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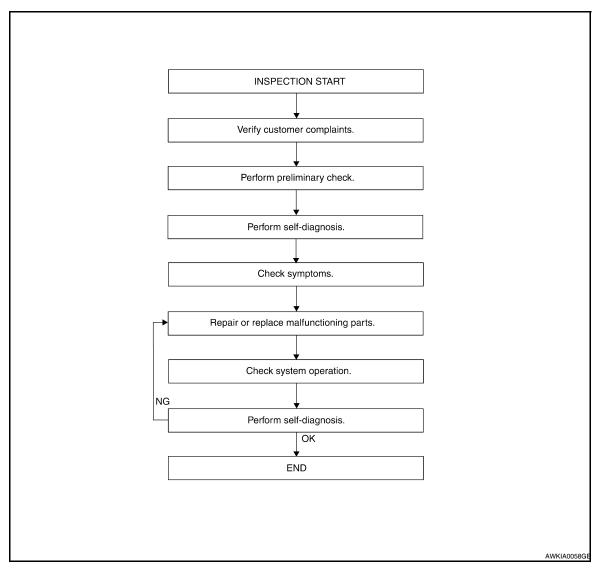
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BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

WORK FLOW



DETAILED FLOW

1. CUSTOMER INFORMATION

Interview the customer to obtain detailed information about the symptom.

>> GO TO 2

2. PRELIMINARY CHECK

Perform preliminary check. Refer to PWC-6, "System Diagram".

>> GO TO 3

3. SELF-DIAGNOSIS

Perform self-diagnosis. Refer to BCS-49, "DTC Index".

DIAGNOSIS AND REPAIR WORKFLOW

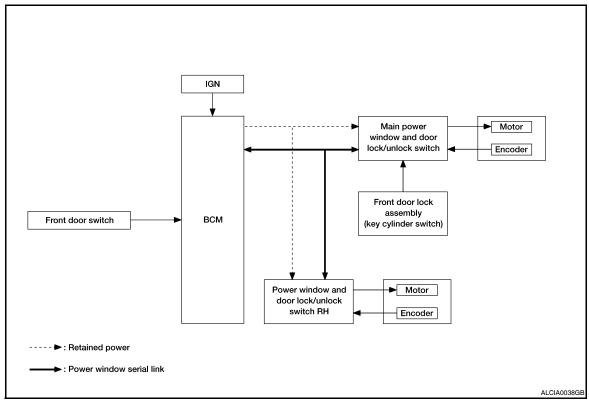
< BASIC INSPECTION > Α >> GO TO 4 4. SYMPTOM Check for symptoms. Refer to PWC-118, "Diagnosis Procedure". В >> GO TO 5 5. MALFUNCTIONING PARTS С Repair or replace the applicable parts. D >> GO TO 6 6. SYSTEM OPERATION Е Check system operation. >> GO TO 7 F 7. SELF-DIAGNOSIS Perform self-diagnosis. Refer to BCS-49, "DTC Index". G Are any DTCs indicated? YES >> GO TO 5 NO >> Inspection End. Н J PWC L M Ν 0

FUNCTION DIAGNOSIS

POWER WINDOW SYSTEM

System Diagram

FRONT WINDOW ANTI-PINCH SYSTEM



System Description

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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)		
Encoder	Encoder pulse signal		
Main power window and door lock/unlock switch	Front power window motor LH UP/ DOWN signal	Power window control	Front power window motor
Power window and door lock/unlock switch RH	Front power window motor RH UP/ DOWN signal	Power window control	
BCM	RAP signal		
Rear power window switch (Crew Cab)	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 DROP GLASS OPERATION (IF EQUIPPED)

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

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

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POWER WINDOW SYSTEM

< FUNCTION DIAGNOSIS >

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 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:

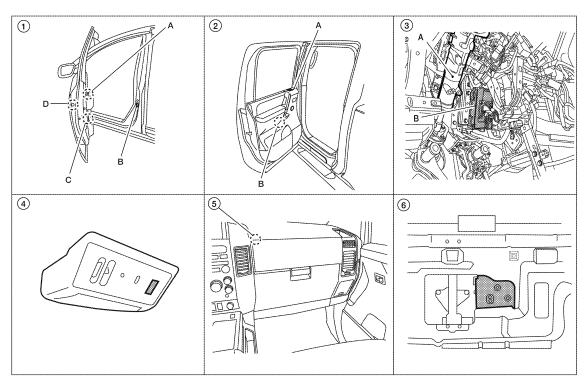
Keyless power window down operation mode can be changed by "PW DOWN SET" mode in "WORK SUP-PORT". Refer to DLK-20, "MULTIREMOTE ENT: CONSULT-III Function (BCM - MULTIREMOTE ENT)".

NOTE:

Use CONSULT-III to change settings. MODE1 (3sec)/MODE2 (OFF)/MODE3 (5sec)

Component Parts Location

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POWER WINDOW SYSTEM

< FUNCTION DIAGNOSIS >

- A. Main power window and door lock/unlock switch D7, D8 (Crew Cab), D15 (King Cab) Power window and door lock/unlock switch RH D105 B. Front door switch LH B8, RH B108 C. Front power window motor LH D9,
- A. Rear power window switch LH D203, RH D303 (Crew Cab) B. Rear power window motor LH D204, RH D304 (Crew Cab)
- A. Steering column (view with instument panel removed) B. BCM M18, M19, M20

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RH D104 D. Front door lock assembly LH (key cylinder switch) D14

Rear power drop glass switch R103 5. Rear power drop glass up relay M154 (Crew Cab) Rear power drop glass down relay M155 (Crew Cab)

Rear power drop glass motor B80 (view with rear finisher removed) (Crew Cab)

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Component Description

(Crew Cab)

POWER WINDOW SYSTEM

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

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DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

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

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APPLICATION ITEM

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

Diagnosis mode	Function Description
WORK SUPPORT	Changes the setting for each system function.
SELF-DIAG RESULTS	Displays the diagnosis results judged by BCM. Refer to BCS-49, "DTC Index".
CAN DIAG SUPPORT MNTR	Monitors the reception status of CAN communication viewed from BCM.
DATA MONITOR	The BCM input/output signals are displayed.
ACTIVE TEST	The signals used to activate each device are forcibly supplied from BCM.
ECU IDENTIFICATION	The BCM part number is displayed.
CONFIGURATION	 Enables to read and save the vehicle specification. Enables to write the vehicle specification when replacing BCM.

SYSTEM APPLICATION

BCM can perform the following functions for each system.

NOTE:

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

System	Sub system selection item	Diagnosis mode		
System	Sub system selection item	WORK SUPPORT	DATA MONITOR	ACTIVE TEST
BCM	BCM	×		
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	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER		×	×
Air conditioner	AIR CONDITONER		×	
Combination switch	COMB SW		×	
Immobilizer	IMMU		×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
RAP (retained accessory power)	RETAINED PWR	×	×	×
Signal buffer system	SIGNAL BUFFER		×	×
TPMS (tire pressure monitoring system)	AIR PRESSURE MONITOR	×	×	×
Vehicle security system	PANIC ALARM			×

RETAINED PWR

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

INFOID:0000000004137756

Data monitor

DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

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

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< COMPONENT DIAGNOSIS >

COMPONENT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT CHECK (CREW CAB) POWER WINDOW MAIN SWITCH

POWER WINDOW MAIN SWITCH: Description

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- · 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

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Main Power Window And Door Lock/Unlock Switch

${f 1}$. 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? <u>Is the inspection result normal?</u>

YES >> Main power window and door lock/unlock switch power supply and ground circuit are OK.

NO >> Refer to PWC-12, "POWER WINDOW MAIN SWITCH : Diagnosis Procedure".

POWER WINDOW MAIN SWITCH: Diagnosis Procedure

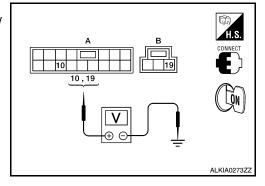
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Main Power Window And Door Lock/Unlock Switch Power Supply Circuit Check

${f 1}$. CHECK POWER SUPPLY CIRCUIT

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

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



Is the measurement value within the specification?

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

$oldsymbol{2}$. CHECK HARNESS CONTINUITY

- 1. Turn ignition switch OFF.
- Disconnect BCM and main power window and door lock/unlock switch.
- 3. Check continuity between BCM connector (A) and main power window and door lock/unlock switch connectors (B and C).

BCM connector	Terminal	Main power window and door lock/unlock switch connector	Terminal	Continuity
M20 (A)	68	D7 (B)	10	Yes
W20 (A)	69	D8 (C)	19	163

A B
68 69 10 10 19 01 1

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

< COMPONENT DIAGNOSIS >

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

Is the inspection result normal?

YES >> GO TO 4

NO >> Repair or replace harness.

3. CHECK GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect main power window and door lock/unlock switch.
- 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?

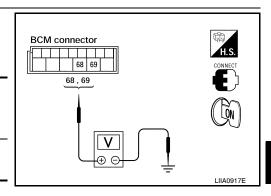
YES >> Replace main power window and door lock/unlock switch. Refer to PWC-133, "Removal and Installation".

NO >> Repair or replace harness.

CHECK BCM OUTPUT SIGNAL

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

(+)		(-)	Voltage (V) (Approx.)	
BCM connector	Terminal	(-)	(
M20	68	Ground	Battery voltage	
IVIZU	69	Giouna	Dattery Voltage	



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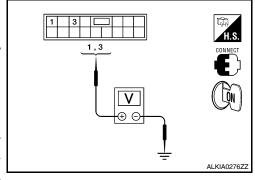
Is the measurement value within the specification?

- >> Check main power window and door lock/unlock switch output signal (rear power window switch YES 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-53, "Removal and Installation".

${f 5}.$ CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH OUTPUT SIGNAL (REAR POW-ER WINDOW SWITCH LH)

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

Terminal						
(+)		(+)		Voltage (V)		
Main power window and door lock/unlock switch connector	Terminal	(–)	condition	(Approx.)		
	1	1	1	1	UP	Battery voltage
D7			Ground	DOWN	0	
D1		Giouna	UP	0		
	3		DOWN	Battery voltage		



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< COMPONENT DIAGNOSIS >

Is the measurement value within the specification?

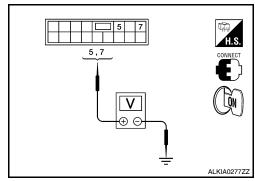
YES >> GO TO 7

NO >> Replace main power window and door lock/unlock switch. Refer to PWC-133, "Removal and Installation".

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

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

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



Is the measurement value within the specification?

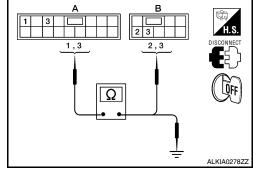
YES >> GO TO 8

NO >> Replace main power window and door lock/unlock switch. Refer to PWC-133, "Removal and Installation".

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

- 1. Turn ignition switch OFF.
- 2. Disconnect rear power window switch LH.
- 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	1	D203	2	Yes
UI	3	D203	3	163



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		Continuity
D7	1	Ground	No
	3		140

Is the inspection result normal?

YES >> GO TO 9

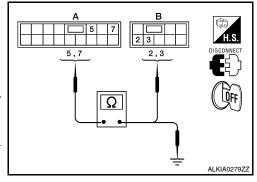
NO >> Repair or replace harness.

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

< COMPONENT DIAGNOSIS >

- 1. Turn ignition switch OFF.
- Disconnect rear power window switch RH.
- 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	5	D303	3	Yes
DI .	7	D303	2	163



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	Our aid	Continuity
D7	5	Ground	No
	7		NO

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-15, "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-133, "Removal and <a href="Installation".

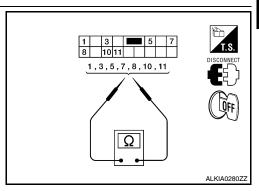
POWER WINDOW MAIN SWITCH: Component Inspection

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

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

Terr	minal	Main power window and door lock/un- lock switch condition		Continuity
10	1	Rear LH	UP	
10	7	Rear RH	OF .	
1	3	Rear LH	NEUTRAL	Yes
5	7	Rear RH	NEOTIVAL	165
10	3	Rear LH	DOWN	
10	5	Rear RH	DOWN	

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



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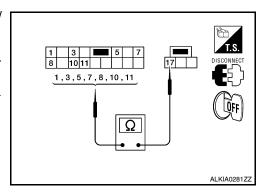
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< COMPONENT DIAGNOSIS >

Tern	ninal	Main power window and door lock/unlock switch condition		•		Continuity
3		Rear LH	UP			
5		Rear RH	J.			
1		Rear LH				
3	17	Rear RH	NEUTRAL	No		
5] ''					
7						
1		Rear LH	DOWN			
7		Rear RH	2000			

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

Terr	minal	Main power window and door lock/unlock switch condition		The state of the s		Continuity
3		Rear LH	UP			
5		Rear RH	OI OI			
1		Rear LH				
3	17	Rear RH	NEUTRAL	Yes		
5	17		NEOTIVE			
7		real rei				
1		Rear LH	DOWN	1		
7		Rear RH	DOWN			



Is the inspection result normal?

YES >> Main power window and door lock/unlock switch is OK.

>> Replace main power window and door lock/unlock switch. Refer to PWC-133, "Removal and Installation".

FRONT POWER WINDOW SWITCH

FRONT POWER WINDOW SWITCH: Description

INFOID:0000000003788221

· BCM supplies power.

NO

• 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:0000000003788222

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-16, "FRONT POWER WINDOW SWITCH: Diagnosis Procedure".

FRONT POWER WINDOW SWITCH: Diagnosis Procedure

INFOID:0000000003788223

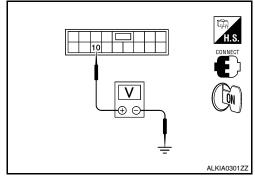
Power Window And Door Lock/Unlock Switch RH Power Supply Circuit Check

1. CHECK POWER SUPPLY CIRCUIT

< COMPONENT DIAGNOSIS >

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

Terr			
(+)		Voltage (V)	
Power window and door lock/ unlock Terminal switch RH connector		(–)	(Approx.)
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 (A) and power window and door lock/unlock switch RH connector (B).

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 (A) and ground.

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

DISCONNECT OFF

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.

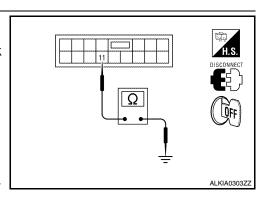
Power window and door lock/unlock switch RH	Terminal	Ground	Continuity
D105	11		Yes

Is the inspection result normal?

YES >> Replace power window and door lock/unlock switch RH. Refer to PWC-134, "Removal and Installation".

NO >> Repair or replace harness.

CHECK BCM OUTPUT SIGNAL



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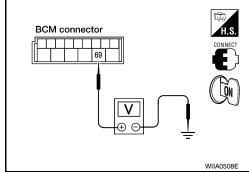
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< COMPONENT DIAGNOSIS >

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

(+)		(-)	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-134, "Removal and Installation".

NO >> Replace BCM. Refer to BCS-53, "Removal and Installation".

REAR POWER WINDOW SWITCH

REAR POWER WINDOW SWITCH: Description

'

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:0000000003788225

INFOID:0000000003788224

Rear Power Window Switch

CHECK REAR POWER WINDOW MOTOR FUNCTION

Does rear power window motor operate with rear power window switch operation? <u>Is the inspection result normal?</u>

YES >> Rear power window switch power supply and ground circuit are OK.

NO >> Refer to PWC-18, "REAR POWER WINDOW SWITCH: Diagnosis Procedure".

REAR POWER WINDOW SWITCH: Diagnosis Procedure

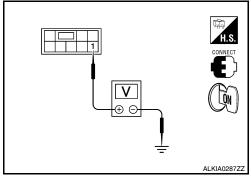
INFOID:0000000003788226

Rear Power Window Switch Power Supply Circuit Check

1. CHECK POWER SUPPLY CIRCUIT

- 1. Turn ignition switch ON.
- Check voltage between rear power window switch connector and ground.

	Terminal					
	(+)			Condition	Voltage (V)	
•	ver window connector	Terminal	(–)		(Approx.)	
LH	D203	1	Ground	Ignition switch	Battery voltage	
RH	D303	1	Giodila	ON	Dattery voltage	



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)

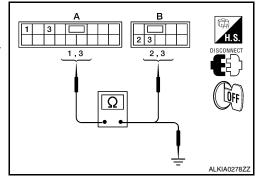
NO >> GO TO 4

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

< COMPONENT DIAGNOSIS >

- 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 (A) and rear power window switch LH connector (B).

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
DI (A)	3	D203 (B)	3	103



Check continuity between main power window and door lock/unlock switch connector (A) and ground.

Main power window and door lock/un- lock switch connector	Terminal	0 1	Continuity
D7 (A)	1 3	Ground	No

Is the inspection result normal?

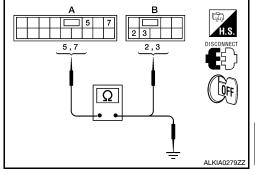
YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".

NO >> Repair or replace harness.

${f 3.}$ CHECK HARNESS CONTINUITY (REAR POWER WINDOW SWITCH RH)

- 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 (A) and rear power window switch RH connector (B).

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
DI (A)	7	D303 (B)	2	163



Check continuity between main power window and door lock/unlock switch connector (A) and ground.

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

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".

NO >> Repair or replace harness.

4. CHECK HARNESS CONTINUITY

Turn ignition switch OFF.

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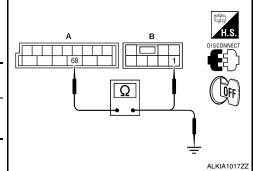
< COMPONENT DIAGNOSIS >

- 2. Disconnect BCM and rear power window switch.
- 3. Check continuity between BCM connector (A) and rear power window switch connector (B).

BCM connector	Terminal	Rear power window switch connector		Terminal	Continuity
M20 (A)	68	LH	D203 (B)	1	Yes
WZO (A)	00	RH	D303 (B)	'	103

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

BCM connector	nnector Terminal		Continuity
M20 (A)	68	Ground	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-20, "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-135, "Removal and Installation - Rear Door Switch.

REAR POWER WINDOW SWITCH: Component Inspection

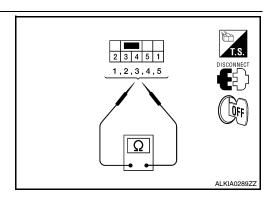
INFOID:0000000003788227

COMPONENT INSPECTION

1. CHECK REAR POWER WINDOW SWITCH

Check rear power window switch.

Terr	minal	Power window switch condition	Continuity
1	5	UP	
3	4	OI	
3	4	NEUTRAL	Yes
5	2	NEOTIVAL	163
1	4	DOWN	
5	2	BOWN	



Is the inspection result normal?

YES >> Rear power window switch is OK.

NO >> Replace rear power window switch. Refer to PWC-135, "Removal and Installation - Rear Door Switch".

< COMPONENT DIAGNOSIS >

POWER SUPPLY AND GROUND CIRCUIT CHECK (KING CAB) POWER WINDOW MAIN SWITCH

POWER WINDOW MAIN SWITCH: Description

- INFOID:0000000003788228
- 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

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Main Power Window And Door Lock/Unlock Switch

${f 1}$. 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?

>> Main power window and door lock/unlock switch power supply and ground circuit are OK. YES

NO >> Refer to PWC-21, "POWER WINDOW MAIN SWITCH: Diagnosis Procedure".

POWER WINDOW MAIN SWITCH: Diagnosis Procedure

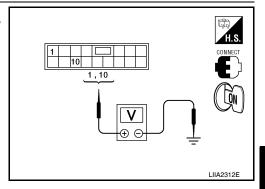
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Main Power Window And Door Lock/Unlock Switch Power Supply Circuit Check

1. CHECK POWER SUPPLY CIRCUIT

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

(+)			Voltage (V)
Main power window and door lock/unlock switch connector		(–)	(Approx.)
D15	1	Ground	Battery voltage
Б13	10	Ground	Dattery Voltage



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Is the measurement value within the specification?

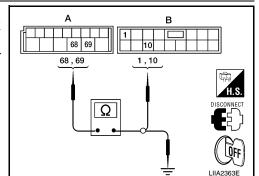
YES >> GO TO 3 NO >> GO TO 2

2. CHECK HARNESS CONTINUITY

- 1. Turn ignition switch OFF.
- 2. Disconnect BCM and main power window and door lock/unlock
- Check continuity between BCM connector (A) and main power window and door lock/unlock switch connector (B).

BCM connector	Terminal	Main power window and door lock/unlock switch connector	Terminal	Continuity
M20 (A)	68	D15 (B)	10	Yes
IVIZO (A)	69	D 13 (D)	1	103

Check continuity between BCM connector (A) and ground.



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< COMPONENT DIAGNOSIS >

BCM connector	Terminal		Continuity	
M20 (A)	68	Ground	No	
W20 (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 main power window and door lock/unlock switch.
- 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
D15	15		Yes

Is the inspection result normal?

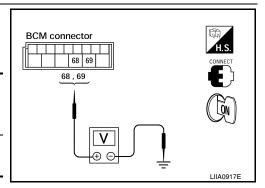
YES >> Replace main power window and door lock/unlock switch. Refer to PWC-133, "Removal and Installation".

NO >> Repair or replace harness.

f 4 . CHECK BCM OUTPUT SIGNAL

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

) (all a a a () ()			
(+)		(–)	Voltage (V) (Approx.)	
BCM connector	Terminal	(-)	1	
M20	68	Ground	Battery voltage	
IVIZU	69	Giodila	Dattery Voltage	



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Is the measurement value within the specification?

