SECTION PWC

POWER WINDOW CONTROL SYSTEM

CONTENTS

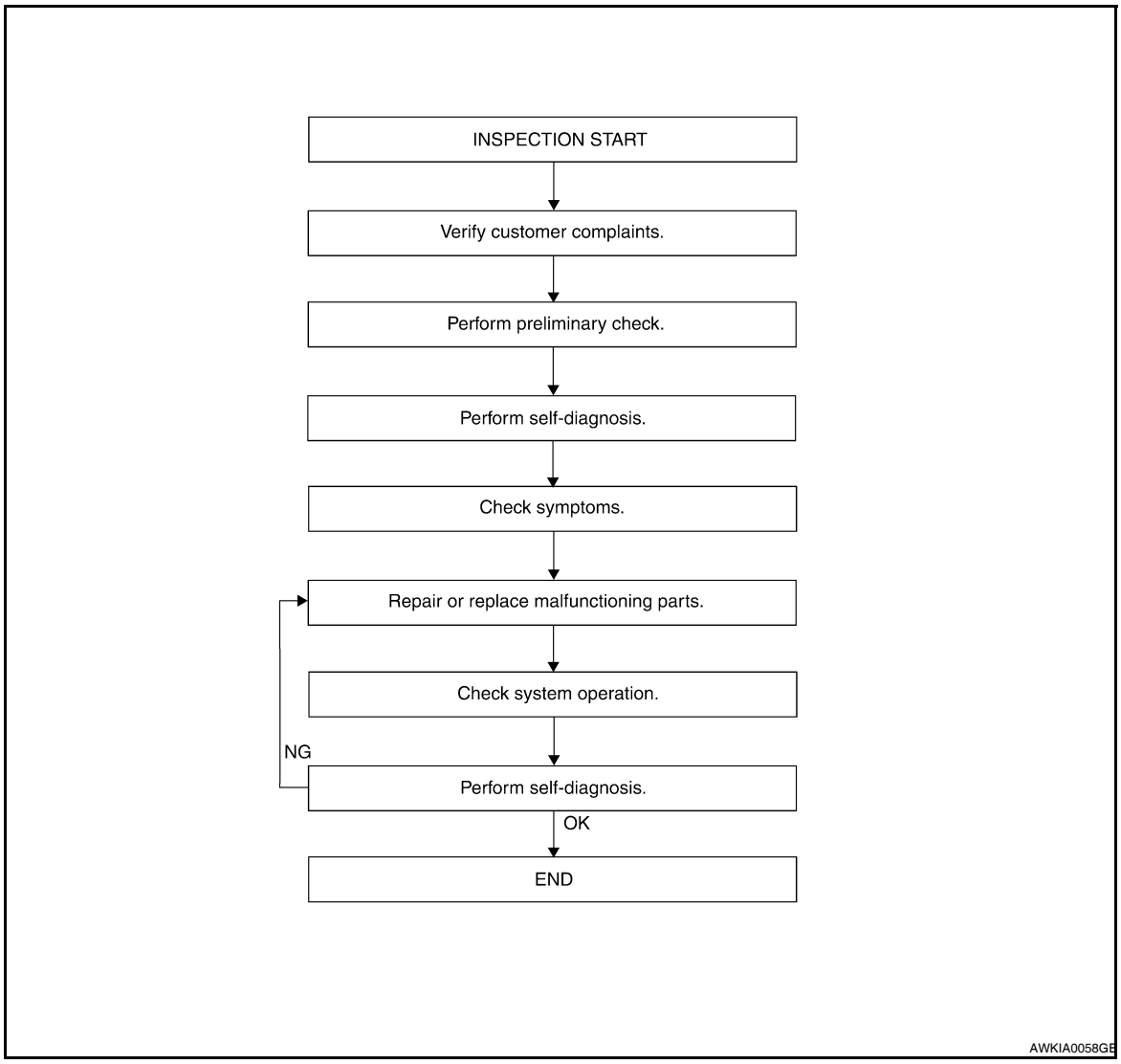
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000003788210

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".

