
2	R/Y	–
3	L	–
4	R	–
5	W/R	–
8	LG/W	–
9	W/L	–
14	B	–

Connector No.	D8
Connector Name	MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH
Connector Color	WHITE

H.S.

17	18	19

Terminal No.	Color of Wire	Signal Name
17	B	GND
19	W/R	P-WDW BAT

Connector No.	D7
Connector Name	MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	R/Y	–
2	W/B	–
3	R/B	–
4	L	LOCK
5	L	–

Terminal No.	Color of Wire	Signal Name
6	R	UNLOCK
7	R	–
8	G/R	–
9	O	–
10	W/L	–
11	G/W	–
13	G/Y	–
14	LG/W	ANTI PINCH SERIAL LINK
15	BR	–

Connector No.	D9
Connector Name	FRONT POWER WINDOW MOTOR LH
Connector Color	GRAY

H.S.

2	5	1
4	3	6

Terminal No.	Color of Wire	Signal Name
1	G/W	–
2	G/R	–
3	G/Y	–
4	BR	–
5	O	–
6	W/B	–

Connector No.	D14
Connector Name	FRONT DOOR LOCK ASSEMBLY LH
Connector Color	BLACK

H.S.

1	2	3	4	5	6

Terminal No.	Color of Wire	Signal Name
1	L	LOCK
5	B	GND
6	R	UNLOCK

ABKIA2822GB

Connector No.	D101
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1	2		3	4
5	6	7	8	9	10

Terminal No.	Color of Wire	Signal Name
1	W/R	–
3	B	–
7	LG/W	–

Connector No.	D104
Connector Name	FRONT POWER WINDOW MOTOR RH
Connector Color	GRAY

H.S.

2	5	1
4	3	6

Terminal No.	Color of Wire	Signal Name
1	G	–
2	L	–
3	G/Y	–
4	G/R	–
5	G/W	–
6	W/B	–

Connector No.	D105
Connector Name	POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
3	W/B	–
4	G/R	–

Terminal No.	Color of Wire	Signal Name
8	L	–
9	G	–
10	W/R	–
11	B	GND
12	G/Y	–
15	G/W	–
16	LG/W	ANTI PINCH SERIAL LINK

Connector No.	D201
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1	2	3	4	5		6	7	8	9	10
11	12	13	14	15	16	17	18

Terminal No.	Color of Wire	Signal Name
8	O/L	–
11	B	–
16	W/L	–
17	R/B	–
18	R/Y	–

ABKIA2823GB

Connector No.	D301
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

1	2	3	4	5		6	7	8	9	10
11	12	13	14	15		16	17	18		

Terminal No.	Color of Wire	Signal Name
8	O/L	–
11	B	–
16	W/L	–
17	L	–
18	R	–

Connector No.	D204
Connector Name	REAR POWER WINDOW MOTOR LH
Connector Color	GRAY

H.S.

2	1

Terminal No.	Color of Wire	Signal Name
1	G	–
2	L	–

Connector No.	D304
Connector Name	REAR POWER WINDOW MOTOR RH
Connector Color	GRAY

H.S.

2	1

Terminal No.	Color of Wire	Signal Name
1	Y/B	–
2	BR	–

Connector No.	D203
Connector Name	REAR POWER WINDOW SWITCH LH
Connector Color	WHITE

H.S.

7	6
2 3 4 5	1

Terminal No.	Color of Wire	Signal Name
1	W/L	–
2	R/Y	–
3	R/B	–
4	G	–
5	L	–
6	O/L	–
7	B	–

Connector No.	D303
Connector Name	REAR POWER WINDOW SWITCH RH
Connector Color	WHITE

H.S.

7	6
2 3 4 5	1

Terminal No.	Color of Wire	Signal Name
1	W/L	–
2	R	–
3	L	–
4	Y/B	–
5	BR	–
6	O/L	–
7	B	–

ABKIA2869GB

SYMPTOM DIAGNOSIS

NONE OF THE POWER WINDOWS CAN BE OPERATED USING ANY SWITCH

Diagnosis Procedure

INFOID:0000000007317466

1. CHECK BCM POWER SUPPLY AND GROUND CIRCUIT

Check BCM power supply and ground circuit.
Refer to BCS-30, "Diagnosis Procedure".