YES >> GO TO 5

NO >> Replace BCM. Refer to BCS-53, "Removal and Installation".

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

Check main power window and door lock/unlock switch.

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-133, "Removal and Installation".

FRONT POWER WINDOW SWITCH

FRONT POWER WINDOW SWITCH: Description

· 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

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?

< COMPONENT DIAGNOSIS >

Is the inspection result normal?

>> Power window and door lock/unlock switch RH power supply and ground circuit are OK.

NO >> Refer to PWC-23, "FRONT POWER WINDOW SWITCH: Diagnosis Procedure".

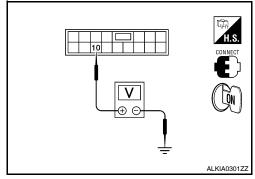
FRONT POWER WINDOW SWITCH: Diagnosis Procedure

Power Window And Door Lock/Unlock Switch RH Power Supply Circuit Check

1. CHECK POWER SUPPLY CIRCUIT

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

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



Is the measurement value within the specification?

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

2. CHECK HARNESS CONTINUITY

Turn ignition switch OFF.

- Disconnect BCM and power window and door lock/unlock switch
- Check continuity between BCM connector (A) and power window and door lock/unlock switch RH connector (B).

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

Check continuity between BCM connector (A) and ground.

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

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Is the inspection result normal?

YES >> GO TO 4

NO >> Repair or replace harness.

3. CHECK GROUND CIRCUIT

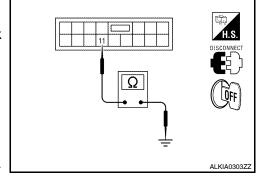
- Turn ignition switch OFF.
- Disconnect power window and door lock/unlock switch RH.
- Check continuity between power window and door lock/unlock switch RH connector and ground.

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-134, "Removal and Installation".

NO >> Repair or replace harness.



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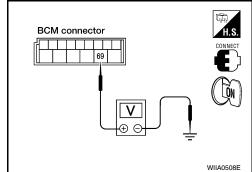
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< COMPONENT DIAGNOSIS >

4. CHECK BCM OUTPUT SIGNAL

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

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



Is the measurement value within the specification?

>> Replace power window and door lock/unlock switch RH. Refer to <u>PWC-134</u>, "<u>Removal and Installation</u>".

>> Replace BCM. Refer to <u>BCS-53</u>, "<u>Removal and Installation</u>".

NO

< COMPONENT DIAGNOSIS >

POWER WINDOW MOTOR

DRIVER SIDE

DRIVER SIDE: Description

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

DRIVER SIDE: Component Function Check

INFOID:0000000003788235

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.

>> Refer to PWC-25, "DRIVER SIDE: Diagnosis Procedure". NO

DRIVER SIDE : Diagnosis Procedure

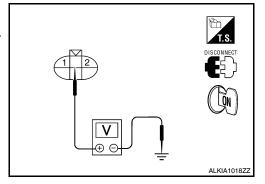
INFOID:0000000003788236

Front Power Window Motor LH Circuit Check

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

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

7	Terminal			
(+)	(+)		Main power win- dow and door lock/	Voltage (V)
Power window motor LH con- nector	Terminal	(–)	unlock switch con- dition	(Approx.)
	2		UP	Battery voltage
D9	2	Ground	DOWN	0
Da	1	Giodila	UP	0
	'		DOWN	Battery voltage



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Is the measurement value within the specification?

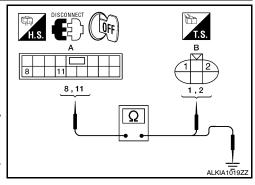
YES >> GO TO 2

NO >> Replace main power window and door lock/unlock switch. Refer to PWC-133, "Removal and Installation".

2. CHECK HARNESS CONTINUITY

- Turn ignition switch OFF.
- 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 (A) and front power window motor connector LH (B).

Main power window and door lock/unlock switch connector	Terminal	Front power win- dow motor LH con- nector	Terminal	Continuity
D7 (A) (Crew Cab)	8	D9 (B)	2	Yes
D15 (A) (King Cab)	11	D9 (B)	1	163



Check continuity between main power window and door lock/unlock switch connector (A) and ground.

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PWC-25

< COMPONENT DIAGNOSIS >

Main power window and door lock/unlock switch connector	Terminal	Ground	Continuity
D7 (A) (Crew Cab) D15 (A) (King Cab	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-26, "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 <u>GW-18</u>, "Removal and Installation".

DRIVER SIDE: Component Inspection

INFOID:0000000003788237

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	
(+)	(-)	Wotor 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-18, "Removal and Installation".

PASSENGER SIDE

PASSENGER SIDE : Description

INFOID:0000000003788238

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:0000000003788239

1. CHECK POWER WINDOW MOTOR CIRCUIT

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-26, "PASSENGER SIDE : Diagnosis Procedure".

PASSENGER SIDE : Diagnosis Procedure

INFOID:0000000003788240

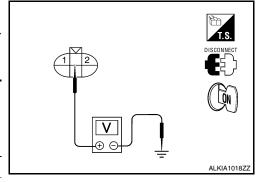
Front Power Window Motor RH Circuit Check

1. CHECK FRONT POWER WINDOW SWITCH RH OUTPUT SIGNAL

< COMPONENT DIAGNOSIS >

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

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



Is the measurement value within the specification?

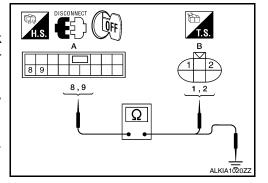
YES >> GO TO 2

NO >> Replace power window and door lock/unlock switch RH. Refer to PWC-134, "Removal and Installation".

$oldsymbol{2}$. CHECK HARNESS CONTINUITY

- 1. Turn ignition switch OFF.
- 2. Disconnect power window and door lock/unlock switch RH.
- Check continuity between power window and door lock/unlock switch RH connector (A) and front power window motor RH connector (B).

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
D103 (A)	9	D104 (B)	1	163



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

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

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-27, "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 <u>GW-18</u>, "Removal and Installation".

PASSENGER SIDE : Component Inspection

COMPONENT INSPECTION

1. CHECK FRONT POWER WINDOW MOTOR RH

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

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< COMPONENT DIAGNOSIS >

Terminal		Motor condition	
(+)	(-)	- Wotor 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 <u>GW-18</u>, "Removal and Installation".

REAR LH

REAR LH: Description

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

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-28, "REAR LH: Diagnosis Procedure"

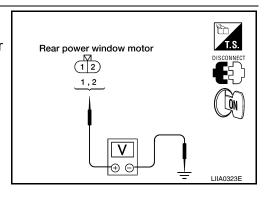
REAR LH: Diagnosis Procedure

Power Window Motor Circuit Check

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



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INFOID:0000000003788243

Is the measurement value within the specification?

YES >> GO TO 2

NO >> Check rear power window switch LH. Refer to PWC-18, "REAR POWER WINDOW SWITCH: Component Function Check".

CHECK HARNESS CONTINUITY

< COMPONENT DIAGNOSIS >

- Turn ignition switch OFF.
- Disconnect rear power window switch LH.
- Check continuity between rear power window switch LH connector (A) and rear power window motor LH connector (B).

Rear power window switch LH connector	Terminal	Rear power window motor LH connector	Terminal	Continuity
D203 (A)	5	D204 (B)	2	Yes
D203 (A)		D204 (B)	1	163

Check continuity between rear power window switch LH connector (A) and ground.

A	B 1,2 1,2	H.S. DISCONNECT T.S.
		ALKIA1036GB

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

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-29, "REAR LH: Component Inspection".

Is the inspection result normal?

>> Check intermittent incident. Refer to GI-38, "Intermittent Incident". YES

>> Replace rear power window motor LH. Refer to GW-22, "Rear Door Glass Regulator Assembly". NO

REAR LH: Component Inspection

INFOID:0000000003788245

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
(+)	(-)	Wotor condition
2	1	DOWN
1	2	UP

Is the inspection result normal?

YES >> Rear power window motor LH is OK.

NO >> Replace rear power window motor LH. Refer to GW-22, "Rear Door Glass Regulator Assembly".

REAR RH

REAR RH: Description

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

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?

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INFOID:0000000003788247

< COMPONENT DIAGNOSIS >

YES >> Rear power window motor RH is OK.

NO >> Refer to PWC-30, "REAR RH: Diagnosis Procedure".

REAR RH: Diagnosis Procedure

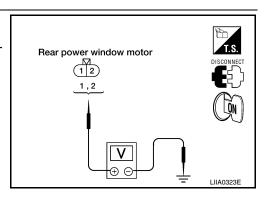
INFOID:0000000003788248

Rear Power Window Motor RH Circuit Check

1. CHECK REAR POWER WINDOW SWITCH RH OUTPUT SIGNAL

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

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



Is the measurement value within the specification?

YES >> GO TO 2

NO >> Check rear power window switch RH. Refer to PWC-18, "REAR POWER WINDOW SWITCH: Component Function Check".

2. CHECK HARNESS CONTINUITY

- 1. Turn ignition switch OFF.
- Disconnect rear power window switch RH.
- 3. Check continuity between rear power window switch RH connector (A) and rear power window motor RH connector (B).

Rear power window switch RH connector	Terminal	Rear power window motor RH connector	Terminal	Continuity
D303 (A)	5	D304 (B)	2	Yes
D303 (A)	4	D304 (B)	1	163

Check continuity between rear power window switch RH connector (A) and ground.

A 4 5 4 , 5	B	H.S.
		DISCONNECT
Ω		T.S.
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Rear power window switch RH connector	Terminal		Continuity
D303 (A)	5	Ground	No
D303 (A)	4		NO

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-31, "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-22, "Rear Door Glass Regulator Assembly".

< COMPONENT DIAGNOSIS >

REAR RH: Component Inspection

INFOID:0000000003788249

COMPONENT INSPECTION

1. CHECK REAR POWER WINDOW MOTOR RH

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

Terr	minal	- Motor condition	
(+)	(–)	Wiotor Condition	
2	1	DOWN	
1	2	UP	

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Is the inspection result normal?

YES >> Rear power window motor RH is OK.

NO >> Replace rear power window motor RH. Refer to <u>GW-22</u>, "Rear <u>Door Glass Regulator Assembly"</u>.

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< COMPONENT DIAGNOSIS >

ENCODER CIRCUIT CHECK FRONT (CREW CAB)

DRIVER SIDE

DRIVER SIDE: Description

INFOID:0000000003788250

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:0000000003788251

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-32, "DRIVER SIDE : Diagnosis Procedure"

DRIVER SIDE: Diagnosis Procedure

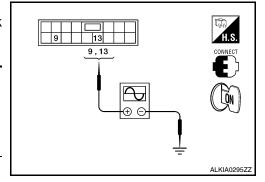
INFOID:0000000003788252

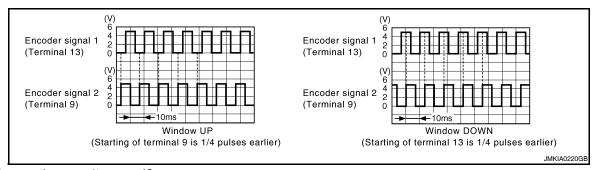
Encoder Circuit Check

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.

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





Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".

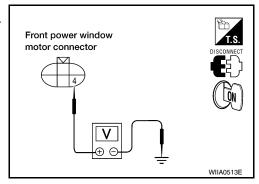
NO >> GO TO 2

2. CHECK FRONT POWER WINDOW MOTOR LH POWER SUPPLY

< COMPONENT DIAGNOSIS >

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

(+)			Voltage (V)
Front power win- dow motor LH con- nector	Terminal	(–)	(Approx.)
D9	4	Ground	10



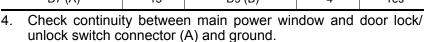
Is the measurement value within the specification?

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

${f 3}.$ CHECK HARNESS CONTINUITY 1

- Turn ignition switch OFF.
- Disconnect main power window and door lock/unlock switch. 2.
- 3. Check continuity between main power window and door lock/ unlock switch connector (A) and front power window motor LH connector (B).

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



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

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Is the inspection result normal?

YES >> Replace main power window and door lock/unlock switch. Refer to PWC-133, "Removal and Installation".

NO >> Repair or replace harness.

4. CHECK GROUND CIRCUIT

- Turn ignition switch OFF.
- 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

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< COMPONENT DIAGNOSIS >

- 1. Disconnect main power window and door lock/unlock switch.
- 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 win- dow motor LH con- nector	Terminal	Continuity
D7	2	D9	6	Yes

Main power window and door lock/unlock switch connector

Is the inspection result normal?

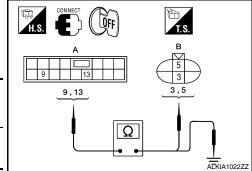
YES >> Replace main power window and door lock/unlock switch. Refer to PWC-133, "Removal and Installation".

NO >> Repair or replace harness.

CHECK HARNESS CONTINUITY 3

- 1. Disconnect main power window and door lock/unlock switch.
- Check continuity between main power window and door lock/ unlock switch connector (A) and front power window motor LH connector (B).

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
<i>DT</i> (A)	13	D9 (B)	3	165



Check continuity between main power window and door lock/ unlock switch connector (A) and ground.

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

Is the inspection result normal?

YES >> Replace front power window motor LH. Refer to GW-18, "Removal and Installation".

NO >> Repair or replace harness.

PASSENGER SIDE

PASSENGER SIDE : Description

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

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-34, "PASSENGER SIDE : Diagnosis Procedure".

PASSENGER SIDE : Diagnosis Procedure

1. CHECK ENCODER SIGNAL

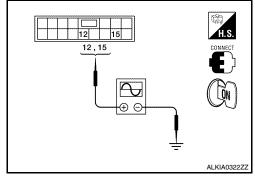
INFOID:0000000003788254

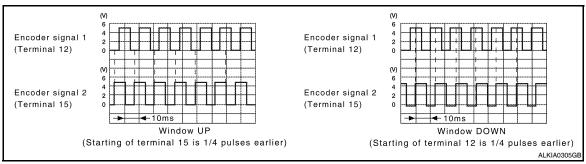
INFOID:0000000003788255

< COMPONENT DIAGNOSIS >

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

-	Signal		
(+)			
Power window and door lock/unlock switch RH connector		(–)	(Reference value)
D105	12	Ground	Refer to following
D103	15	Giouna	signal





Is the inspection result normal?

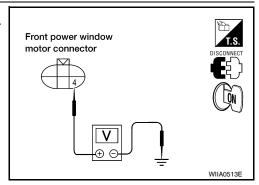
YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".

NO >> GO TO 2

2. CHECK FRONT POWER WINDOW MOTOR RH POWER SUPPLY

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

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



Is the measurement value within the specification?

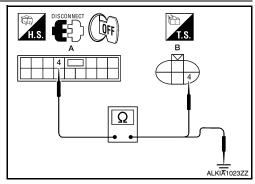
YES >> GO TO 4 NO >> GO TO 3

${f 3}.$ CHECK HARNESS CONTINUITY 1

- Turn ignition switch OFF.
- 2. Disconnect power window and door lock/unlock switch RH.
- Check continuity between power window and door lock/unlock switch RH connector (A) and front power window motor RH connector (B).

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 (A) and ground.



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< COMPONENT DIAGNOSIS >

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-134, "Removal and Installation".

NO >> Repair or replace harness.

f 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

Front power window motor connector DISCONNECT OFF LIIA0929E

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.

 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

Power window and door lock/unlock switch RH connector

Is the inspection result normal?

YES >> Replace power window and door lock/unlock switch RH. Refer to PWC-134, "Removal and Installation".

NO >> Repair or replace harness.

6. CHECK HARNESS CONTINUITY 3

Disconnect power window and door lock/unlock switch RH.

Check continuity between power window and door lock/unlock switch RH connector (A) and front power window motor RH connector (B).

Power window and door lock/unlock switch RH connector	Terminal	Front power window motor RH connector	Terminal	Continuity
D105 (A)	105 (A) D1		3	Yes
D103 (A)	15	D104 (B)	5	163

Check continuity between power window and door lock/unlock switch RH connector (A) and ground.

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

ENCODER CIRCUIT CHECK FRONT (CREW CAB)

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YES >> Replace front power window motor RH. Refer to <u>GW-18</u>, "<u>Removal and Installation</u>".

NO >> Repair or replace harness.

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ENCODER CIRCUIT CHECK FRONT (KING CAB)

DRIVER SIDE

DRIVER SIDE: Description

INFOID:0000000003788256

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:000000003788257

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 <u>PWC-38</u>, "<u>DRIVER SIDE</u>: <u>Diagnosis Procedure</u>"

DRIVER SIDE: Diagnosis Procedure

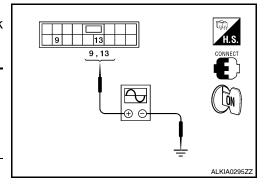
INFOID:0000000003788258

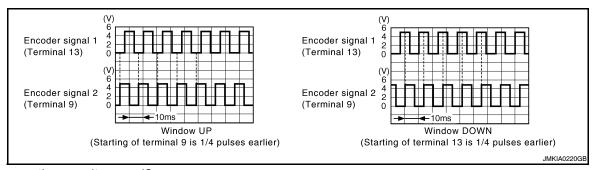
Encoder Circuit Check

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.

_					
-	Ţ				
-	(+)			Signal	
-	Main power window and door lock/unlock switch connector	Terminal	(–)	(Reference value)	
-	D15	9	Ground	Refer to following signal	
	D10	13	Sibulia	Trefer to following signal	





Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".

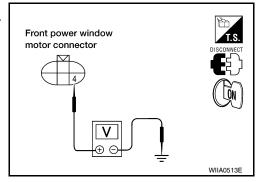
NO >> GO TO 2

2. CHECK FRONT POWER WINDOW MOTOR LH POWER SUPPLY

< COMPONENT DIAGNOSIS >

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

(+)			Voltage (V)	
Front power win- dow motor LH con- nector	Terminal	(–)	(Approx.)	
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 (A) and front power window motor LH connector (B).

Main power window and door lock/unlock switch connector	Terminal	Front power window motor LH connector	Terminal	Continuity
D15 (A)	5	D9 (B)	4	Yes

 Check continuity between main power window and door lock/ unlock switch connector (A) and ground.

Main power window and door lock/unlock switch connector	Terminal	Ground	Continuity
D9 (B)	4		No

DISCONNECT OFF T.S. A B B LIIA2287E

Is the inspection result normal?

YES >> Replace main power window and door lock/unlock switch. Refer to PWC-133, "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	

Front power window motor connector DISCONNECT FINANCE OF THE PROPERTY OF THE

Is the inspection result normal?

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

5. CHECK HARNESS CONTINUITY 2

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< COMPONENT DIAGNOSIS >

- 1. Disconnect main power window and door lock/unlock switch.
- 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 win- dow motor LH con- nector	Terminal	Continuity
D15	14	D9	6	Yes

Main power window and door lock/unlock switch connector The state of the state of

Is the inspection result normal?

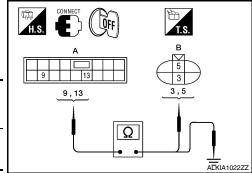
YES >> Replace main power window and door lock/unlock switch. Refer to PWC-133, "Removal and Installation".

NO >> Repair or replace harness.

CHECK HARNESS CONTINUITY 3

- 1. Disconnect main power window and door lock/unlock switch.
- Check continuity between main power window and door lock/ unlock switch connector (A) and front power window motor LH connector (B).

Main power window and door lock/unlock switch connector	Terminal	Front power window motor LH connector	Terminal	Continuity
D15 (A)	9	D9 (B)	5	Yes
D13 (A)	13	D9 (B)	3	165



Check continuity between main power window and door lock/ unlock switch connector (A) and ground.

Main power window and door lock/unlock switch connector	Terminal	_	Continuity
D15 (A)	9	Ground	No
D13 (A)	13		INO

Is the inspection result normal?

YES >> Replace front power window motor LH. Refer to GW-18, "Removal and Installation".

NO >> Repair or replace harness.

PASSENGER SIDE

PASSENGER SIDE: Description

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

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-40, "PASSENGER SIDE : Diagnosis Procedure".

PASSENGER SIDE : Diagnosis Procedure

1. CHECK ENCODER SIGNAL

INFOID:0000000003788260

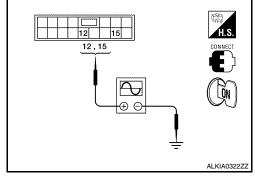
INFOID:0000000003788261

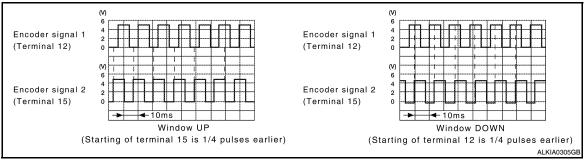
PWC-40

< COMPONENT DIAGNOSIS >

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

-				
(+)			Signal	
Power window and door lock/unlock switch RH connector		(-)	(Reference value)	
D105	12	Ground	Refer to following	
D103	15	Giodila	signal	





Is the inspection result normal?

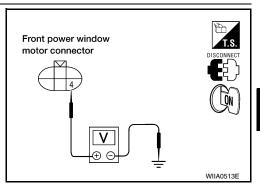
YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".

NO >> GO TO 2

2. CHECK FRONT POWER WINDOW MOTOR RH POWER SUPPLY

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

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



Is the measurement value within the specification?

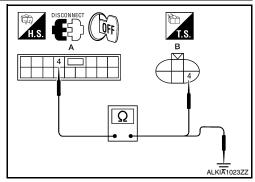
YES >> GO TO 4 NO >> GO TO 3

${f 3}.$ CHECK HARNESS CONTINUITY 1

- Turn ignition switch OFF.
- 2. Disconnect power window and door lock/unlock switch RH.
- Check continuity between power window and door lock/unlock switch RH connector (A) and front power window motor RH connector (B).

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 (A) and ground.



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

Is the inspection result normal?

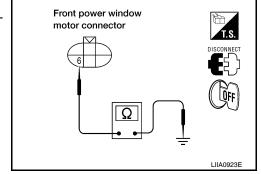
YES >> Replace power window and door lock/unlock switch RH. Refer to PWC-134, "Removal and Installation".

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



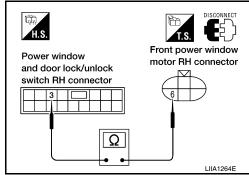
Is the inspection result normal?

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

5. CHECK HARNESS CONTINUITY 2

- 1. Disconnect power window and door lock/unlock switch RH.
- 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-134, "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 (A) and front power window motor RH connector (B).

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
D105 (A)	15	D 104 (B)	5	165

Check continuity between power window and door lock/unlock switch RH connector (A) and ground.

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

< COMPONENT DIAGNOSIS >

Is the inspection result normal?

YES >> Replace front power window motor RH. Refer to <u>GW-18</u>, "<u>Removal and Installation</u>".

NO >> Repair or replace harness.

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Description INFOID:000000003788262

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

Component Function Check

1. CHECK FRONT DOOR SWITCH INPUT SIGNAL

Check ("DOOR SW-DR" and "DOOR SW-AS") in "DATA MONITOR" mode with CONSULT-III. Refer to BCS-24, "RETAINED PWR: CONSULT-III Function (BCM - RETAINED PWR)".

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

Is the inspection result normal?

YES >> Front door switch circuit is OK.

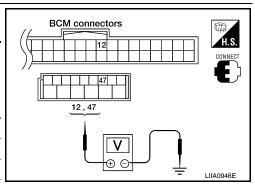
NO >> Refer to PWC-44, "Diagnosis Procedure (Crew Cab)".

Diagnosis Procedure (Crew Cab)

1. CHECK FRONT DOOR SWITCH

Check voltage between BCM connector and ground.

	Terminals				
(+)			Door c	ondition	Voltage (V)
BCM connector	Terminal	(-)			(Approx.)
M18	12	12	Front door	OPEN	0
IVITO	12	Ground	RH	CLOSE	Battery voltage
M19	47	Giodila	Front door	OPEN	0
IVITS	47		LH	CLOSE	Battery voltage



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INFOID:0000000003788264

Is the measurement value within the specification?

YES >> Replace BCM. Refer to BCS-53, "Removal and Installation".

NO >> GO TO 2

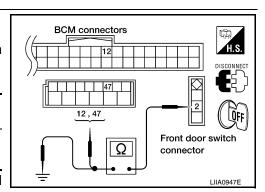
2. CHECK HARNESS CONTINUITY

Turn ignition switch OFF.

- 2. Disconnect BCM and front door switch.
- 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		163

Check continuity between front door switch connector and ground.



< COMPONENT DIAGNOSIS >

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

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Is the inspection result normal?

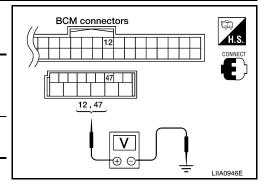
YES >> GO TO 3

NO >> Repair or replace harness.

3. CHECK BCM OUTPUT SIGNAL

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

	V 16 0.0			
(+	+)	(-)	Voltage (V) (Approx.)	
BCM connector	Terminal	(-)		
M18	12	Ground	Battery voltage	
M19	47	Giodila	Dattery Voltage	



Is the measurement value within the specification?

YES >> GO TO 4

NO >> Replace BCM. Refer to BCS-53, "Removal and Installation".

f 4. CHECK FRONT DOOR SWITCH

Check front door switch.

Refer to PWC-46, "Component Inspection (Crew Cab)".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".

NO >> Replace front door switch.

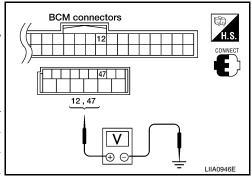
Diagnosis Procedure (King Cab)

INFOID:0000000003788265

1. CHECK FRONT DOOR SWITCH

Check voltage between BCM connector and ground.

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



Is the measurement value within the specification?

YES >> Replace BCM. Refer to BCS-53, "Removal and Installation".

NO >> GO TO 2

2. CHECK FRONT DOOR SWITCH GROUND CIRCUIT

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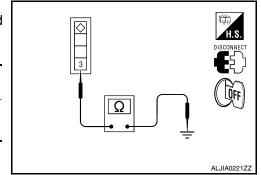
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< COMPONENT DIAGNOSIS >

- Disconnect front door switch.
- 2. Check continuity between front door switch connector and ground.

Front door switch connector	Terminal	Overal	Continuity
B8 (LH)	3	Ground	Yes
B108 (RH)	3		103



Is the inspection result normal?

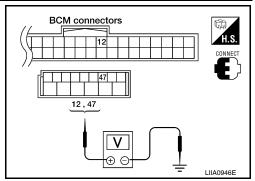
YES >> GO TO 3

NO >> Repair or replace harness.

3. CHECK BCM OUTPUT SIGNAL

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

	Terminal		
(-	+)	Voltage (–) (Approx	
BCM connector	Terminal	(-)	(
M18	12	Ground	Pattory voltage
M19	47	Giodila	Battery voltage



Is the measurement value within the specification?

YES >> GO TO 4

NO >> Replace BCM. Refer to BCS-53, "Removal and Installation".

4. CHECK FRONT DOOR SWITCH

Check front door switch.

Refer to PWC-46, "Component Inspection (King Cab)".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".

NO >> Replace front door switch.

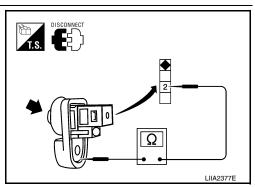
Component Inspection (Crew Cab)

INFOID:0000000003788266

1. CHECK FRONT DOOR SWITCH

- 1. Turn ignition switch OFF.
- 2. Disconnect front door switch.
- 3. Check continuity between front door switch terminals.

Te	erminal	Condition		Continuity
Front	door switch			Continuity
2	Ground part of	Front door switch	Pushed	No
2	door switch	TIOHE GOOF SWILCH	Released	Yes



Is the inspection result normal?

YES >> Inspection End.

NO >> Replace front door switch.

Component Inspection (King Cab)

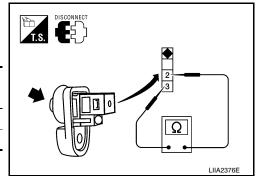
1. CHECK FRONT DOOR SWITCH

INFOID:0000000003788267

< COMPONENT DIAGNOSIS >

- Turn ignition switch OFF.
- 2.
- Disconnect front door switch.
 Check continuity between front door switch terminals.

Terminal		Condition		Continuity
Front do	or switch	Condition		Continuity
2	3	Front door switch	Pushed	No
	3	1 TOTAL GOOD SWILCH	Released	Yes



Is the inspection result normal?

YES

>> Inspection End.
>> Replace front door switch. NO

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FRONT DOOR LOCK ASSEMBLY LH (KEY CYLINDER SWITCH) CHECK (CREW CAB)

< COMPONENT DIAGNOSIS >

FRONT DOOR LOCK ASSEMBLY LH (KEY CYLINDER SWITCH) CHECK (CREW CAB)

Description

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:0000000003788269

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-III. Refer to <u>BCS-16</u>, "DOOR LOCK: CONSULT-III Function (BCM - DOOR LOCK)".

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

Is the inspection result normal?

YES >> Key cylinder switch is OK.

NO >> Refer to PWC-48, "Diagnosis Procedure".

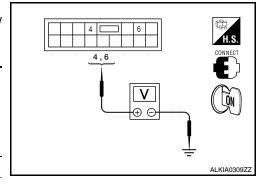
Diagnosis Procedure

INFOID:0000000003788270

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

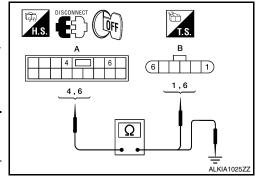
2. CHECK DOOR KEY CYLINDER SIGNAL CIRCUIT

FRONT DOOR LOCK ASSEMBLY LH (KEY CYLINDER SWITCH) CHECK (CREW CAB)

< COMPONENT DIAGNOSIS >

- 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 (A) and front door lock assembly LH (key cylinder switch) connector (B).

Main power window and door lock/unlock switch connector	Terminal	Front door lock as- sembly LH (key cylin- der switch) connector	Terminal	Continuity
D7 (A)	4	D14 (B)	1	Yes
DI (A)	6	D 14 (B)	6	165



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

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

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-49, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".

NO >> Replace front door lock assembly LH (key cylinder switch).

Component Inspection

COMPONENT INSPECTION

1. CHECK DOOR KEY CYLINDER SWITCH

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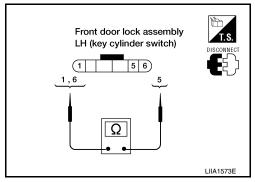
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FRONT DOOR LOCK ASSEMBLY LH (KEY CYLINDER SWITCH) CHECK (CREW CAB)

< COMPONENT DIAGNOSIS >

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

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



Is the inspection result normal?

YES

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

FRONT DOOR LOCK ASSEMBLY LH (KEY CYLINDER SWITCH) CHECK (KING CAB)

< COMPONENT DIAGNOSIS >

FRONT DOOR LOCK ASSEMBLY LH (KEY CYLINDER SWITCH) CHECK (KING CAB)

Description INFOID:0000000003788272

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

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-III. Refer to BCS-16, "DOOR LOCK: CONSULT-III Function (BCM - DOOR LOCK)".

Monitor item	Condition		
KEY CYL LK-SW	Lock	: ON	
RET CTL LR-SW	Neutral / Unlock	: OFF	
KEY CYLLIN CW	Unlock	: ON	
KEY CYL UN-SW	Neutral / Lock	: OFF	

Is the inspection result normal?

YES >> Key cylinder switch is OK.

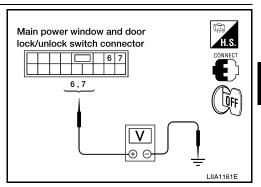
NO >> Refer to PWC-51, "Diagnosis Procedure".

Diagnosis Procedure

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.

To	Terminals				
(+)				Voltage (V)	
Main power window and door lock/unlock switch connector	ck Terminal		Key position	(Approx.)	
	6	6 Ground	Lock	0	
D15			Neutral/Unlock	5	
D10	7	Oround	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

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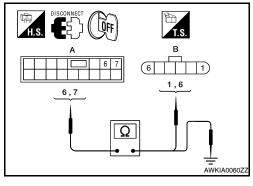
PWC-51

FRONT DOOR LOCK ASSEMBLY LH (KEY CYLINDER SWITCH) CHECK (KING CAB)

< COMPONENT DIAGNOSIS >

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

Main power window and door lock/unlock switch connector	Terminal	Front door lock as- sembly LH (key cylin- der switch) connector	Terminal	Continuity
D15 (A)	6	D14 (D)	1	Yes
D15 (A)	7	D14 (B)	6	168



Check continuity between main power window and door lock/unlock switch connector (A) and ground.

Main power window and door lock/unlock switch connector	onnector		Continuity
D15 (A)	6	Ground	No
D15 (A)	7		NO

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

Front door lock assembly LH (key cylinder switch) connector LIIA1572E

Is the inspection result normal?

YES >> GO TO 4

>> Repair or replace harness. NO

4. CHECK DOOR KEY CYLINDER SWITCH

Check door key cylinder switch.

Refer to PWC-52, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".

NO >> Replace front door lock assembly LH (key cylinder switch).

Component Inspection

INFOID:000000003788275

COMPONENT INSPECTION

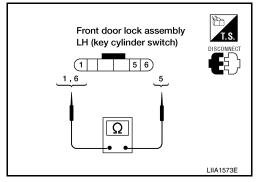
1. CHECK DOOR KEY CYLINDER SWITCH

FRONT DOOR LOCK ASSEMBLY LH (KEY CYLINDER SWITCH) CHECK (KING CAB)

< COMPONENT DIAGNOSIS >

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

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



Is the inspection result normal?

YES

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

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< COMPONENT DIAGNOSIS >

POWER WINDOW SERIAL LINK POWER WINDOW MAIN SWITCH

POWER WINDOW MAIN SWITCH: Description

INFOID:0000000003788276

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:0000000003788277

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-III. Refer to BCS-16, "DOOR LOCK: CONSULT-III Function (BCM - DOOR LOCK)".

Monitor item		Condition	
CDL LOCK SW	LOCK	: ON	
CDL LOCK 3W	UNLOCK	: OFF	
CDL UNLOCK SW	LOCK	: OFF	
GDL UNLOCK 3VV	UNLOCK	: ON	

Is the inspection result normal?

YES >> Power window serial link is OK.

NO >> Refer to PWC-54, "POWER WINDOW MAIN SWITCH: Diagnosis Procedure".

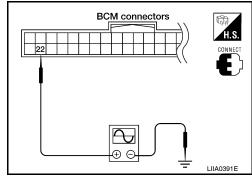
POWER WINDOW MAIN SWITCH: Diagnosis Procedure

INFOID:0000000003788278

Power Window Serial Link Check

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

- 1. Remove ignition key and close front door LH and RH.
- 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".



< COMPONENT DIAGNOSIS >

	Terminal		
(+)		(-)	Signal (Reference value)
BCM connector	Terminal	(-)	,
M18	22	Ground	(V) 15 10 5 0 10 ms PIIA1297E

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.

- Disconnect BCM and main power window and door lock/unlock switch.
- Check continuity between BCM connector (A) and main power window and door lock/unlock switch connector (B) (Crew Cab) or (C) (King Cab).

BCM connector	Terminal	Main power window and door lock/unlock switch connector	Terminal	Continuity
Μ18 (Δ)	22	D7 (B)	14	Yes
M18 (A) 22		D15 (C)	12	103

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

BCM connector	Terminal	Ground	Continuity
M18 (A)	22	Ground	No

Is the inspection result normal?

YES >> Replace main power window and door lock/unlock switch. Refer to PWC-133, "Removal and Installation".

NO >> Repair or replace harness.

FRONT POWER WINDOW SWITCH

FRONT POWER WINDOW SWITCH: Description

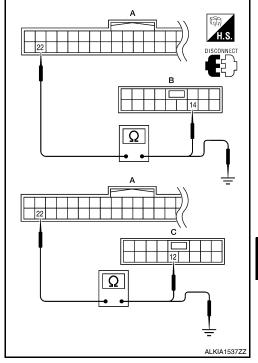
Main power window and door lock/unlock switch, power window and door lock/unlock switch RH and BCM transmit and receive the signal by power window serial link.

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



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< COMPONENT DIAGNOSIS >

FRONT POWER WINDOW SWITCH: Component Function Check

INFOID:0000000003788280

${f 1}.$ 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-III. Refer to BCS-16, "DOOR LOCK: CONSULT-III Function (BCM - DOOR LOCK)".

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

Is the inspection result normal?

YES >> Power window serial link is OK.

NO >> Refer to PWC-56, "FRONT POWER WINDOW SWITCH: Diagnosis Procedure".

FRONT POWER WINDOW SWITCH: Diagnosis Procedure

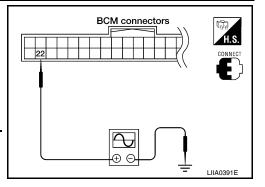
INFOID:0000000003788281

Power Window Serial Link Check

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

- 1. Remove ignition key, and close the front door LH and RH.
- 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	0: 1	
(+)		(-)	Signal (Reference value)
BCM connector	Terminal	(-)	(2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
M18	22	Ground	(V) 15 10 5 0 10 ms



Is the inspection result normal?

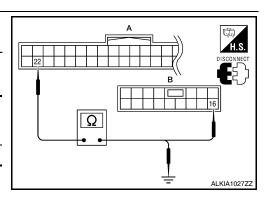
YES >> Power window serial link is OK.

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 (A) and power window and door lock/unlock switch RH connector (B).

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



< COMPONENT DIAGNOSIS >

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

BCM connector	Terminal	Ground	Continuity
M18 (A)	22	Glound	No

Is the inspection result normal?

YES >> Replace main power window and door lock/unlock switch. Refer to PWC-133, "Removal and Installation".

NO \Rightarrow Repair or replace harness.

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POWER WINDOW LOCK SWITCH

< COMPONENT DIAGNOSIS >

POWER WINDOW LOCK SWITCH

Description INFOID:000000003788282

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:0000000003788283

1. CHECK POWER WINDOW LOCK SIGNAL

Exchanges for a normal main power window and door lock/unlock switch, and operation is checked. <u>Does power window lock operate?</u>

- YES >> Replace main power window and door lock/unlock switch. Refer to PWC-133, "Removal and Installation".
- NO >> Check condition of harness and connector.

REAR POWER DROP GLASS CIRCUIT CHECK

< COMPONENT DIAGNOSIS >

REAR POWER DROP GLASS CIRCUIT CHECK

Rear Power Drop Glass Circuit Inspection

1. CHECK REAR POWER DROP GLASS SWITCH OPERATION

- 1. Turn ignition switch OFF.
- 2. Disconnect rear power drop glass switch.
- 3. Check continuity between rear power drop glass switch terminals 1, 3 and 5.

Tern	ninal	Condition	Continuity
3	5	Rear power drop glass switch is pressed DOWN	Yes
	1	Rear power drop glass switch is pressed UP	Yes

Rear power drop glass switch 1,5 3 LIIA1840E

Is the inspection result normal?

YES >> GO TO 2

NO >> Replace rear power drop glass switch. Refer to PWC-135, "Removal and Installation - Power Drop Glass Switch".

$oldsymbol{2}.$ CHECK REAR POWER DROP GLASS SWITCH GROUND CIRCUIT HARNESS CONTINUITY

Check continuity between rear power drop glass switch connector R103 terminal 3 and ground.

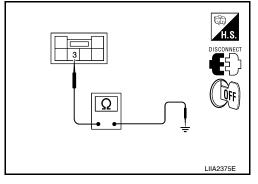
3 - Ground

: Continuity should exist.

Is the inspection result normal?

YES >> GO TO 3

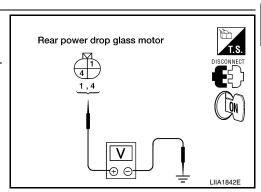
NO >> Repair or replace harness.



3. CHECK REAR POWER DROP GLASS SIGNAL

- 1. Connect rear power drop glass switch.
- 2. Disconnect rear power drop glass motor.
- 3. Turn ignition switch ON.
- 4. Check voltage between rear power drop glass motor connector B80 terminals 1, 4 and ground.

Connector	Term	inals	Condition	Voltage (V)	
Connector	(+) (-)		Condition	(Approx.)	
	1	1		Battery voltage	
B80	'	Ground	Down	0	
Воо	4	Oround	Up	0	
	7		Down	Battery voltage	



Is the inspection result normal?

YES >> Replace rear power drop glass motor. Refer to <u>GW-13</u>, "<u>Removal and Installation</u>".

NO >> Repair or replace harness.

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REAR POWER DROP GLASS DOWN RELAY CHECK

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REAR POWER DROP GLASS DOWN RELAY CHECK

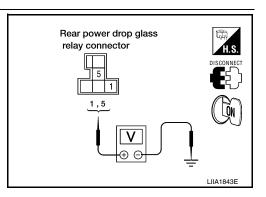
Rear Power Drop Glass Down Relay Check

INFOID:0000000003788285

1. CHECK REAR POWER DROP GLASS UP RELAY POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect rear power drop glass down relay.
- 3. Turn ignition switch ON.
- 4. Check voltage between rear power drop glass down relay connector and ground.

Connector	Term	ninals	Voltage (V)
Connector	(+)	(-)	(Approx.)
M155	1	Ground	Battery voltage
W 155	5	Ground	Dattery Voltage



Is the inspection result normal?

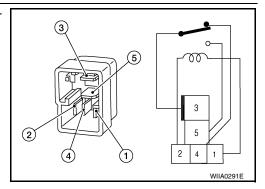
YES >> GO TO 2

NO >> Repair or replace harness.

2. CHECK REAR POWER DROP GLASS DOWN RELAY

Check continuity between rear power drop glass down relay terminals 3 and 4, 3 and 5.

Terr	minal	Condition	Continuity
	4	12V direct current supply between terminals 1 and 2	
3		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 drop glass down relay.

3. CHECK REAR POWER DROP GLASS DOWN RELAY GROUND CIRCUIT

Check continuity between rear power drop glass down relay connector M155 terminal 4 and ground.

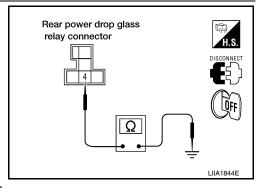
4 - Ground

: Continuity should exist.

Is the inspection result normal?

YES >> GO TO 4

NO >> Repair or replace harness.



4. CHECK REAR POWER DROP GLASS DOWN RELAY CIRCUIT

REAR POWER DROP GLASS DOWN RELAY CHECK

< COMPONENT DIAGNOSIS >

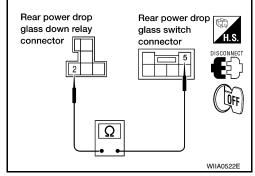
- 1. Disconnect rear power drop glass switch.
- Check continuity between rear power drop glass down relay connector M155 terminal 2 and rear power drop glass switch connector R103 terminal 5.