Is the inspection result normal?

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

2. CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH POWER SUPPLY AND GROUND CIRCUIT

Check power window switch main power supply and ground circuit.
Refer to PWC-11, "POWER WINDOW MAIN SWITCH : Component Function Check".

Is the inspection result normal?

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

3. CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH SERIAL CIRCUIT

Check main power window and door lock/unlock switch serial circuit.
Refer to PWC-11, "POWER WINDOW MAIN SWITCH : Component Function Check".

Is the inspection result normal?

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

4. CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH

Check main power window and door lock/unlock switch.
Refer to PWC-11, "POWER WINDOW MAIN SWITCH : Component Function Check".

Is the inspection result normal?

YES >> Inspection End.
NO >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".

DRIVER SIDE POWER WINDOW ALONE DOES NOT OPERATE

Diagnosis Procedure

INFOID:0000000007317467

1. CHECK FRONT POWER WINDOW MOTOR LH

Check front power window motor LH.
Refer to PWC-20, "DRIVER SIDE : Component Function Check".

Is the inspection result normal?

YES >> Inspection End.
NO >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".

FRONT PASSENGER SIDE POWER WINDOW ALONE DOES NOT OPERATE

Diagnosis Procedure

INFOID:0000000007317468

1. CHECK POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH

Check power window and door lock/unlock switch RH.
Refer to PWC-15, "FRONT POWER WINDOW SWITCH : Component Function Check".

Is the inspection result normal?

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

2. CHECK POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH SERIAL LINK CIRCUIT

Check power window and door lock/unlock switch RH serial link circuit.
Refer to PWC-39, "FRONT POWER WINDOW SWITCH : Component Function Check".

Is the inspection result normal?

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

3. CHECK FRONT POWER WINDOW MOTOR RH CIRCUIT

Check front power window motor RH circuit.
Refer to PWC-21, "PASSENGER SIDE : Component Function Check".

Is the inspection result normal?

YES >> Inspection End.
NO >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".

REAR LH SIDE POWER WINDOW ALONE DOES NOT OPERATE

Diagnosis Procedure

INFOID:0000000007317469

1. CHECK REAR POWER WINDOW SWITCH LH

Check rear power window switch LH.
Refer to PWC-17, "REAR POWER WINDOW SWITCH : Component Function Check".

Is the inspection result normal?

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

2. CHECK REAR POWER WINDOW MOTOR LH

Check rear power window motor LH.
Refer to PWC-23, "REAR LH : Component Function Check".

Is the inspection result normal?

YES >> Inspection End.
NO >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".

REAR RH SIDE POWER WINDOW ALONE DOES NOT OPERATE

Diagnosis Procedure

INFOID:0000000007317470

1. CHECK REAR POWER WINDOW SWITCH RH

Check rear power window switch RH.
Refer to PWC-17, "REAR POWER WINDOW SWITCH : Component Function Check".

Is the inspection result normal?

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

2. CHECK REAR POWER WINDOW MOTOR RH

Check rear power window motor RH.
Refer to PWC-24, "REAR RH : Component Function Check".

Is the inspection result normal?

YES >> Inspection End.
NO >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".

ANTI-PINCH SYSTEM DOES NOT OPERATE NORMALLY (DRIVER SIDE)

Diagnosis Procedure

INFOID:0000000007317471

1. CHECK DOOR WINDOW SLIDING PART

- A foreign material adheres to window glass or glass run rubber.
- Glass run rubber wear or deformation.
- Sash is tilted too much or not enough.

Is the inspection result normal?

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

2. CHECK ENCODER CIRCUIT

Check encoder circuit.
Refer to PWC-27, "DRIVER SIDE : Component Function Check".

Is the inspection result normal?