2 - 5

: Continuity should exist.

Is the inspection result normal?

- YES >> Replace rear power drop glass switch. Refer to PWC-135, "Removal and Installation Power Drop Glass Switch".
- NO >> Repair or replace harness.



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REAR POWER DROP GLASS UP RELAY CHECK

< COMPONENT DIAGNOSIS >

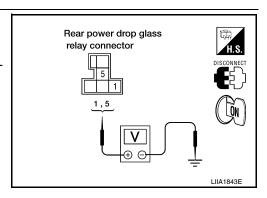
REAR POWER DROP GLASS UP RELAY CHECK

Rear Power Drop Glass Up Relay Check

INFOID:0000000003788286

- 1. CHECK REAR POWER DROP GLASS UP RELAY POWER SUPPLY CIRCUIT
- 1. Turn ignition switch OFF.
- 2. Disconnect rear power drop glass up relay.
- 3. Turn ignition switch ON.
- 4. Check voltage between rear power drop glass up relay connector and ground.

Connector	Term	ninals	Voltage (V)	
Connector	(+)	(-)	(Approx.)	
M154	1	Ground	Battery voltage	
W 134	5	Ground	Dattery Voltage	



Is the inspection result normal?

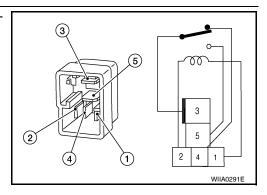
YES >> GO TO 2

NO >> Repair or replace harness.

2. CHECK REAR POWER DROP GLASS UP RELAY

Check continuity between rear power drop glass down relay terminals 3 and 4, 3 and 5.

Terr	minal	Condition	Continuity		
	4	12V direct current supply between terminals 1 and 2	No		
0		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 drop glass up relay.

3. CHECK REAR POWER DROP GLASS UP RELAY GROUND CIRCUIT

Check continuity between rear power drop glass up relay connector M154 terminal 4 and ground.

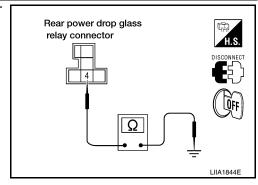
4 - Ground

: Continuity should exist.

Is the inspection result normal?

YES >> GO TO 4

NO >> Repair or replace harness.



4. CHECK REAR POWER DROP GLASS UP RELAY CIRCUIT

REAR POWER DROP GLASS UP RELAY CHECK

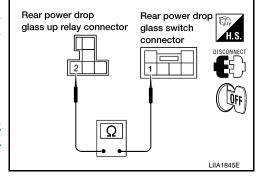
< COMPONENT DIAGNOSIS >

- 1. Disconnect rear power drop glass switch.
- Check continuity between rear power drop glass up relay connector M154 terminal 2 and rear power drop glass switch connector R103 terminal 1.

2 - 1 : Continuity should exist.

Is the inspection result normal?

- YES >> Replace rear power drop glass switch. Refer to PWC-135, "Removal and Installation Power Drop Glass Switch".
- NO >> Repair or replace harness.



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< ECU DIAGNOSIS >

ECU DIAGNOSIS

BCM (BODY CONTROL MODULE)

Reference Value

VALUES ON THE DIAGNOSIS TOOL

AIR COND SW A/C switch OFF OFF AUT LIGHT SYS Outside of the room is dark OFF AUTO LIGHT SW Updide of the room is bright ON AUTO LIGHT SW Lighting switch OFF OFF CDL LOCK SW Lighting switch AUTO ON CDL LOCK SW Door lock/unlock switch does not operate OFF Press door lock/unlock switch to the LOCK side ON DOOR SW-AS Front door RH obesed OFF Prost door Lock Junicoks witch to the UNLOCK side ON DOOR SW-AS Front door RH obesed OFF Front door LH closed OFF Front door LH closed OFF DOOR SW-RL Rear door LH closed OFF Rear door LH closed OFF Rear door RH closed OFF Rear door RH opened ON DOOR SW-RR Rear door RH opened ON Engine stopped OFF Engine stopped OFF Engine stopped OFF Engine stopped OFF Front fog lamp switch OFF OF	Monitor Item	Condition	Value/Status
AC switch ON	AID COND CM	A/C switch OFF	OFF
AUT LIGHT SYS Outside of the room is bright ON AUTO LIGHT SW Lighting switch OFF OFF CDL UNLOCK SW Proof lock/unlock switch to the LOCK side ON DOR SW-AR Front door RH closed OFF Front door RH closed OFF OFF Front door LH dosed OFF OFF Book RW-RL Rear door LH dosed OFF Rear door LH dosed OFF OFF Rear door RH opened ON ON Engine stopped OFF OFF Engine stopped OFF OFF Engine stopped OFF OFF Engine stopped OFF OFF Front	AIR COND SW	A/C switch ON	ON
Outside of the room is bright	ALIT LIGHT OVO	Outside of the room is dark	OFF
Lighting switch AUTO	AUT LIGHT SYS	Outside of the room is bright	ON
Lighting switch AUTO	ALITO LIGHT OW	Lighting switch OFF	OFF
CDL LOCK SW 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 DOOR SW-DR Front door LH closed OFF Front door LH opened ON ON DOOR SW-RL Rear door LH closed OFF Rear door LH opened ON ON BOOR SW-RR Rear door RH opened ON ENGINE RUN Engine stopped OFF Engine running ON ON FR FOG SW Front fog lamp switch OFF OFF Front glamp switch OFF OFF OFF Front washer switch OFF OFF OFF Front wiper switch OFF	AUTO LIGHT SW	Lighting switch AUTO	ON
CDL UNLOCK SW Press door lock/unlock switch does not operate OFF DOOR SW-AS Front door RH closed OFF DOOR SW-AS Front door RH closed OFF Front door LH closed OFF Front door LH closed OFF DOOR SW-DR Front door LH closed OFF DOOR SW-RL Rear door LH closed OFF Rear door LH opened ON ON DOOR SW-RR Rear door RH closed OFF Rear door RH closed OFF OFF Rear door RH opened ON ON Engline stopped OFF OFF Feront Profession switch OFF OFF OFF Front fog lamp switch OFF OFF OFF Front glamp switch OFF OFF OFF Front washer switch OFF OFF OFF Front wiper switch OFF OFF OFF Front wiper switch OFF OFF OFF Front wiper switch HI ON ON FR WIPER INT Front wiper switch OFF OFF	CDL LOCK CW	Door lock/unlock switch does not operate	OFF
CDL UNLOCK SW Press door lock/unlock switch to the UNLOCK side ON DOOR SW-AS Front door RH closed OFF Front door LH opened ON DOOR SW-DR Front door LH opened ON DOOR SW-RL Rear door LH closed OFF Rear door LH opened ON ON BOOR SW-RR Rear door RH closed OFF Rear door RH opened ON ON ENGINE RUN Engine stopped OFF Engine stopped OFF OFF Engine running ON ON FR FOG SW Front fog lamp switch OFF OFF Front washer switch OFF OFF OFF Front washer switch OFF OFF OFF Front washer switch OFF OFF OFF Front wiper switch OFF OFF OFF	CDL LOCK SW	Press door lock/unlock switch to the LOCK side	ON
DOOR SW-AS Front door RH closed OFF DOOR SW-DR Front door RH opened ON DOOR SW-DR Front door LH closed OFF Front door LH opened ON ON DOOR SW-RL Rear door LH closed OFF Rear door LH opened ON ON DOOR SW-RR Rear door RH closed OFF Rear door RH opened ON ON ENGINE RUN Engine stopped OFF Engine stopped OFF OFF Froot fog lamp switch OFF OFF OFF Front fog lamp switch OFF OFF OFF Front washer switch OFF OFF OFF Front washer switch OFF OFF OFF Front wiper switch OFF OFF OFF	CDL LINI OCK CW	Door lock/unlock switch does not operate	OFF
DOOR SW-AS 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 DOOR SW-RR Rear door RH opened ON BOOR SW-RR Rear door RH opened ON BENDED Front for glams switch OFF OFF Front of glams switch OFF OFF Front washer switch OFF OFF Front wiper switch OFF OFF Front wiper switch OFF	CDL UNLOCK SW	Press door lock/unlock switch to the UNLOCK side	ON
Front door RH opened	DOOD CW AC	Front door RH closed	OFF
DOOR SW-DR Front door LH opened ON DOOR SW-RL Rear door LH closed OFF Rear door LH opened ON DOOR SW-RR Rear door RH closed OFF Rear door RH opened ON ENGINE RUN Engine stopped OFF Engine running ON FR FOG SW Front fog lamp switch OFF OFF Front fog lamp switch OFF OFF Front washer switch OFF OFF Front washer switch OFF OFF Front wiper switch INT ON Any position other than front wiper stop position OFF Front wiper stop position ON HAZARD SW When hazard switch is not pressed OFF Ughting switch OFF OFF Lighting switch OFF OFF Lighting s	DOOR SW-AS	Front door RH opened	ON
Front door LH opened		Front door LH closed	OFF
DOOR SW-RL Rear door LH opened ON DOOR SW-RR Rear door RH closed OFF Rear door RH opened ON ENGINE RUN Engine stopped OFF Engine running 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 ON FR WIPER LOW Front wiper switch OFF OFF Front wiper switch OFF OFF OFF Front wiper switch INT ON ON FR WIPER STOP Any position other than front wiper stop position OFF HAZARD SW When hazard switch is not pressed OFF Uighting switch OFF OFF Lighting switch OFF OFF Lighting switch OFF OFF Lighting switch OFF OFF	DOOR SW-DR	Front door LH opened	ON
Rear door LH opened	DOOD OW DI	Rear door LH closed	OFF
DOOR SW-RR Rear door RH opened ON ENGINE RUN Engine stopped OFF Engine running 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 OFF OFF Front wiper switch INT ON Any position other than front wiper stop position OFF Front wiper stop position OFF HAZARD SW When hazard switch is not pressed OFF Uighting switch OFF OFF Lighting switch OFF OFF Lighting switch OFF OFF HEADLAMP SW1 Headlamp switch OFF OFF	DOOR SW-RL	Rear door LH opened	ON
Rear door RH opened		Rear door RH closed	OFF
Engine running	DOOR SW-RR	Rear door RH opened	ON
Engine running	ENONE DUN	Engine stopped	OFF
FR FOG SW 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 FR WIPER HI Front wiper switch OFF OFF Front wiper switch HI ON OFF FR WIPER INT 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 Lighting switch OFF OFF Lighting switch 1st ON HEADLAMP SW1 Headlamp switch OFF OFF	ENGINE RUN	Engine running	ON
Front fog lamp switch ON	ED EOC CW	Front fog lamp switch OFF	OFF
FR WASHER SW Front washer switch ON ON FR WIPER LOW Front wiper switch OFF Front wiper switch LO ON FR WIPER HI Front wiper switch OFF Front wiper switch HI ON FR WIPER INT Front wiper switch OFF Front wiper switch OFF Front wiper switch INT ON Any position other than front wiper stop position Front wiper stop position ON HAZARD SW When hazard switch is not pressed When hazard switch is pressed ON LIGHT SW 1ST Lighting switch OFF Lighting switch OFF Lighting switch OFF OFF HEADLAMP SW1 Headlamp switch OFF OFF	FR FOG SW	Front fog lamp switch ON	ON
Front washer switch ON	ED WACHED OW	Front washer switch OFF	OFF
FR WIPER LOW Front wiper switch LO FR WIPER HI Front wiper switch OFF Front wiper switch HI ON FR WIPER INT Front wiper switch OFF Front wiper switch INT ON Any position other than front wiper stop position Front wiper stop position ON HAZARD SW When hazard switch is not pressed When hazard switch is pressed ON LIGHT SW 1ST Lighting switch OFF Lighting switch OFF HEADLAMP SW1 Headlamp switch OFF OFF OFF	FR WASHER SW	Front washer switch ON	ON
Front wiper switch LO Front wiper switch OFF Front wiper switch HI Front wiper switch HI Front wiper switch HI ON Front wiper switch OFF Front wiper switch INT ON Front wiper switch INT Any position other than front wiper stop position Front wiper stop position ON HAZARD SW When hazard switch is not pressed When hazard switch is pressed ON Lighting switch OFF Lighting switch 1st Headlamp switch OFF OFF	ED WIDED LOW	Front wiper switch OFF	OFF
FR WIPER HI Front wiper switch HI ON FR WIPER INT Front wiper switch OFF Front wiper switch INT ON Any position other than front wiper stop position FR WIPER STOP Any position other than front wiper stop position Front wiper stop position ON When hazard switch is not pressed When hazard switch is pressed ON LIGHT SW 1ST Lighting switch OFF Lighting switch 1st ON Headlamp switch OFF OFF	FR WIPER LOW	Front wiper switch LO	ON
Front wiper switch HI FR WIPER INT Front wiper switch OFF Front wiper switch INT ON Any position other than front wiper stop position FR WIPER STOP Any position other than front wiper stop position ON HAZARD SW When hazard switch is not pressed When hazard switch is pressed ON Lighting switch OFF Lighting switch 1st HEADLAMP SW1 ON OFF	ED WIDED III	Front wiper switch OFF	OFF
FR WIPER INT Front wiper switch INT ON Any position other than front wiper stop position FR WIPER STOP Front wiper stop position ON When hazard switch is not pressed OFF When hazard switch is pressed ON Lighting switch OFF Lighting switch 1st ON Headlamp switch OFF OFF	FR WIPER III	Front wiper switch HI	ON
Front wiper switch INT ON 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 Lighting switch OFF Lighting switch 1st ON Headlamp switch OFF OFF	ED WIDED INT	Front wiper switch OFF	OFF
FR WIPER STOP Front wiper stop position ON When hazard switch is not pressed OFF When hazard switch is pressed ON Lighting switch OFF Lighting switch 1st ON Headlamp switch OFF OFF	FR WIPER INT	Front wiper switch INT	ON
Front wiper stop position HAZARD SW When hazard switch is not pressed When hazard switch is pressed ON Lighting switch OFF Lighting switch 1st HEADLAMP SW1 Front wiper stop position ON OFF OFF OFF OFF	ED WIDED STOD	Any position other than front wiper stop position	OFF
HAZARD SW When hazard switch is pressed ON Lighting switch OFF Lighting switch 1st HEADLAMP SW1 When hazard switch is pressed ON OFF OFF	FR WIPER STOP	Front wiper stop position	ON
When hazard switch is pressed ON Lighting switch OFF OFF Lighting switch 1st ON Headlamp switch OFF OFF	HAZADD SW	When hazard switch is not pressed	OFF
LIGHT SW 1ST Lighting switch 1st ON Headlamp switch OFF OFF	HAZAKU 3W	When hazard switch is pressed	ON
Lighting switch 1st ON Headlamp switch OFF OFF	LICHT SW 1ST	Lighting switch OFF	OFF
HEADLAMP SW1	LIGHT SW 151	Lighting switch 1st	ON
Headlamp switch 1st ON	HEADI AMD CWA	Headlamp switch OFF	OFF
	HEADLAIVIP SWT	Headlamp switch 1st	ON

< ECU DIAGNOSIS >

Monitor Item	Condition	Value/Status
LICADI AMD CWO	Headlamp switch OFF	OFF
HEADLAMP SW2	Headlamp switch 1st	ON
LI DEAM CW	High beam switch OFF	OFF
HI BEAM SW	High beam switch HI	ON
H/L WASH SW	NOTE: The item is indicated, but not monitored	OFF
ICM ON CW	Ignition switch OFF or ACC	OFF
IGN ON SW	Ignition switch ON	ON
IONI OW CAN	Ignition switch OFF or ACC	OFF
IGN SW CAN	Ignition switch ON	ON
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	1 - 7
IZEV ON OW	Key is removed from key cylinder	OFF
KEY ON SW	Key is inserted to key cylinder	ON
VEV/ 500 LOOK	LOCK button of key fob is not pressed	OFF
KEYLESS LOCK	LOCK button of key fob is pressed	ON
KEN EGG LINILOGK	UNLOCK button of key fob is not pressed	OFF
KEYLESS UNLOCK	UNLOCK button of key fob is pressed	ON
OIL PRESS SW	Ignition switch OFF or ACC Engine running	OFF
	Ignition switch ON	ON
DACCING CW	Other than lighting switch PASS	OFF
PASSING SW	Lighting switch PASS	ON
DEAD DEE SW	Rear window defogger switch OFF	OFF
REAR DEF SW	Rear window defogger switch ON	ON
RKE LOCK AND UN-	NOTE:	OFF
LOCK	The item is indicated, but not monitored	ON
TAIL LAMD CW	Lighting switch OFF	OFF
TAIL LAMP SW	Lighting switch 1ST	ON
TUDNI CICNIAL I	Turn signal switch OFF	OFF
TURN SIGNAL L	Turn signal switch LH	ON
TUDNI CIONAL D	Turn signal switch OFF	OFF
TURN SIGNAL R	Turn signal switch RH	ON
VEHICLE SPEED	While driving	Equivalent to speedometer reading

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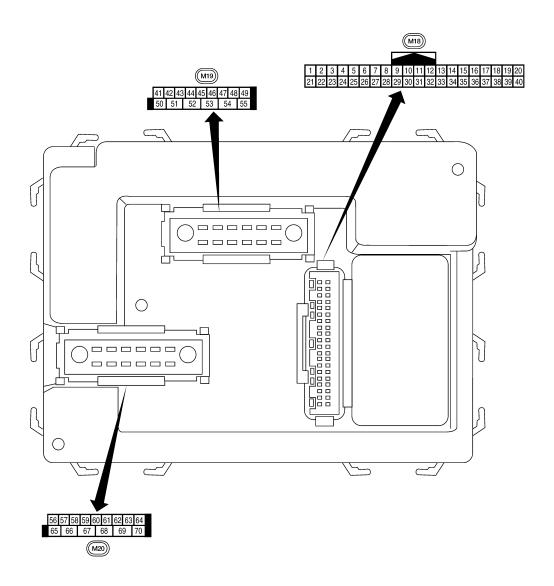
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Terminal Layout



LIIA2443E

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Wire			Signal		Measuring condition	Poforonoo valuo or waveform	
Terminal	Wire color	Signal name	input/ output	Ignition switch	Operation or condition	Reference value or waveform (Approx.)	
1	BR/W	Ignition keyhole illumi-	Output	OFF	Door is locked (SW OFF)	Battery voltage	
ı	DR/W	nation	Output	OFF	Door is unlocked (SW OFF)	0V	
2	SB	Combination switch input 5	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 2 0 	
3	G/Y	Combination switch input 4	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 5ms SKIA5292E	
4	Υ	Combination switch input 3	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 2 0 **-5ms	
5	G/B	Combination switch input 2				(V)	
6	V	Combination switch input 1	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	5ms SKIA5292E	
		Degracindou defeager			Rear window defogger switch ON	0V	
9	Y/B	Rear window defogger switch (Crew Cab)	Input	ON	Rear window defogger switch OFF	5V	
11	0	Ignition switch (ACC or ON)	Input	ACC or ON	Ignition switch ACC or ON	Battery voltage	
12	R/L	Front door switch RH (All) Rear door switch lower RH (King Cab)	Input	OFF	ON (open)	OV	
		Rear door switch up- per RH (King Cab)			OFF (closed)	Battery voltage	
13	GR	Rear door switch RH	Input	OFF	ON (open)	0V	
10	Six	(Crew Cab)	mput	511	OFF (closed)	Battery voltage	
	L/W	Tire pressure warning check connector	Input	OFF		5V	

< ECU DIAGNOSIS >

	Wire		Signal		Measuring condition	Reference value or waveform
Terminal	color	Signal name	input/ output	Ignition switch	Operation or condition	Reference value or waveform (Approx.)
18	Р	Remote keyless entry receiver and optical sensor (ground)	Output	OFF	_	0V
19	V/W	Remote keyless entry receiver (power sup- ply)	Output	OFF	Ignition switch OFF	(V) 6 4 2 0 • • • 50 ms
20		Remote keyless entry receiver (signal)	logus		Stand-by (keyfob buttons released)	(V) 6 4 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
20	G/W		Input OFF	When remote keyless entry receiver receives signal from keyfob (keyfob buttons pressed)	(V) 6 4 2 1 50 ms	
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	G	BUS	_	_	Ignition switch ON or power window timer operates	(V) 15 10 5 0 200 ms
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.
27	W/R	Compressor ON signal	Input	ON	A/C switch OFF A/C switch ON	5V 0V
28	L/R	Front blower monitor	Input	ON	Front blower motor OFF Front blower motor ON	Battery voltage 0V
29	W/B	Hazard switch	Input	OFF	ON OFF	0V 5V
31	P/L	Cargo lamp switch	Input	OFF	Cargo lamp switch ON Cargo lamp switch OFF	0 Battery voltage

< ECU DIAGNOSIS >

	Wire		Signal		Measuring condition	- Reference value or waveform					
Terminal	color	Signal name	input/ output	Ignition switch	Operation or condition	(Approx.)					
32	R/G	Combination switch output 5	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 **-5ms SKIA5291E					
33	R/Y	Combination switch output 4	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 					
34	L	Combination switch output 3	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 **5ms SKIA5291E					
35	O/B	Combination switch output 2									
36	R/W	Combination switch output 1	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 **-5ms SKIA5292E					
07		Kev switch and kev	Key switch and key	Key switch and key	Key switch and key	Key switch and key	Key switch and key	1 1	OFF	Key inserted	Battery voltage
37	B/R	lock solenoid	Input	OFF	Key inserted	0V					
38	W/L	Ignition switch (ON)	Input	ON	_	Battery voltage					
39	L	CAN-H	_	_	_	_					
40	Р	CAN-L	_	_	_	_					
47	SB	Front door switch LH (All) Rear door switch lower LH (King Cab)	Input	OFF	ON (open)	0V					
		Rear door switch up- per LH (King Cab)			OFF (closed)	Battery voltage					
40	DM	Rear door switch LH	Inn: +	OFF	ON (open)	0V					
48	R/Y	(Crew Cab)	Input	OFF	OFF (closed)	Battery voltage					
50	R/Y	Cargo bed lamp con-	Output	OFF	Cargo lamp switch (ON)	0V					
50	17/1	trol	Juipui	011	Cargo lamp switch (OFF)	Battery voltage					

< ECU DIAGNOSIS >

	Wire		Signal		Measuring condition	Reference value or waveform
Terminal	color	Signal name	input/ output	Ignition switch	Operation or condition	(Approx.)
51	G/Y	Trailer turn signal (right)	Output	ON	Turn right ON	(V) 15 10 500 ms
52	G/B	Trailer turn signal (left)	Output	ON	Turn left ON	(V) 15 10 5 0 500 ms
				OFF	30 minutes after ignition	0V
56	R/G	Battery saver output	Output	ON	switch is turned OFF —	Battery voltage
57	Y/R	Battery power supply	Input	OFF	_	Battery voltage
F0	W/D	Outhelman	11	ON	When optical sensor is illuminated	3.1V or more
58	W/R	Optical sensor	Input	ON	When optical sensor is not illuminated	0.6V or less
		Front door lock as-			OFF (neutral)	0V
59	G	sembly LH actuator (unlock)	Output	OFF	ON (unlock)	Battery voltage
60	G/B	Turn signal (left)	Output	ON	Turn left ON	(V) 15 10 5 0 500 ms SKIA3009.
61	G/Y	Turn signal (right)	Output	ON	Turn right ON	(V) 15 10 5 0 500 ms
62	R/W	Step lamp LH and RH	Output	OFF	ON (any door open)	0V
					OFF (all doors closed) Any door ON (open)	Battery voltage 0V
63	L	Interior room/map lamp	Output	OFF	Any door Switch ON (open) OFF (closed)	Battery voltage
65	V	All door lock actuators (lock)	Output	OFF	OFF (neutral) ON (lock)	0V Battery voltage
		Front door lock actua-			OFF (neutral)	0V
66	G/Y	tor RH and rear door lock actuators LH/RH (unlock)	Output	OFF	ON (unlock)	Battery voltage

< ECU DIAGNOSIS >

	Wire		Signal		Measuring condition	Reference value or waveform
Terminal	erminal color Signal name		input/ output	Ignition switch	Operation or condition	(Approx.)
67	В	Ground	Input	ON	_	0V
				_	Ignition switch ON	Battery voltage
		/L Power window power supply (RAP)	Output		Within 45 seconds after ignition switch OFF	Battery voltage
68	W/L				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

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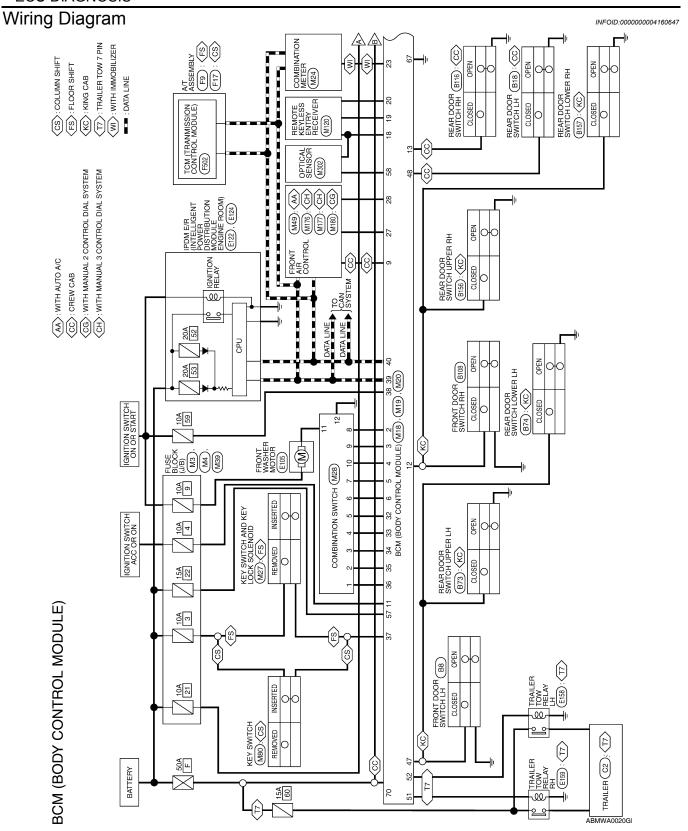
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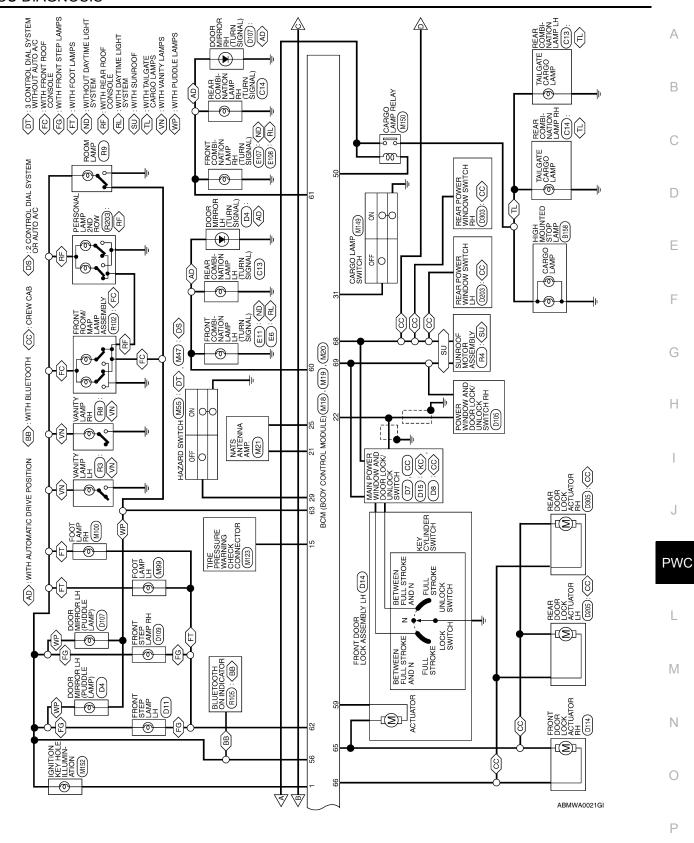
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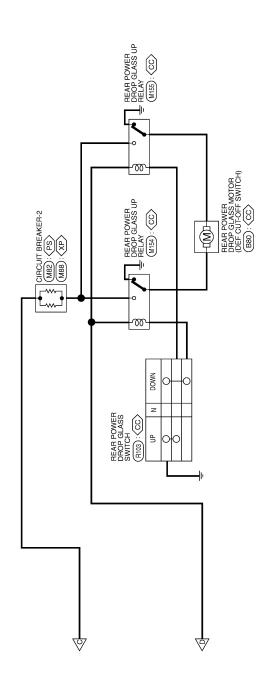
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ABMWA0022GI

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

Signal Name

Color of Wire

Terminal No. 16 17 18 19

Connector Color WHITE

KEYLESS AND AUTO LIGHT SENSOR GND

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KEYLESS TUNER POWER SUPPLY OUTPUT

BCM (BODY CONTROL MODULE) CONNECTORS

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

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IMMOBILIZER ANTENNA SIGNAL (CLOCK)

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KEYLESS TUNER SIGNAL

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ANTI-PINCH SERIAL LINK (RX,TX)

SECURITY INDICATOR OUTPUT

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Terminal No.	Color of Wire	Signal Name
1	BR/W	KEY RING OUTPUT
2	SB	INPUT 5
3	Д/S	INPUT 4
4	٨	INPUT 3
5	G/B	INPUT 2
9	۸	INPUT 1
7	_	1
8	-	1
6	Y/B	REAR DEFOGGER SW
10	1	1
11	0	ACC SW
12	R/L	DOOR SW (AS)
13	GR	DOOR SW (RR)
14	_	I
15	L/W	TPMS MODE TRIGGER SW

lame							W (DR)	W (RL)		P OUTPUT	ASHER IGHT)	ASHER EFT)			
Signal Name	1	I	I	ı	1	1	DOOR SW (DR)	DOOR SW (RL)	1	CARGO LAMP OUTPUT	TRAILER FLASHER OUTPUT (RIGHT)	TRAILER FLASHER OUTPUT (LEFT)	1	1	
Color of Wire	1	ı	ı	ı	ı	1	SB	R/Υ	1	К/Y	G/Y	G/B	ı	ı	
erminal No.	41	42	43	44	45	46	47	48	49	20	51	52	53	54	

		_			_	_	_	_	_	_			_	_		_
1	IMMOBILIZER ANTENNA SIGNAL (RX, TX)	-	AIRCON SW	BLOWER FAN SW	HAZARD SW	1	CARGO LAMP SW	OUTPUT 5	OUTPUT 4	OUTPUT 3	OUTPUT 2	OUTPUT 1	KEY SW	IGN SW	CAN-H	CAN-L
_	BR	_	W/R	ΗЛ	M/B	_	D/L	R/G	R/Υ	_	O/B	B/W	B/R	M/L	_	Д
24	25	56	27	28	29	30	31	32	33	34	35	36	37	38	39	40

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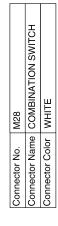
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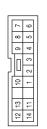
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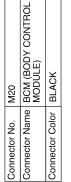
PWC-75







Color of Signal Name															
No. Color of		INPUT 1	INPUT 2	INPUT 3	INPUT 4	INPUT 5	OUTPUT 1	OUTPUT 2	OUTPUT 5	OUTPUT 4	OUTPUT 3	WASHER MOTOR	GND	_	ı
1	Color of Wire	R/W	O/B	٦	R/Υ	R/G	^	G/B	SB	G/Y	Υ	N/N	В	_	-
Temilian	Terminal No.	-	2	ဇ	4	5	9	7	8	6	10	11	12	13	14







Signal Name	BATTERY SAVER OUTPUT	BAT (FUSE)	AUTO LIGHT SENSOR INPUT 2	DOOR UNLOCK OUTPUT (DR)	FLASHER OUTPUT (LEFT)	FLASHER OUTPUT (RIGHT)	STEP LAMP OUTPUT	ROOM LAMP	1	DOOR LOCK OUTPUT (ALL)	DOOR UNLOCK OUTPUT (OTHER)	GND (POWER)	POWER WINDOW POWER SUPPLY (RAP	POWER WINDOW POWER SUPPLY (BAT)	BAT (F/L)
Color of Wire	R/G	Y/R	W/R	ß	G/B	G/Y	R/W	L	_	۸	G/Y	В	M/L	W/R	W/B
Terminal No.	56	57	58	59	09	61	62	63	64	99	99	29	89	69	70

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POWER WINDOW MAIN SWITCH

Reference Value (Crew Cab)

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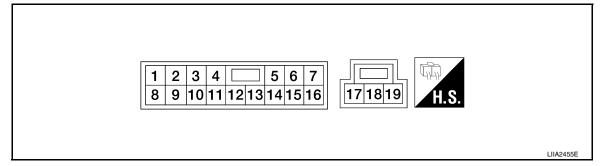
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TERMINAL LAYOUT



PHYSICAL VALUES

MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH

Termina (Wire o		Description		Condition	Voltage [V]
+	_	Signal name	Input/ Output	Condition	(Approx.)
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.	(V) 6 4 2 0 10 ms

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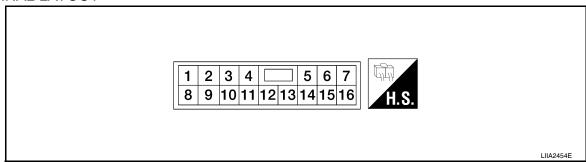
< ECU DIAGNOSIS >

Termina (Wire o		Description		Condition	Voltage [V]
+	_	Signal name	Input/ Output	Condition	(Approx.)
				IGN SW ON	Battery voltage
10 (W/L)	Ground	RAP signal	Input	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.	(V) 6 4 2 0 10 ms
14 (LG/W)	Ground	Power window serial link	Input/ Output	IGN SW ON or power window timer operating.	(V) 15 10 5 0 10 ms
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

Reference Value (King Cab)

INFOID:0000000003788292

TERMINAL LAYOUT



PHYSICAL VALUES

MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH

< ECU DIAGNOSIS >

	nal No. color)	Description		Condition	Voltage [V]
+	_	Signal name	Input/ Output	Condition	(Approx.)
1 (W/R)	Ground	Battery power supply	Input	_	Battery voltage
5 (BR)	Ground	Encoder power supply	Output	When ignition switch ON or power window timer operates	10
6 (L)	Ground	Door key cylinder switch LH LOCK signal	Input	Key position (Neutral → Locked)	5 → 0
7 (R)	Ground	Door key cylinder switch LH UNLOCK signal	Input	Key position (Neutral → Unlocked)	5 → 0
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)	3	Encoder pulse signal 2	Input	When power window motor operates.	(V) 6 4 2 0 10 ms JMKIA0070GB
				IGN SW ON	Battery voltage
10	Ground	RAP signal	Input	Within 45 second after ignition switch is turned to OFF.	Battery voltage
(W/L)	Ordana	To a Signal	mpac	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
12 (LG/W)	Ground	Power window serial link	Input/ Output	IGN SW ON or power window timer operating.	(V) 15 10 5 0 10 ms JPMIA0013GB
13 (G/Y)	3	Encoder pulse signal 1	Input	When power window motor operates.	(V) 6 4 2 0 10 ms JMKIA0070GB
14 (W/B)	Ground	Encoder ground	_	_	0
15 (B)	Ground	Ground	_	_	0

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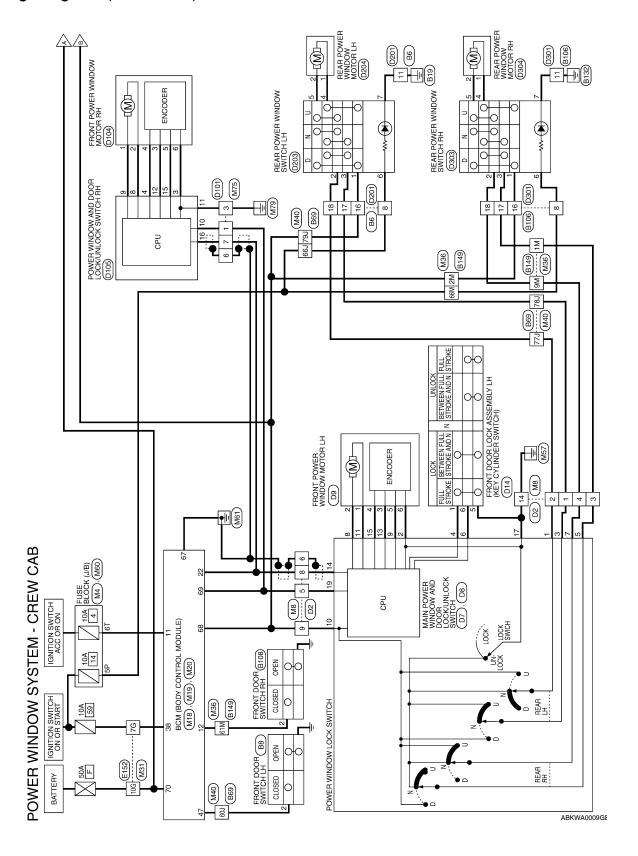
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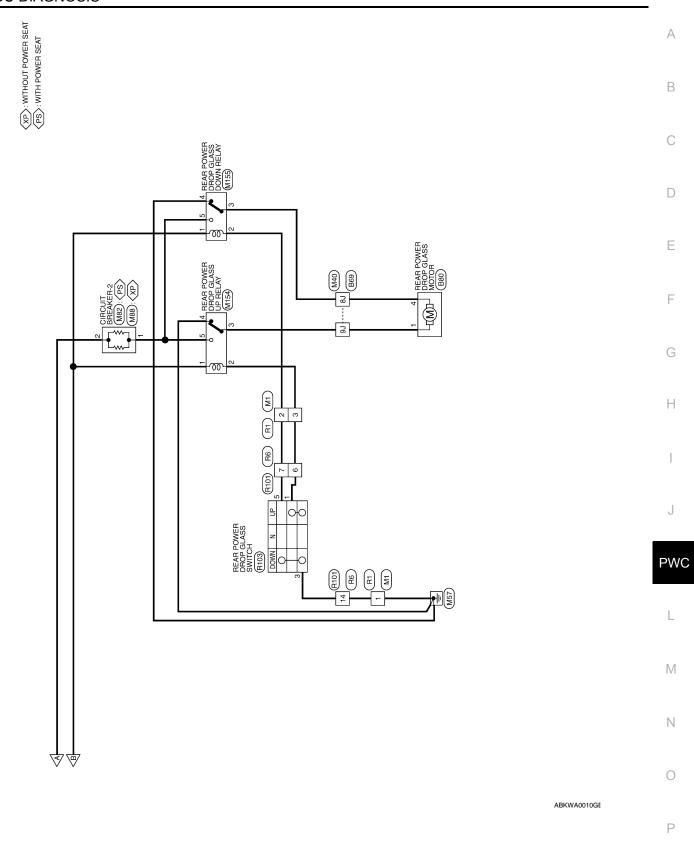
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PWC-79

Wiring Diagram (Crew Cab)

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POWER WINDOW SYSTEM CONNECTORS - CREW CAB

M1	IIRE TO WIRE	/HITE
Connector No.	Connector Name WIRE TO WIRE	Connector Color WHITE

				I	-	8	1
	Щ				2	6	1
	₩				3	유	1
	WIRE TO WIRE		'	۱	П	11	
	۲	ш	١.,	إ		12	1
	끭	ΙĒ			4	13	1
Ξ	₹	WHITE			5	16 15 14 13 12 11	
_	_	_			9	15	
	m.	<u>ō</u>			7	16	
tor No.	tor Name	tor Color	'				

4 4 4 3 2 1 1	2	Signal Name
7 6 5 4	± 2 2 2 2	Color of Wire
橿	H.S.	Terminal No.

Signal Name	_	_	ı
Color of Wire	В	M/I	დ
Terminal No. Wire	-	2	3

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



		WIRE TO WIRE	WHITE	4	Signal Name	ı	I	ı	ı	I	I	ı	1	1	
onnector No onnector No onnector No onnector No onnector Co onnector Co onnector Co onnector No onnect		-	-	6 5 14	Color of Wire	R/B	R/Υ	Г	Я	W/R	SHIELD	g	M/L	В	
	Connector No.	Connector Na	Connector Co	E.S.H	Terminal No.	-	2	8	4	2	9	80	6	14	

Signal Name	1	-	ı	Ī	Î	I	Ī	ı	-	
Color of Wire	B/B	R/Υ	_	Ж	W/R	SHIELD	В	M/L	В	
Terminal No.	-	2	8	4	2	9	8	6	14	

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

Connector Name BCM (BODY CONTROL MODULE)

Connector No. M19

Connector No. M18

Connector Color WHITE







Terminal No. Wire	Color of Wire	Signal Name
29	В	GND (POWER)
89	7/M	POWER WINDOW POWER SUPPLY (RAP)
69	M/R	POWER WINDOW POWER SUPPLY (BAT)
70	M/B	BATT (F/L)

DOOR SW (DR)

SB

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Signal Name

Color of Wire

Terminal No.