YES >> Inspection End.
NO >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".

ANTI-PINCH SYSTEM DOES NOT OPERATE NORMALLY (PASSENGER SIDE)

Diagnosis Procedure

INFOID:0000000007317472

1. CHECK DOOR WINDOW SLIDING PART

- A foreign material adheres to window glass or glass run rubber.
- Glass run rubber wear or deformation.
- Sash is tilted too much or not enough.

Is the inspection result normal?

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

2. CHECK ENCODER CIRCUIT

Check encoder circuit.
Refer to PWC-29, "PASSENGER SIDE : Component Function Check".

Is the inspection result normal?

YES >> Inspection End.
NO >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".

AUTO OPERATION DOES NOT OPERATE BUT MANUAL OPERATES NORMALLY (DRIVER SIDE)

Diagnosis Procedure

INFOID:0000000007317473

1. RESET LIMIT SWITCH

Refer to GW-15, "Removal and Installation".

Does automatic function operate normally?

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

2. CHECK ENCODER

Check encoder.
Refer to PWC-27, "DRIVER SIDE : Component Function Check".

Is the inspection result normal?

YES >> Inspection End.
NO >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".

AUTO OPERATION DOES NOT OPERATE BUT MANUAL OPERATES NORMALLY (PASSENGER SIDE)

Diagnosis Procedure

INFOID:0000000007317474

1. RESET LIMIT SWITCH

Refer to GW-15, "Removal and Installation".

Does automatic function operate normally?

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

2. CHECK ENCODER

Check encoder.
Refer to PWC-29, "PASSENGER SIDE : Component Function Check".

Is the inspection result normal?

YES >> Inspection End.
NO >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".

POWER WINDOW RETAINED POWER OPERATION DOES NOT OPERATE PROPERLY

Diagnosis Procedure

INFOID:0000000007317475

1. CHECK FRONT DOOR SWITCH

Check front door switch.
Refer to PWC-33, "Component Function Check".

Is the inspection result normal?

YES >> Inspection End.
NO >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".

DOES NOT OPERATE BY KEY CYLINDER SWITCH

Diagnosis Procedure

INFOID:0000000007317476

1. CHECK FRONT DOOR LOCK ASSEMBLY LH (KEY CYLINDER SWITCH)

Check front door lock assembly LH (key cylinder switch).
Refer to PWC-35, "Component Function Check".

Is the inspection result normal?

YES >> Inspection End.
NO >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".

KEYLESS POWER WINDOW DOWN DOES NOT OPERATE

Diagnosis Procedure

INFOID:0000000007317477

1. CHECK INTELLIGENT KEY OR KEYFOB FUNCTION

Check Intelligent Key or keyfob function.
Refer to BCS-23, "INTELLIGENT KEY : CONSULT Function (BCM - INTELLIGENT KEY)" with Intelligent Key or BCS-19, "MULTI REMOTE ENT : CONSULT Function (BCM - MULTI REMOTE ENT)" with remote keyless entry system.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".
NO >> Replace BCM. Refer to BCS-54, "Removal and Installation".

POWER WINDOW LOCK SWITCH DOES NOT FUNCTION

Diagnosis Procedure

INFOID:0000000007317478

1. REPLACE MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH

Replace main power window and door lock/unlock switch.
Refer to PWC-93, "Removal and Installation".

Is the inspection result normal?

YES >> Inspection End.
NO >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".

REAR POWER VENT WINDOWS DO NOT OPERATE

Diagnosis Procedure

INFOID:0000000007317479

1. CHECK BCM POWER SUPPLY AND GROUND CIRCUIT

Check BCM power supply and ground circuit.
Refer to BCS-30, "Diagnosis Procedure".

Is the inspection result normal?

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

2. CHECK REAR POWER VENT WINDOW SWITCH

Check rear power vent window switch.
Refer to PWC-43, "Diagnosis Procedure".

Is the inspection result normal?