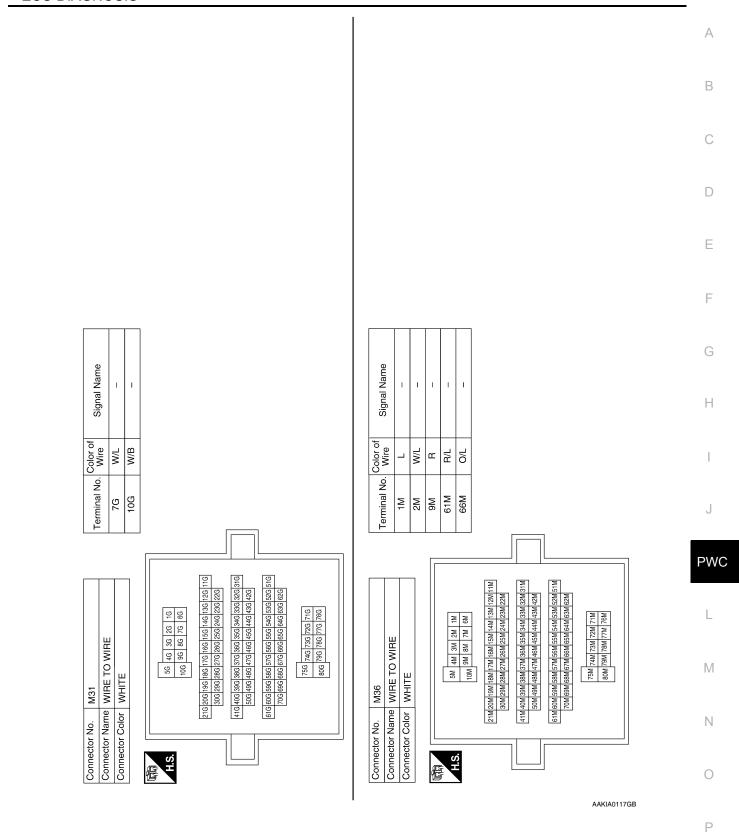
Connector Name		BCM (BODY CONTROL MODULE)
Connector Color	olor WHITE	ITE
E		
H.S.	L	
1 2 3 4 5 21 22 23 24 25	6 7 8 26 27 28	9 10 11 12 13 14 15 16 17 18 19 20 29 30 31 32 33 34 35 36 37 38 39 40
Terminal No.	Color of Wire	Signal Name
11	0	ACC SW
12	R/L	DOOR SW (AS)
22	G	ANTI-PINCH SERIAL LINK (RX, TX)

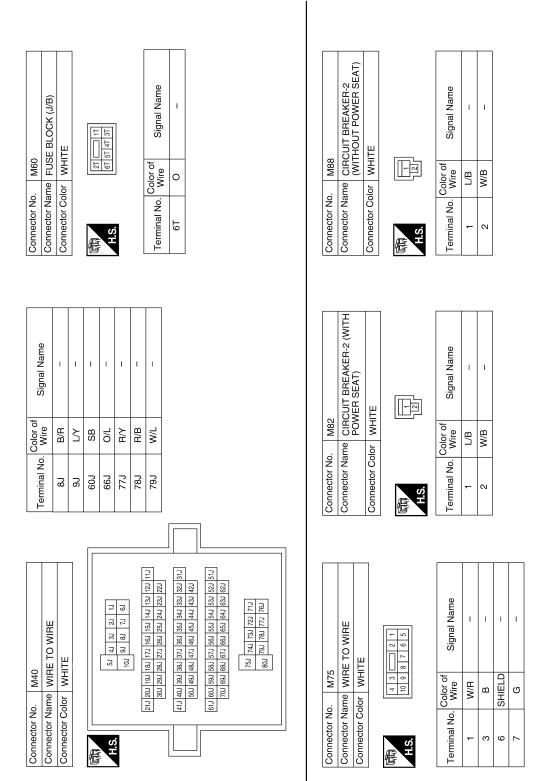
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IGN SW

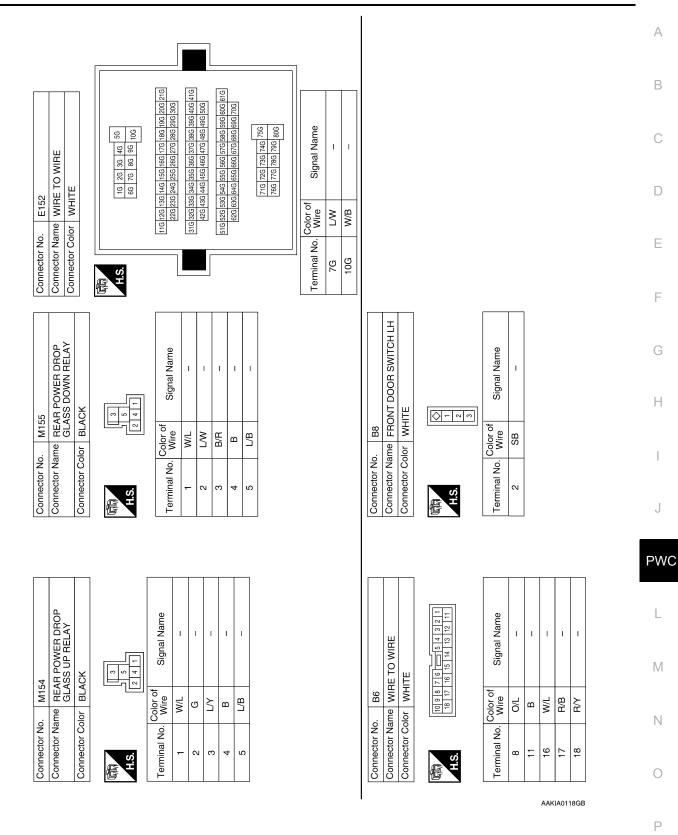
W/L

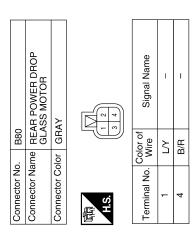
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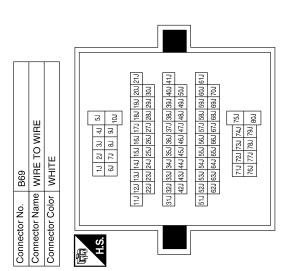


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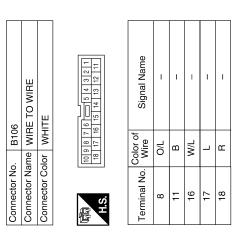




Signal Name	ı	ı	Î	ſ	ı	ı	_
Color of Wire	B/R	₹	SB	O/L	R/Y	R/B	M/L
Terminal No.	80	6	600	66J	L27	787	79J



Connector No.	. B108	8
Connector Name	me FRC	FRONT DOOR SWITCH RH
Connector Color	lor WHITE	IE
H.S.		[N-1210]
Terminal No.	Color of Wire	Signal Name
2	R/L	ı



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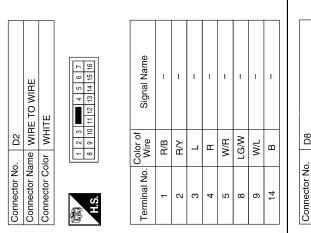
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2) WIRE	R103 REAR POWER DROP GLASS SWITCH WHITE Trof Signal Name N - N - N - N - N	В
WHITE WHRE TO WIR WHITE Or of Signa W Signa Signa Signa Signa Signa Signa Signa	R103 REAR POW GLASS SW WHITE r of Sig	С
Name NHR Name WIRE Name WHR Name NHR Name NHR NHR		D
Connector No. R1	Connector No. Connector Name Connector Color Terminal No. W 3 1 6	Е
		F
95	9 B B B B B B B B B B B B B B B B B B B	G
Signal Name		Н
Color of Wire R R/L O/L	Note	I
Terminal No. C 2M 9M 61M 66M 66M 96M 96M	Connector No. R101 Connector Name WIRE TO WIRE Connector Color WHITE Terminal No. Wire Signal No. Wire 6 G G 7 L/W 14 B	J
		PWC
B149	Signal Name	L
MURE TO WIRE WHITE IM	1 1 101 1 2191211 1 1 1 1 1	M
10. B149 Vame WIRE Solor WHIT TIM TaM TaM TaM TaM TaM TaM TaM TaM TaM Ta	No. No.	Ν
Connector No. B149 Connector Name WIRE TO WIRE Connector Color WHITE IM 2M 3M 4M 4M 5M	Connector No. R6	0
	ABKIA0031GB	
		Р

Signal Name	UNLOCK	ı	1	ı	1	1	1	1	ANTI PINICH SERIAL LINK	1	1
Color of Wire	Œ	В	G/R	0	M/L	G/W	_	G/Y	LG/W	BR	-
Terminal No.	9	7	8	6	10	11	12	13	14	15	16

I	_	16
1	BB	15
ANTI PIN SERIAL	M/97	14
1	√5	13
I	_	12
_	M/S	11
I	T/M	10
I	0	6
_	H/9	8
1	Я	2
NNFO	œ	9
Signal Na	Color of Wire	Terminal No.

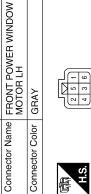
Connector Name Connector Color		MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH (CREW CAB) WHITE
原 H.S.	8 9 1	3 4
Terminal No.	Color of Wire	Signal Name
-	R/Y	ı
2	M/B	ı
3	B/B	-
4	7	LOCK
5	7	_

Connector No.



Connector No.	D14
Connector Name	Connector Name FRONT DOOR LOCK ASSEMBLY LH
Connector Color BLACK	BLACK
1 2	3 4 5 6

FRONT DOOR LOCK ASSEMBLY LH	CK	4 S 6	Signal Name	LOCK	GND	UNLOCK
	lor BLACK	3	Color of Wire	Г	В	œ
Connector Name	Connector Color	南 H.S.	Terminal No.	-	2	9



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Connector No.

Connector Name MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH (CREW CAB)

D8

WHITE

Connector Color





0	Signal Name	1	ı	I	I	I	1
o Z	Color of Wire	G/W	G/R	G/Y	BR	0	M/B
Terminal 1 2 3 3 5 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	Terminal No.	-	2	3	4	2	9









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-	WIRE TO WIRE	TE	4 5 6 7 8 9 10 13 14 15 16 17 18		Signal Name	ı	ı	ı	ı	ı
. D201		lor WHITE	1 2 3 4		Color of Wire	O/L	В	M/L	R/B	2
onnector No.	onnector Name	onnector Color		Ó.	erminal No.	8	11	16	17	ā

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



Signal Name	ı	_	ı	1	ı	
Color of Wire	O/L	В	M/L	B/B	R/Υ	
Terminal No.	8	11	16	17	18	
			-			

D104	Connector Name FRONT POWER WINDOW MOTOR RH	GRAY	2 5 1
Connector No.	Connector Name	Connector Color GRAY	



Signal Name	ı	1	I	1	I	1
Color of Wire	g	_	G/Y	G/R	G/W	M/B
Terminal No.	-	2	3	4	5	9

Signal Name	1	I	ı	GND	ı	1	I	I	ANTI PINCH SEPRIAL LINK
Color of Wire	Γ	Э	W/R	В	G/Y	-	1	G/W	LG/W
Terminal No. Wire	8	6	10	11	12	13	14	15	16

Connector No.	D101	2				
Connector Name WIRE TO WIRE	₹	뿐	임	≥	뿚	
Connector Color WHITE	≷	늦	ш			
9		H	II	Ц		
	-	2		က	4	
	10	9	5 6 7 8 9 10	6	10	



Signal Name	-	I	I	I
Color of Wire	W/R	В	SHIELD	LG/W
erminal No.	1	က	9	7

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



Signal Name	1	I	I	1	_	ı	ı
Color of Wire	1	-	M/B	G/R	_	-	-
Terminal No. Wire	-	2	က	4	2	9	7

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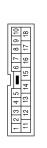
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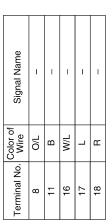
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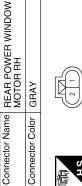


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Signal Name	I	I
Color of Wire	5	7
al No.		



- CV	Signal Na	I	1
	Color of Wire	В	٦
H.S.	Terminal No.	ŀ	7



D304

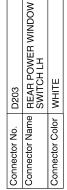
Connector No.

Connector Name









Connector Name REAR POWER WINDOW MOTOR LH

Connector No. D204

GRAY

Connector Color







Signal Na	BAT	UP	MOG	MOO	UP	ı	I
Color of Wire	M/L	R/Y	R/B	G	L	O/L	В
erminal No.	-	2	3	4	5	9	7

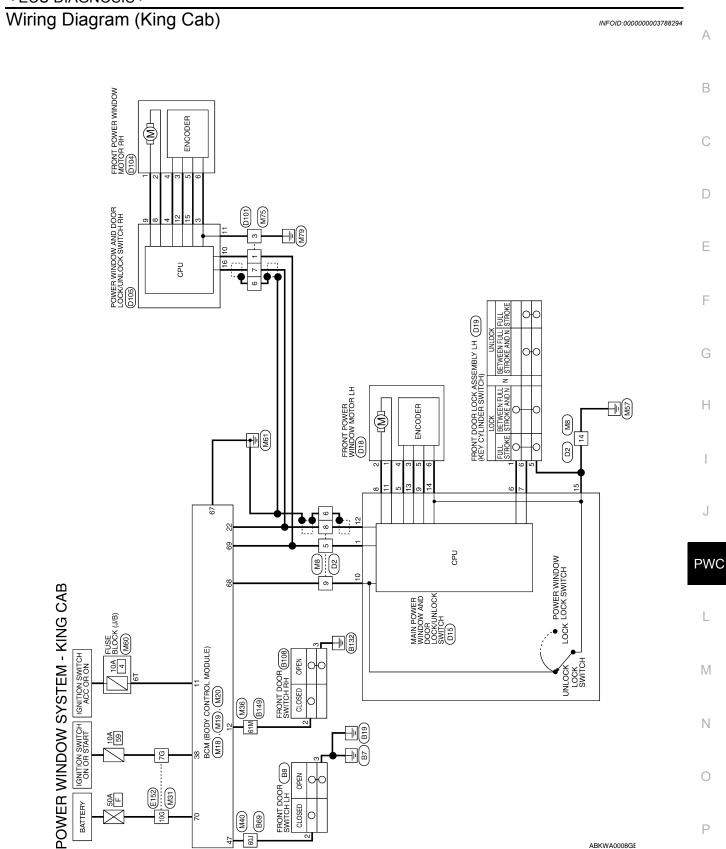






Signal Name	BAT	UP	NMOQ	DOWN	d۸	_	_
Color of Wire	M/L	н	7	Y/B	BR	J/O	В
Terminal No.	-	2	3	4	2	9	7

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POWER WINDOW SYSTEM CONNECTORS - KING CAB

Connector No. M8		Conne
Connector Name WIRE TO WIRE	E TO WIRE	Conne
Connector Color WHITE		
		0000

Signal Name

Color of Wire W/R

Terminal No.

SHIELD

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M/L Q

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Connector Name BCM (BODY CONTROL MODULE)

M19

Connector No.

WHITE

Connector Color

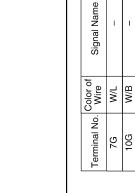
Connector No. M18 Connector Name BCM (BODY CONTROL MODULE) Connector Color WHITE		
Connector Name BCM (BODY CONTROL MODULE) Connector Color WHITE	Connector No.	M18
Connector Color WHITE	Connector Name	BCM (BODY CONTROL MODULE)
	Connector Color	WHITE

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

		20	9]					
		19	စ္တ						
		18	88						
		10 11 12 13 14 15 16 17 18						AL	
		16	36 37				ŝ	E &	
		15	ક્ષ		ue l	≥	2	SE(T	>
_		14	34 35		Signal Name	ACC SW	≶	ΞX	WO NO
		13	33			8	DOOR SW (AS)	N.	
	17	12	32		lig	Æ	lò	ANTI-PINCH SERIAL LINK (RX, TX)	=
	V	Ξ	31		Š				
	10	30 31 32 33					₹		
	$ \rangle$	6	83						
L		8	78		Color of Wire		١.		_
		7	27		§ §	0	R	മ	
		9	26		ري ا				-
		2	22		0.				
		4	24		Z				
,	3	3	ಜ		na	=	7	22	85
S H	4	2	21 22 23 24 25 26 27 28 29		ΙĒ			``	"
٦	1	-	72		Terminal No. Wire				

	Color of	-
l erminal No.	Wire	Signal Name
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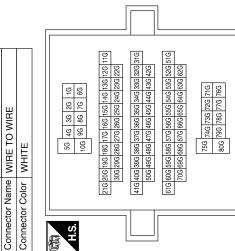


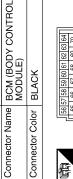
M31

Connector No.

M20

Connector No.

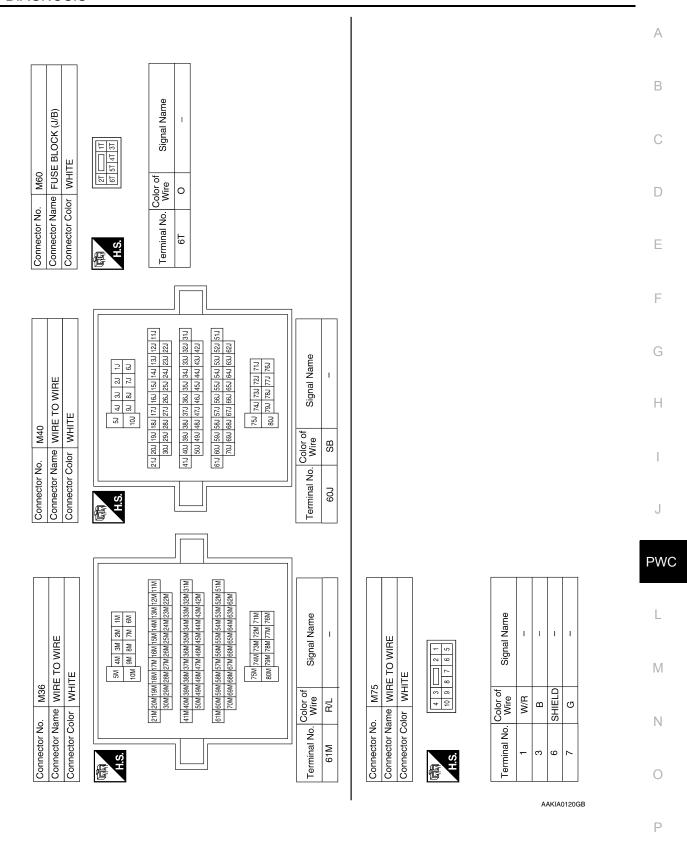


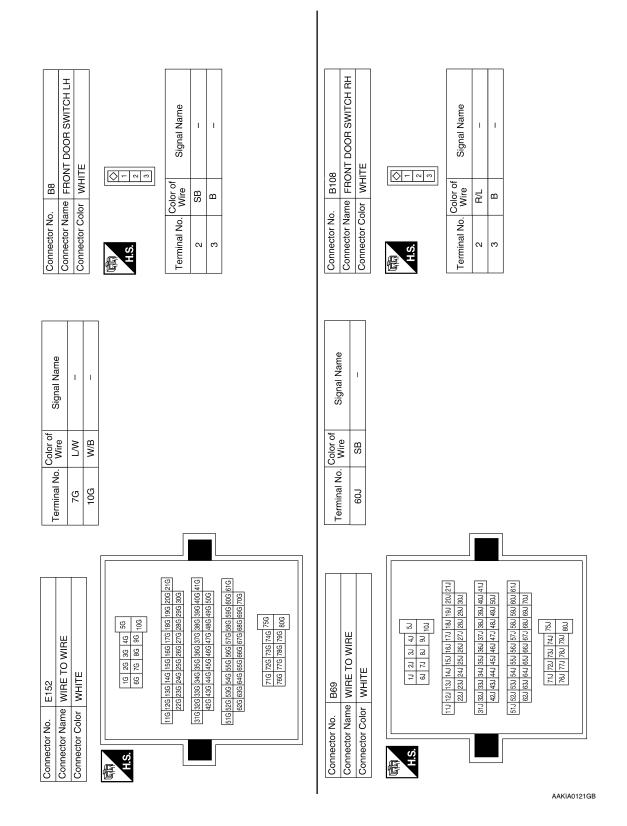




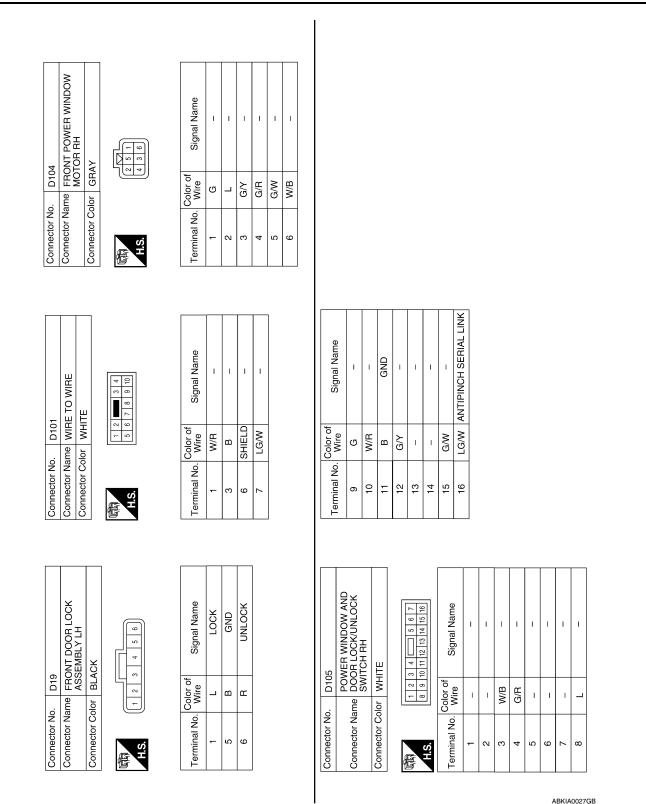
Terminal No. Wire	Color of Wire	Signal Name
29	В	GND (POWER)
89	7/M	POWER WINDOW POWER SUPPLY (RAP)
69	M/R	POWER WINDOW POWER SUPPLY (BAT)
20	B/M	BATT (F/L)

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	Connector No. Connector Color		B149 WIRE TO WIRE		Terminal No. 61M	Color of Wire R/L	Signal Name		Connector No. Connector Color	Connector No. D2 Connector Name WIRE TO WIRE	E TO WIRE		
	用.S.		1M 2M 3M 4M 5M 6M 7M 8M 9M 10M						E.S.	8 9 10	1 2 3 1 1 2 3 1 1 1 5 1 5 1 5 1 1		
		22M 23N 22M 23N 31M 32M 33M	11M 12M 13M 14M 15M 15M 17M 18M 19M 20M 21M						Terminal No.	o. Wire W/R	Signal Name		
		51M 52M 53N 62M 63M							ω ω σ	SHIELD	1 1 1		
		2/2/2	71M 72M 73M 74M 75M 78M 77M 78M 79M 80M	7					0 4	<u> </u>			
ı													
	Connector No.		5		Terminal No.	Color of Wire	Signal Name		Connector No.				
	Connector Name		MAIN POWER WINDOW AND DOOR LOCK/UNLOCK	1	9	2 -	LOCK		Connector Name		FRONT POWER WINDOW MOTOR LH	MOON	
		_	WITCH (KING CAB)		7	æ	UNLOCK		Connector Color	Color GRAY	>		
	Connector Color	_	WHITE		8	G/R	1		á]		
		-	1 2 2 4		6	0	1		好山	كا	2 2 1		
	H.S.	- 8	75		11	W/C	1 1		H.S.	رك	4 3 6		
		200		1	12	LG/W	ANTI PINCH	×		\$0.00 \$0.00			
	Terminal No.	No. Wire	Signal Name		13	G/Y			Terminal No.	ر ر	Signal Name		
	-	M/R	I	1	14	M/B	1		-	Ø/W	1		
	2	1	ı	I	15	В	GND		2	G/R	1		
	თ <u>-</u>	ı	1		16	ı	ı		e	√,5 a	1		
AAKIA	t 0	BB	1 1						t 10	5 0	1 1		
01220									9	M/B	1		
äΒ													
Р	0	Ν	L	PW	J	I	Н	G	E F	D	С	В	Α



Fail Safe

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.

< ECU DIAGNOSIS >

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 mal- function	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 actua 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 up- dated 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.

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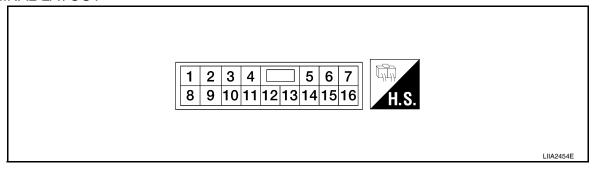
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FRONT POWER WINDOW SWITCH

FRONT POWER WINDOW SWITCH

Reference Value

TERMINAL LAYOUT



PHYSICAL VALUES

POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH

	nal No. e color)	Description		Condition	Voltage [V]
+	_	Signal name	Input/ Output	Condition	(Approx.)
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.	(V) 6 4 2 0 10 ms

FRONT POWER WINDOW SWITCH

< ECU DIAGNOSIS >

	minal No. re color) Description		Condition	Voltage [V]	
+	_	Signal name	Input/ Output	Condition	(Approx.)
15 (G/W)	3	Encoder pulse signal 2	Input	When power window motor operates.	(V) 6 4 2 0 10 ms
16 (LG/W)	Ground	Power window serial link	Input/ Output	IGN SW ON or power window timer operating.	(V) 15 10 5 0 10 ms JPMIA0013GB

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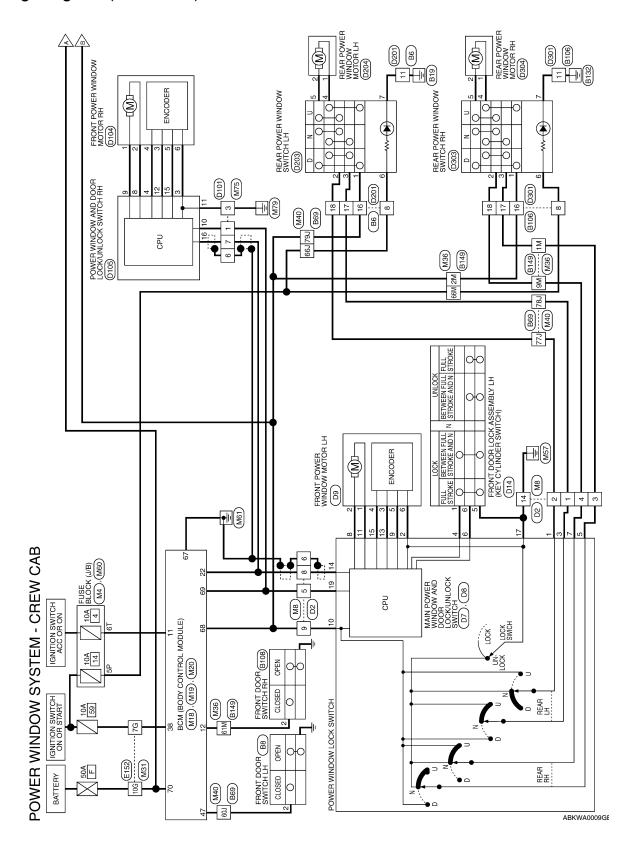
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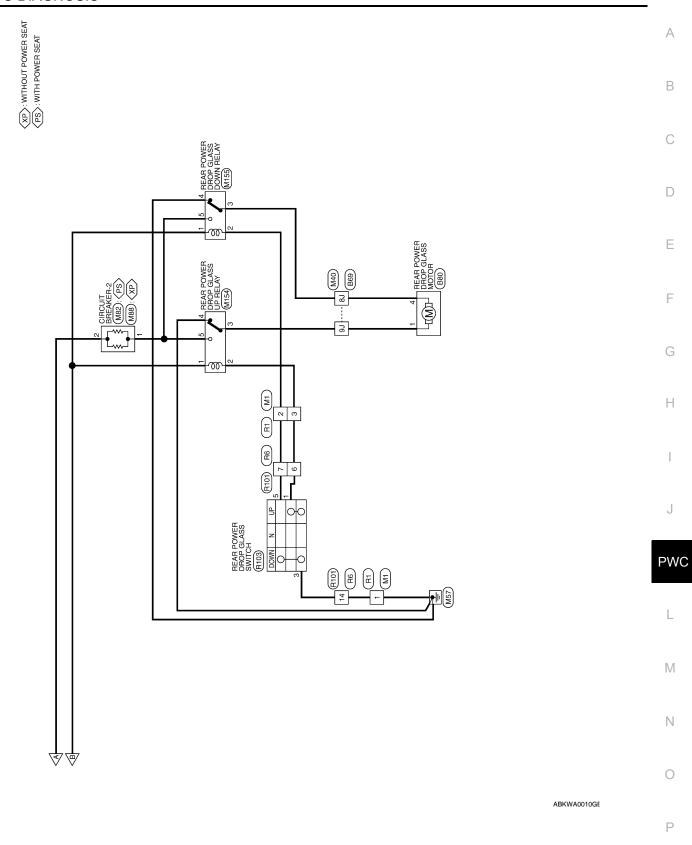
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Wiring Diagram (Crew Cab)

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POWER WINDOW SYSTEM CONNECTORS - CREW CAB

Connector Name WIRE TO WIRE Connector Color WHITE		
Connector Name WIRE TO WIRE Connector Color WHITE	Connector No.	M1
Connector Color WHITE	Connector Name	WIRE TO WIRE
	Connector Color	WHITE

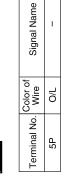
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	Щ		Ш	2	6
	₩		I	က	10
	>		٦	П	16 15 14 13 12 11 10 9
	۲	ш	۲	Ш	12
	끭	ΙĒ	I	4	13
Ξ	₹	WHITE	I	2	14
_	^		I	9	15
	l e	ō	I	7	16
ector No.	nector Name WIRE TO WIRE	nector Color	_		,



Signal Name	ı	I	-
Color of Wire	В	MΠ	G
Terminal No.	-	2	3

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

Connector No.



WHRE TO WIRE WHITE 5 4 3 2 1	1 1	1 1 1	1	1
	R W/R	SHIELD	W/L	В
Connector Name Connector Color H.S. Terminal No. Will Terminal No.	5	ာ ဖ ထ	6	14

Signal Name	I	ı	ı	1	1	1	1	1	1	
Color of Wire	B/B	R/Υ	_	Œ	W/R	SHIELD	В	M/L	В	
Terminal No.	-	2	က	4	5	9	8	6	14	
			•							

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

Connector Name BCM (BODY CONTROL MODULE)

M19

Connector No.

Connector Color WHITE

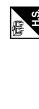






Terminal No. Wire	Color of Wire	Signal Name
29	В	GND (POWER)
89	7//M	POWER WINDOW POWER SUPPLY (RAP)
69	W/R	POWER WINDOW POWER SUPPLY (BAT)
70	8/M	BATT (F/L)

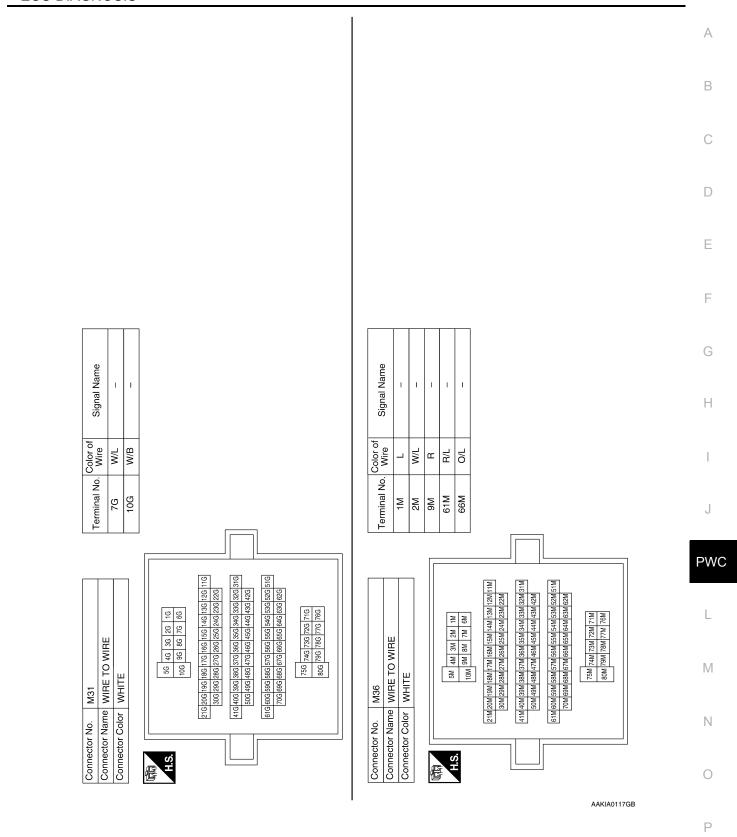
Connector No. M18	M18
Connector Name	Connector Name BCM (BODY CONTROL MODULE)
Connector Color WHITE	WHITE
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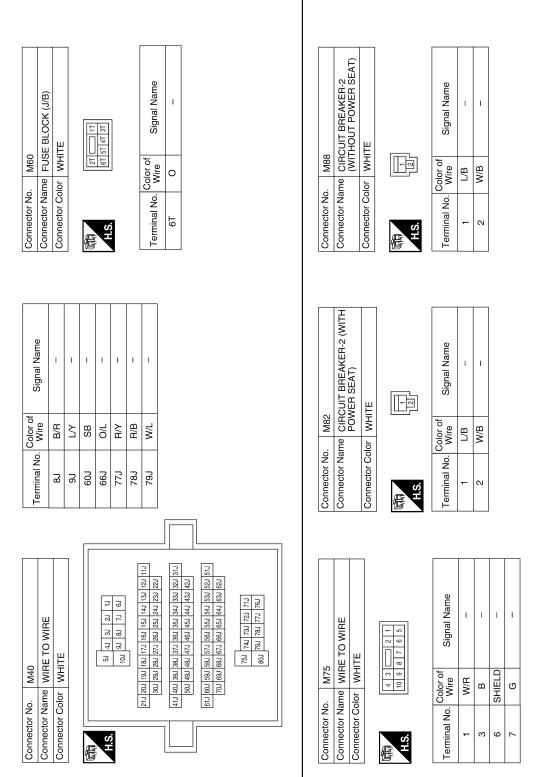


Signal Name	DOOR SW (DR)	
Color of Wire	SB	
Terminal No.	47	

Signal Name	ACC SW	DOOR SW (AS)	ANTI-PINCH SERIAL LINK (RX, TX)	IGN SW
Color of Wire	0	R/L	G	M/L
Color o	11	12	22	38

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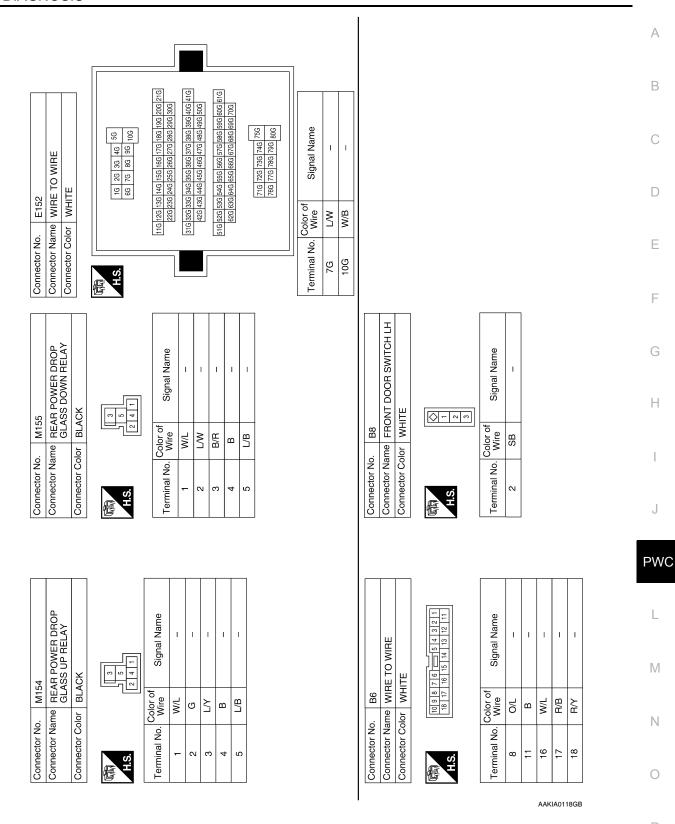
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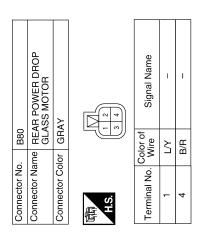
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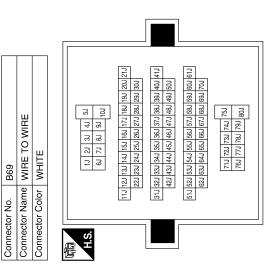
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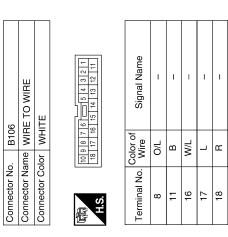




	_	_		_			
Signal Name	ı	ı	1	ſ	I	ı	I
Color of Wire	B/R	₹	SB	O/L	R/Y	R/B	M/L
Terminal No.	89	90	600	66J	L77	787	79.1



Connector No.	. B108	8
Connector Name		FRONT DOOR SWITCH RH
Connector Color	lor WHITE	ITE
H.S.		
Terminal No.	Color of Wire	Signal Name
2	R/L	ı



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FRONT POWER WINDOW SWITCH

< ECU DIAGNOSIS >

Color of Signal Name	1	W/L – – W/L	- H	1	- T/O	Terminal No.	-	CV C				Io. R101 Connector No.		WHITE Connector Color	1 2 3 4 5 6 7	H.S.	Color of Signal Name Terminal No.	1	L/W - 3	В -	
Connector No. B149 Terminal No.	Connector Color WHITE 10 WIRE 10M	2M	M6	MS MM MM SM	M8 M7 M9	11M 12M 13M 14M 15M 15M 16M 19M 20M 21M 22W 23M 23M 24M 25M 26M 25M 29M 30M	STM STAN STAN STAN STAN STAN STAN STAN STAN	42M43M44M45M46M47M48M49M50M	51M52M53M54M55M56M%57M58M59W80M61M 62M63M64M65M68M67M88M63M70M	71M 72M 73M 74M 75M 75M 75M 75M 77M 77M 77M 77M 78M 79M 99M sow	MOO Land land land land	Connector No. R6 Connector No.	O WIRE	WHILE	斯 7 6 5 4 1 2 1 1 10 9 8 H.S. H.S		Terminal No. Wire Signal Name Terminal No.	9 9	7 L/W – 7	14 B – 14	

Signal Name	UNLOCK	ı	ı	ı	ı	1	_	_	ANTI PINICH SERIAL LINK	ı	I
Color of Wire	æ	æ	G/R	0	M/L	G/W	-	G/Y	LG/W	BR	1
Terminal No.	9	7	8	6	10	=	12	13	14	15	16

Signal Name

Color of Wire

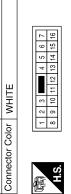
Terminal No.

M/B R/B

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Connector No.	D7
Connector Name	Connector Name AND DOOR LOCK/UNLOCK SWITCH (CREW CAB)
Connector Color WHITE	WHITE



Connector Name WIRE TO WIRE

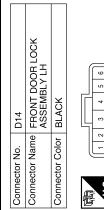
Connector No.

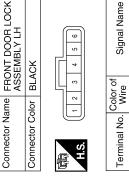


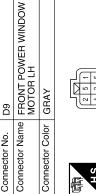
Signal Name	ı	-	-	1	ı	ı	ı	ı
Color of Wire	B/B	R/Y	٦	В	W/R	LG/W	M/L	В
Terminal No. Wire	-	2	8	7	5	8	6	14

LOCK

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Connector No.

Connector Name | MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH (CREW CAB)

D8

Connector No.

WHITE

Connector Color





Signal Name	I	I	I	_	I	1
Color of Wire	G/W	G/R	G/Y	BR	0	M/B
Terminal No.	-	2	က	4	5	9

UNLOCK

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Signal Name	GNÐ	_	P WDW BAT
Color of Wire	В	_	W/R
Terminal No.	17	18	19

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			1								
-	WIRE TO WIRE	IITE		4 5 = 6 7 8 9 10 13 14 15 16 17 18		Signal Name	ı	_	1	-	-
. D201		lor WHITE		1 2 3		Color of Wire	0/L	В	M/L	B/B	В/Υ
onnector No.	onnector Name	onnector Color			į	erminal No.	8	11	16	17	18

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

RE TO WIRE	ITE	4 5 6 7 8 9 10 13 14 15 16 17 18	Signal Name	1	1	1
me WIF	lor WHITE	11 2 3 4	Color of Wire	70	В	M/L
Connector Name WIRE TO WIRE	Connector Color	雨 H.S.	Terminal No.	8	11	16

1	I	ı	I	ı		
٦	G/Y	G/R	G/W	M/B		2-1-0
2	3	4	5	9		

Signal Name	ı	_	1	GND	-	I	1	1	ANTI PINCH SEPRIAL LINK
Color of Wire	Г	В	W/R	В	G/Y	ı	ı	G/W	LG/W
Terminal No.	8	6	10	11	12	13	14	15	16

	R		4	9 10
	⋝		3	6
	0			8
_	Ш	쁜	╚	2
9	ΙR	Į	2	9 9
D101	>	>	-	2
Connector No.	Connector Name WIRE TO WIRE	Connector Color WHITE	恒	у. Т

Connector Name FRONT POWER WINDOW MOTOR RH

D104

Connector No.

GRAY

Connector Color

Signal Name	1	1	1	1
Color of Wire	W/R	В	SHIELD	LG/W
Terminal No.	1	3	9	7

Signal Name

Color of Wire G

Terminal No.

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



Signal Name	ı	I	I	_	_	1	1
Color of Wire	I	_	M/B	G/R	_	_	ı
Terminal No.	-	2	8	4	2	9	7

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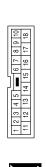
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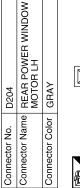
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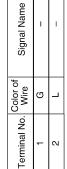




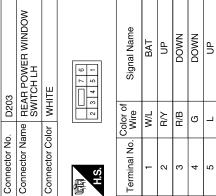
Signal Name	ı	ı	Ι	1	1
Color of Wire	O/L	В	M/L	Т	В
Terminal No.	8	11	16	17	18



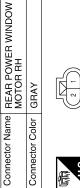








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D304

Connector No.

Connector No.