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

3. CHECK REAR POWER VENT WINDOW MOTOR CIRCUIT

Check rear power vent window motor circuit.
Refer to PWC-44, "Diagnosis Procedure" and PWC-45, "Diagnosis Procedure".

Is the inspection result normal?

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

4. CHECK REAR POWER VENT WINDOW RELAY

Check rear power vent window relay.
Refer to PWC-46, "Diagnosis Procedure" and PWC-48, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Inspection End.
NO >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".

PRECAUTION

PRECAUTIONS

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

INFOID:0000000007317480

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 SR and SB section of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SR section.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

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

WARNING:

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

Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

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NOTE:

- This Procedure is applied only to models with Intelligent Key system and NATS (NISSAN ANTI-THEFT SYSTEM).
- Remove and install all control units after disconnecting both battery cables with the ignition knob in the ″LOCK″ position.
- Always use CONSULT to perform self-diagnosis as a part of each function inspection after finishing work. If DTC is detected, perform trouble diagnosis according to self-diagnostic results.

For models equipped with the Intelligent Key system and NATS, an electrically controlled steering lock mechanism is adopted on the key cylinder.
For this reason, if the battery is disconnected or if the battery is discharged, the steering wheel will lock and steering wheel rotation will become impossible.
If steering wheel rotation is required when battery power is interrupted, follow the procedure below before starting the repair operation.

OPERATION PROCEDURE

1. Connect both battery cables.
   NOTE:
   Supply power using jumper cables if battery is discharged.
2. Use the Intelligent Key or mechanical key to turn the ignition switch to the ″ACC″ position. At this time, the steering lock will be released.
3. Disconnect both battery cables. The steering lock will remain released and the steering wheel can be rotated.
4. Perform the necessary repair operation.

5. When the repair work is completed, return the ignition switch to the ″LOCK″ position before connecting the battery cables. (At this time, the steering lock mechanism will engage.)
6. Perform a self-diagnosis check of all control units using CONSULT.

Precaution for Work

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

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

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

PREPARATION

PREPARATION

Special Service Tool

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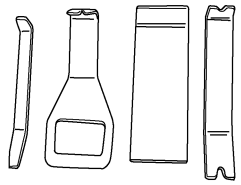
The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description
— (J-46534) Trim tool set  AWJIA0483ZZ	Removing trim components

REMOVAL AND INSTALLATION

POWER WINDOW MAIN SWITCH

Removal and Installation

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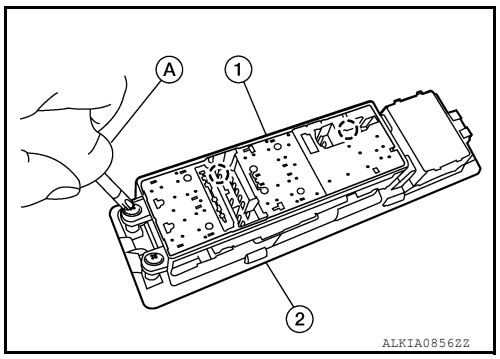
REMOVAL

1. Remove the power window main switch finisher and power window main switch (2) from the door finisher LH using a suitable tool.
   • Disconnect the power window switch electrical connector.
2. Remove the power window main switch (1) screws using a suitable tool (A).
3. Separate the power window main switch from the finisher (2).



INSTALLATION

Installation is in the reverse order of removal.

FRONT POWER WINDOW SWITCH

Removal and Installation

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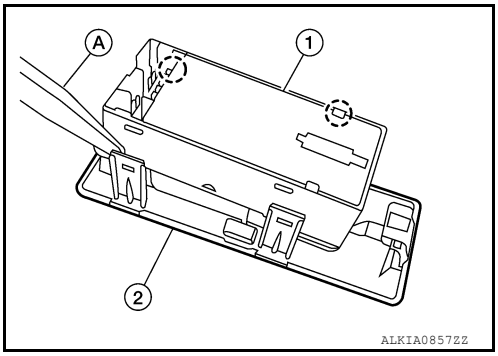
REMOVAL

1. Remove the front power window switch finisher and front power window switch (2) from the front door finisher RH using a suitable tool.
   - Disconnect the front power window switch electrical connector.
2. Release the tabs using a suitable tool (A).
   ◌: Pawl
3. Separate the front power window switch (1) from the finisher.