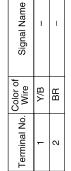
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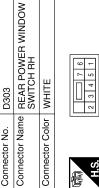
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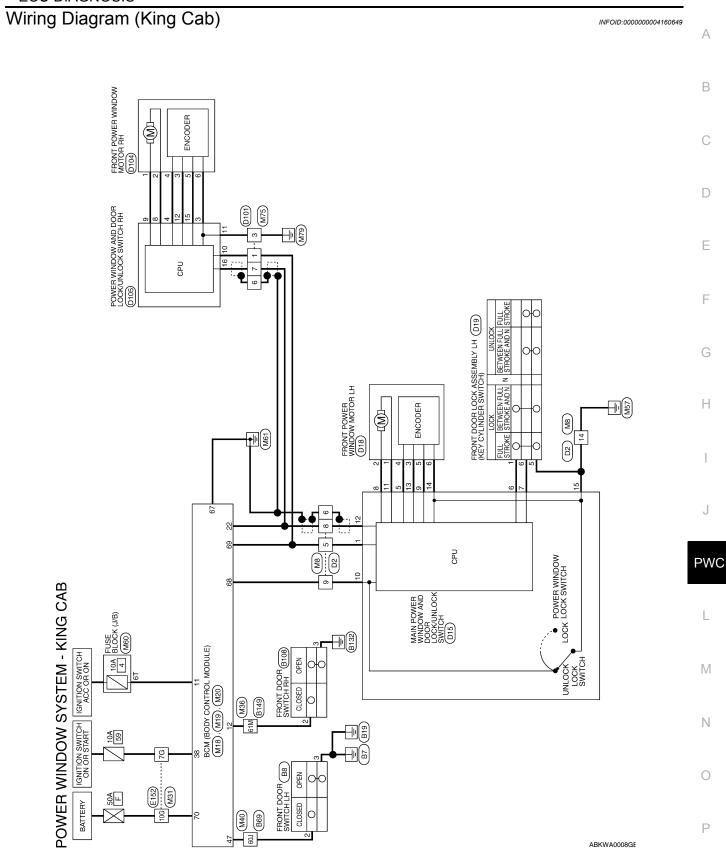






Signal Name	BAT	UP	DOWN	DOWN	UP	ı	1
Color of Wire	M/L	Œ	٦	Y/B	BR	O/L	В
Terminal No.	-	2	3	4	5	9	7

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POWER WINDOW SYSTEM CONNECTORS - KING CAB

Connector No.	M8	Connector No. M18	M18	Conne	Connector No. M19	M19
Connector Name WIRE	WIRE TO WIRE	Connector Name	Connector Name BCM (BODY CONTROL	Conne	ector Name	Connector Name BCM (BODY CONTROL
Connector Color WH	WHITE		MODULE)			MODULE)
	:			0000	THE INTERPRETATION	LAT. 1141
		Connector Color WHILE	WHIIE		יכונטו כיסווטו	WHILE
	7 6 5 4 3 2 1			Ą		
) I	16 15 14 13 12 11 10 9 8	E				50 51 52 53 54 55
2						

Connector No.	. M18	m	
Connector Name		BCM (BODY CONTROL MODULE)	
Connector Color		WHITE	
南南 H.S.			
1 2 3 4 5 21 22 23 24 25	4 5 6 7 8 24 25 26 27 28	9 10 11 12 13 14 15 16 17 18 1 29 30 31 32 33 34 35 36 37 38 3	19 20 39 40
Terminal No.	Color of Wire	Signal Name	
11	0	ACC SW	
12	R/L	DOOR SW (AS)	
22	Q	ANTI-PINCH SERIAL LINK (RX, TX)	
38	M/L	IGN SW	

Signal Name

Color of Wire W/R

Terminal No.

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SHIELD

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DOOR SW (DR)

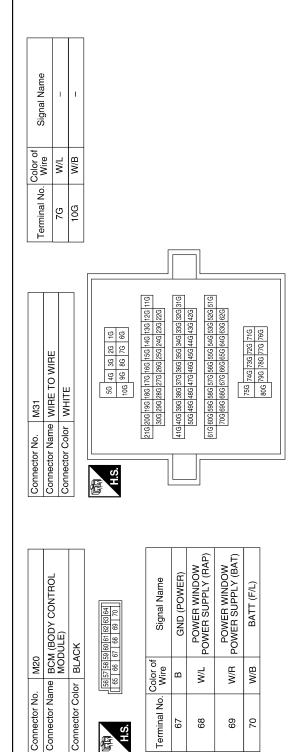
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Signal Name

Color of Wire

Terminal No.



Color of Wire

Terminal No.

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W/R W/B

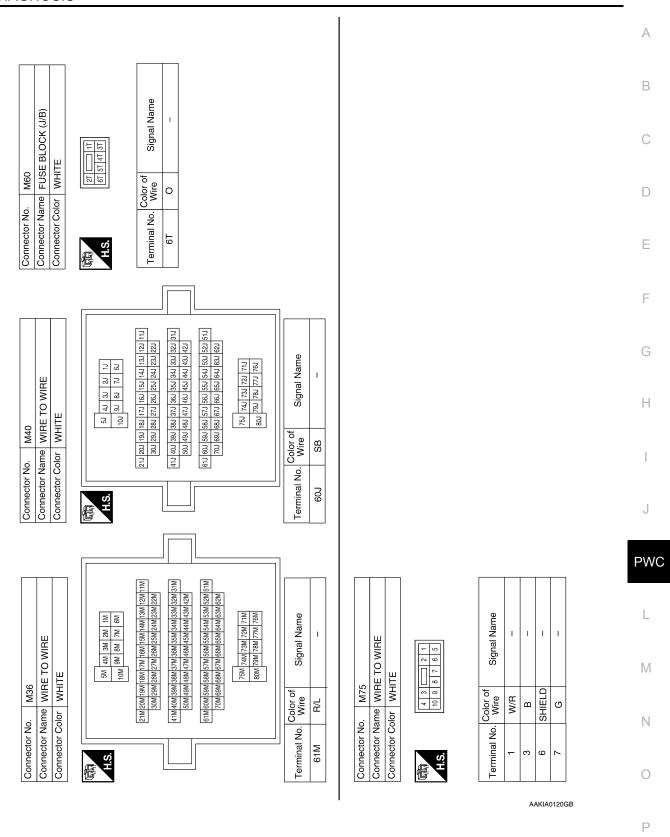
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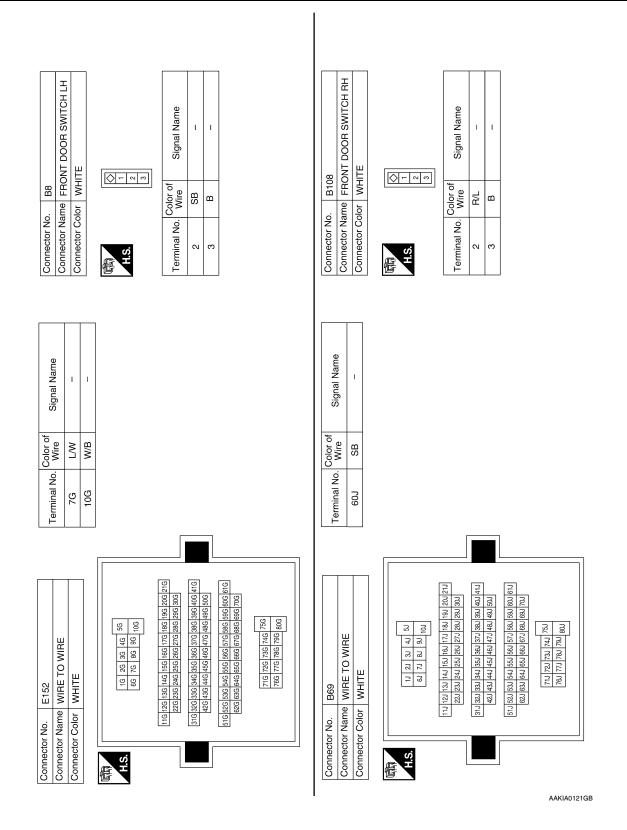
M20

Connector No.

Connector Color

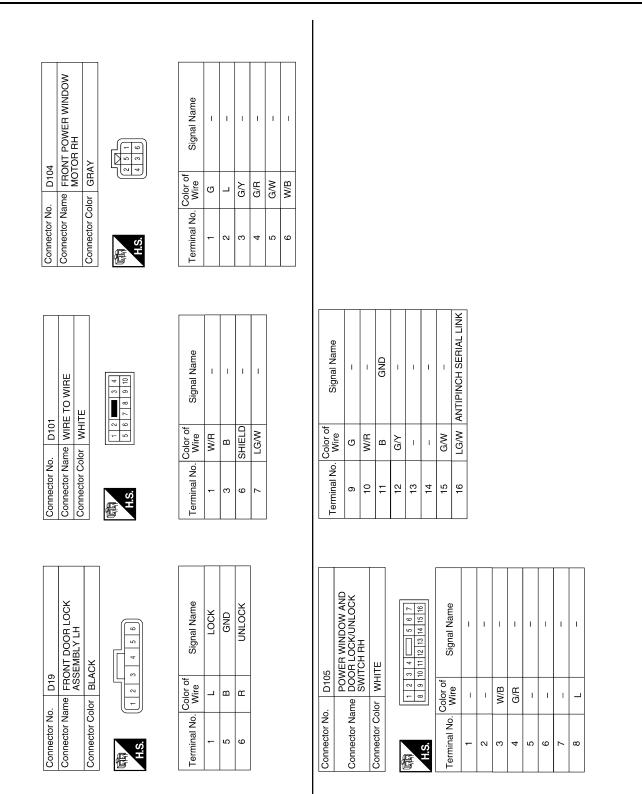


PWC-113



FRONT POWER WINDOW SWITCH

	Connector No. Connector Name Connector Color	Connector No. B149 Connector Name WIRE TO WIRE Connector Color WHITE	/IRE		Terminal No. 61M	Color of Wire R/L	Signal Name		Connector No. D2 Connector Name WIRE TO WIRE Connector Color WHITE	D2 ame WIRE T	TO WIRE		
	S. T.	11M ZM 3M 4M 5M 6M 10M 10M	1M 2M 3M 4M 5M 6M 10M 10M						Terminal No. 5 6 6 9 9 9 14		2 3 4 5 6 7		
1									N votocaco O				
	Connector No.	- 1	'ER WINDOW	J.	al No.	Color of Wire	Signal Name		Connector Name		D18 FRONT POWER WINDOW	MO	
	Connector Name		AND DOOR LOCK/UNLOCK		9	٦	LOCK			\rightarrow	RLH		
	-	_	KING CAB)		7	Œ	UNLOCK		Connector Color	olor GRAY			
	Connector Color	olor WHITE			8	G/R	ı			L	Γ		
					6	0	1		僵	2 2	-		
	THIS	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	3 14 15 16		10	M/L	1		H.S.	4	3 6		
	H.S.				=	G/W	1			J			
		Color of			12	LG/W	ANTI PINCH SERIAL LINK						
	Terminal No.	Wire	Signal Name		13	G/Y	1	T	al No.		Signal Name		
	-	W/R	1		14	M/B	ı		-	g/W	ı		
	5	-	ı		15	В	GND		2	G/R	ı		
	ဇ	1	1		16	ı	ı		က	Z√	1	T	
AAKI	4 r	- 8	1 1	-					4 ις	# c	1 1		
A0122	o	בה	I						9	W/B	1		
GB													
F	C	N	L	P۱	J	I	F	F	Е		(Е	A
D.				NC	J				Ξ)	0	3	4



Fail Safe

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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.

FRONT POWER WINDOW SWITCH

< ECU DIAGNOSIS >

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 mal- function	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 up- dated 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.

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NONE OF THE POWER WINDOWS CAN BE OPERATED USING ANY SWITCH

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

NONE OF THE POWER WINDOWS CAN BE OPERATED USING ANY SWITCH

Diagnosis Procedure

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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 <u>PWC-12</u>, "<u>POWER WINDOW MAIN SWITCH</u>: Component Function Check" (Crew Cab) or <u>PWC-21</u>, "<u>POWER WINDOW MAIN SWITCH</u>: Component Function Check" (King Cab).

<u>Is the inspection result normal?</u>

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 <u>PWC-12</u>, "<u>POWER WINDOW MAIN SWITCH</u>: Component Function Check" (Crew Cab) or <u>PWC-21</u>, "<u>POWER WINDOW MAIN SWITCH</u>: Component Function Check" (King Cab).

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 <u>PWC-12</u>, "<u>POWER WINDOW MAIN SWITCH</u>: Component Function Check" (Crew Cab) or <u>PWC-21</u>, "<u>POWER WINDOW MAIN SWITCH</u>: Component Function Check" (King Cab).

Is the inspection result normal?

YES >> Inspection End.

DRIVER SIDE POWER WINDOW ALONE DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

DRIVER SIDE POWER WINDOW ALONE DOES NOT OPERATE Α Diagnosis Procedure INFOID:0000000003788301 1. CHECK FRONT POWER WINDOW MOTOR LH В Check front power window motor LH. Refer to PWC-25, "DRIVER SIDE: Component Function Check". C Is the inspection result normal? YES >> Inspection End. NO >> Check intermittent incident. Refer to GI-38, "Intermittent Incident". D Ε F Н J **PWC** L M Ν 0

FRONT PASSENGER SIDE POWER WINDOW ALONE DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

FRONT PASSENGER SIDE POWER WINDOW ALONE DOES NOT OPERATE

Diagnosis Procedure

INFOID:0000000003788302

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

Check power window and door lock/unlock switch RH.

Refer to PWC-16, "FRONT POWER WINDOW SWITCH: Component Function Check" (Crew Cab) or PWC-22, "FRONT POWER WINDOW SWITCH: Component Function Check" (King Cab).

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-56, "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-26, "PASSENGER SIDE: Component Function Check".

Is the inspection result normal?

YES >> Inspection End.

REAR LH SIDE POWER WINDOW ALONE DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >		
REAR LH SIDE POWER WINDOW ALONE DOES NOT OPERAT	Έ	Α
Diagnosis Procedure	INFOID:0000000003788303	
1. CHECK REAR POWER WINDOW SWITCH LH		В
Check rear power window switch LH.		
Refer to <u>PWC-18</u> , " <u>REAR POWER WINDOW SWITCH</u> : Component Function Check". <u>Is the inspection result normal?</u>		С
YES >> GO TO 2		
NO >> Repair or replace the malfunctioning parts. 2. CHECK REAR POWER WINDOW MOTOR LH		D
Check rear power window motor LH.		
Refer to PWC-28, "REAR LH: Component Function Check".		Е
Is the inspection result normal? YES >> Inspection End.		
NO >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".		F
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REAR RH SIDE POWER WINDOW ALONE DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

REAR RH SIDE POWER WINDOW ALONE DOES NOT OPERATE

Diagnosis Procedure

INFOID:0000000003788304

1. CHECK REAR POWER WINDOW SWITCH RH

Check rear power window switch RH.

Refer to PWC-18, "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-29, "REAR RH: Component Function Check".

Is the inspection result normal?

YES >> Inspection End.

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

< SYMPTOM DIAGNOSIS > ANTI-PINCH SYSTEM DOES NOT OPERATE NORMALLY (DRIVER SIDE) Α Diagnosis Procedure INFOID:0000000003788305 1. CHECK DOOR WINDOW SLIDING PART В · 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. D 2. CHECK ENCODER CIRCUIT Check encoder circuit. Е Refer to PWC-32, "DRIVER SIDE: Component Function Check" (Crew Cab) or PWC-38, "DRIVER SIDE: Component Function Check" (King Cab). Is the inspection result normal? F >> Inspection End. YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident". NO Н **PWC** M

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

< SYMPTOM DIAGNOSIS >

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

Diagnosis Procedure

INFOID:0000000003788306

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 <u>PWC-34</u>, "<u>PASSENGER SIDE</u>: <u>Component Function Check</u>" (Crew Cab) or <u>PWC-40</u>, "<u>PASSENGER SIDE</u>: <u>Component Function Check</u>" (King Cab).

Is the inspection result normal?

YES >> Inspection End.

AUTO OPERATION DOES NOT OPERATE BUT MANUAL OPERATES NORMAL-LY (DRIVER SIDE)

< SYMPTOM DIAGNOSIS >

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

Diagnosis Procedure

1. CHECK ENCODER

Check encoder.

Refer to <u>PWC-32</u>, "<u>DRIVER SIDE</u>: <u>Component Function Check</u>" (Crew Cab) or <u>PWC-38</u>, "<u>DRIVER SIDE</u>: <u>Component Function Check</u>" (King Cab).

Is the inspection result normal?

YES >> Inspection End.

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

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AUTO OPERATION DOES NOT OPERATE BUT MANUAL OPERATES NORMAL-LY (PASSENGER SIDE)

< SYMPTOM DIAGNOSIS >

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

Diagnosis Procedure

INFOID:0000000003788308

1. CHECK ENCODER

Check encoder.

Refer to <u>PWC-34</u>, "<u>PASSENGER SIDE</u>: <u>Component Function Check</u>" (Crew Cab) or <u>PWC-40</u>, "<u>PASSENGER SIDE</u>: <u>Component Function Check</u>" (King Cab).

Is the inspection result normal?

YES >> Inspection End.

POWER WINDOW RETAINED POWER OPERATION DOES NOT OPERATE PROPERLY

< SYMPTOM DIAGNOSIS >

POWER WINDOW RETAINED POWER OPERATION DOES NOT OPERATE PROPERLY

INFOID:0000000003788309

Diagnosis Procedure

1. CHECK FRONT DOOR SWITCH

Check front door switch.

Refer to PWC-44, "Component Function Check".

Is the inspection result normal?

YES >> Inspection End.

NO >> Check intermittent incident. Refer to GI-38. "Intermittent Incident".

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DOES NOT OPERATE BY KEY CYLINDER SWITCH

< SYMPTOM DIAGNOSIS >

DOES NOT OPERATE BY KEY CYLINDER SWITCH

Diagnosis Procedure

INFOID:0000000003788310

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

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

Refer to <u>PWC-48</u>, "Component Function Check" (Crew Cab) or <u>PWC-51</u>, "Component Function Check" (King Cab).

Is the inspection result normal?

YES >> Inspection End.

KEYLESS POWER WINDOW DOWN DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

KEYLESS POWER WINDOW DOWN DOES NOT OPERATE

Diagnosis Procedure

INFOID:0000000003788311

1. CHECK KEYFOB FUNCTION

Check keyfob function.

Refer to BCS-18, "MULTIREMOTE ENT: CONSULT-III Function (BCM - MULTIREMOTE ENT)" with remote keyless entry system.

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Is the inspection result normal?

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

>> Replace BCM. Refer to BCS-53, "Removal and Installation".

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POWER WINDOW LOCK SWITCH DOES NOT FUNCTION

< SYMPTOM DIAGNOSIS >

POWER WINDOW LOCK SWITCH DOES NOT FUNCTION

Diagnosis Procedure

INFOID:0000000003788312

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

Replace main power window and door lock/unlock switch.

Refer to PWC-133, "Removal and Installation".

Is the inspection result normal?

YES >> Inspection End.

REAR POWER DROP GLASS DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

REAR POWER DROP GLASS DOES NOT OPERATE	
Diagnosis Procedure	Α
1. CHECK BCM POWER SUPPLY AND GROUND CIRCUIT	Б
Check BCM power supply and ground circuit.	В
Refer to BCS-30, "Diagnosis Procedure". Is the inspection result normal? YES >> GO TO 2	С
NO >> Repair or replace the malfunctioning parts. 2. CHECK REAR POWER DROP GLASS SWITCH	D
Check rear power drop glass switch. Refer to PWC-59, "Rear Power Drop Glass Circuit Inspection". Is the inspection result normal?	Е
YES >> GO TO 3 NO >> Repair or replace the malfunctioning parts. 3. CHECK REAR POWER DROP GLASS MOTOR CIRCUIT	F
Check rear power drop glass motor circuit. Refer to PWC-59, "Rear Power Drop Glass Circuit Inspection".	G
Is the inspection result normal? YES >> GO TO 4 NO >> Repair or replace the malfunctioning parts. 4. CHECK REAR POWER DROP GLASS RELAYS	Н
Check rear power drop glass relays. Refer to PWC-60, "Rear Power Drop Glass Down Relay Check" and PWC-62, "Rear Power Drop Glass Up Relay Check".	I
Is the inspection result normal? YES >> Inspection End. NO >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".	J
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PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

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.

POWER WINDOW MAIN SWITCH

< ON-VEHICLE REPAIR >

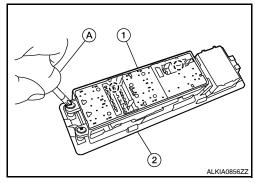
ON-VEHICLE REPAIR

POWER WINDOW MAIN SWITCH

Removal and Installation

REMOVAL

- 1. Remove the power window main switch assembly from the front door finisher LH. Refer to INT-10. <a href=""IREMOVAL and Installation".
- 2. Remove the screws from the power window main switch (1) using suitable tool (A). Then release the power window main switch (1) from the finisher (2).



INSTALLATION

Installation is in the reverse order of removal.

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FRONT POWER WINDOW SWITCH

< ON-VEHICLE REPAIR >

FRONT POWER WINDOW SWITCH

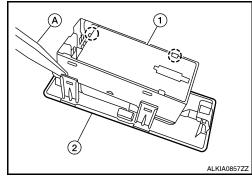
Removal and Installation

REMOVAL

- 1. Remove the front power window switch assembly from the front door finisher RH. Refer to <u>INT-10.</u> "Removal and Installation".
- 2. Remove the front power window switch (1) from the power window switch finisher (2) by releasing the tabs using suitable tool (A).

CAUTION:

Wrap a cloth around suitable tools to protect components from damage.



INFOID:0000000003788316

INSTALLATION

Installation is in the reverse order of removal.

REAR POWER WINDOW SWITCH

< ON-VEHICLE REPAIR >

REAR POWER WINDOW SWITCH

Removal and Installation - Rear Door Switch

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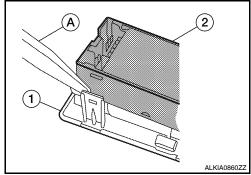
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REMOVAL

- 1. Remove the rear power window switch assembly from the rear door finisher. Refer to INT-10, "Removal and Installation".
- 2. Remove the rear power window switch (2) from the power window switch finisher (1) by releasing the tabs using suitable tool (A).

CAUTION:

Wrap a cloth around suitable tools to protect components from damage.



INSTALLATION

Installation is in the reverse order of removal.

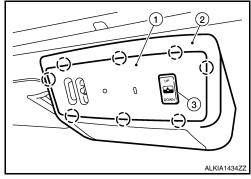
Removal and Installation - Power Drop Glass Switch

INFOID:0000000003788318

REMOVAL

- 1. Release the pawls and remove the overhead console switch panel (1) from the overhead console (2).
- 2. Disconnect the power drop glass switch (3).
- Remove the power drop glass switch (3) from the overhead console switch panel (1) by releasing the tabs using suitable tool.
 CAUTION:

Wrap a cloth around suitable tools to protect components from damage.



INSTALLATION

Installation is in the reverse order of removal.

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