INSTALLATION

Installation is in the reverse order of removal.

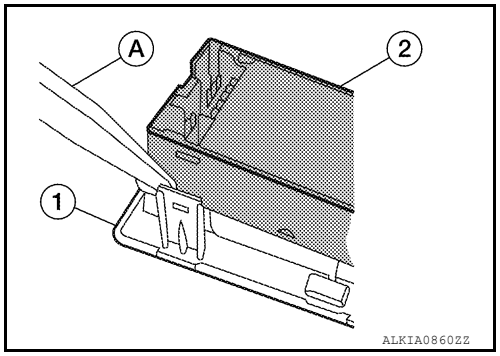
REAR POWER WINDOW SWITCH

Removal and Installation

INFOID:0000000007317486

REMOVAL

1. Remove the rear power window switch finisher and rear power window switch (1) from the rear door finisher using a suitable tool.
   - Disconnect the rear power window switch electrical connector.
2. Release the tabs using a suitable tool (A).
3. Remove the rear power window switch (2).



INSTALLATION

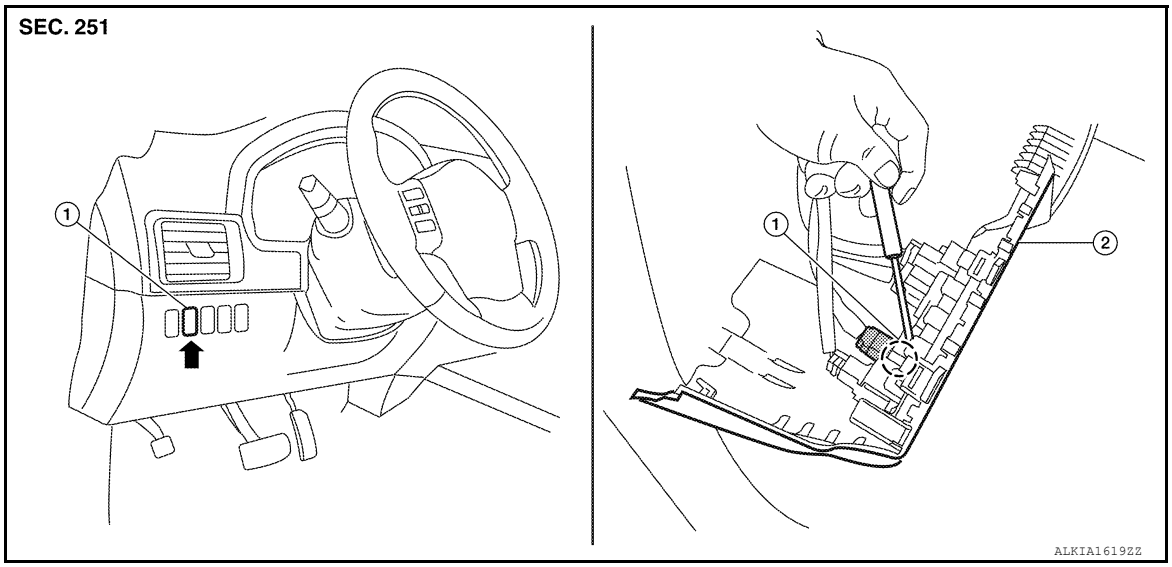
Installation is in the reverse order of removal.

REAR POWER VENT WINDOW SWITCH

Removal and Installation

INFOID:0000000007317487

REMOVAL



1. Rear power vent window switch
2. Instrument lower panel LH
Tab

1. Remove the instrument lower panel LH. Refer to IP-11, "Exploded View".
2. Release the upper and lower tabs using a suitable tool.
3. Remove the rear power vent window switch.

INSTALLATION

Installation is in the reverse order of removal.