>> GO TO 4

4. SYMPTOM

Check for symptoms. Refer to PWC-118, "Diagnosis Procedure".

>> GO TO 5

5. MALFUNCTIONING PARTS

Repair or replace the applicable parts.

>> GO TO 6

6. SYSTEM OPERATION

Check system operation.

>> GO TO 7

7. SELF-DIAGNOSIS

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

Are any DTCs indicated?

YES >> GO TO 5
NO >> Inspection End.

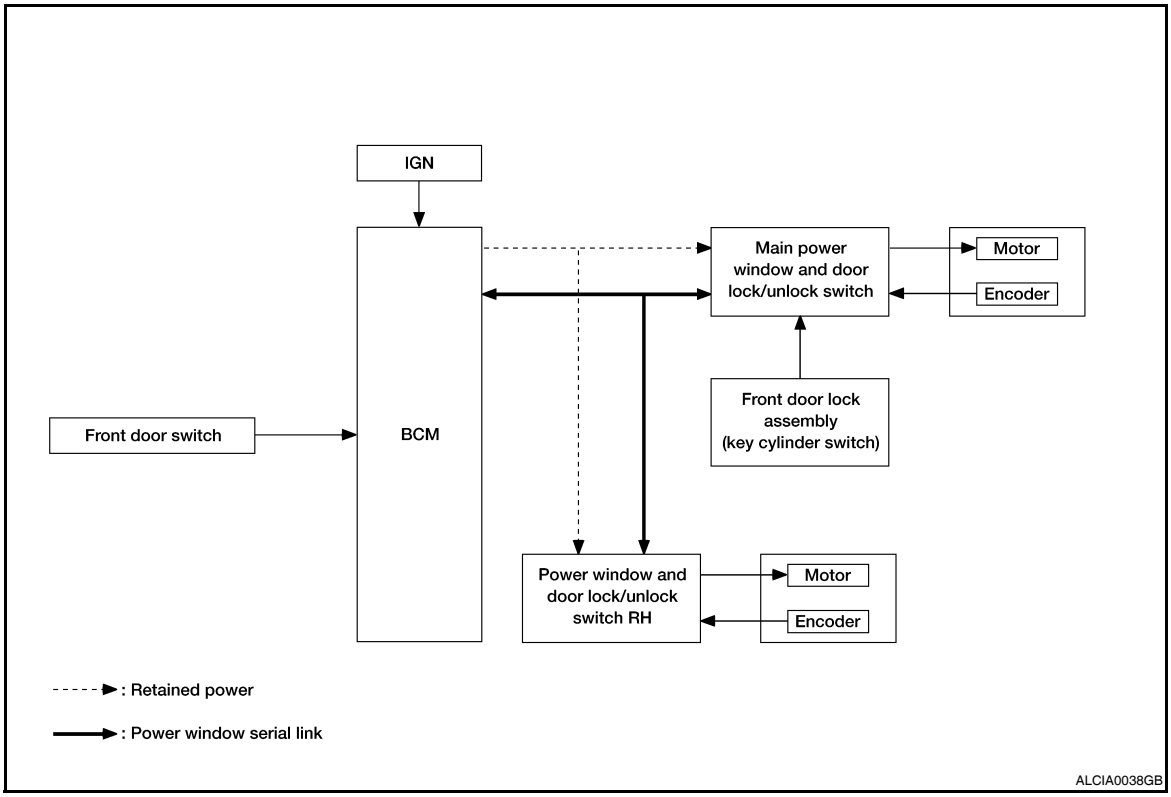
FUNCTION DIAGNOSIS

POWER WINDOW SYSTEM

System Diagram

INFOID:0000000003788211

FRONT WINDOW ANTI-PINCH SYSTEM



System Description

INFOID:0000000003788212

POWER WINDOW MAIN SWITCH
INPUT/OUTPUT SIGNAL CHART

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

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 SUPPORT”. Refer to DLK-20, "MULTIREMOTE ENT : CONSULT-III Function (BCM - MULTIREMOTE ENT)".

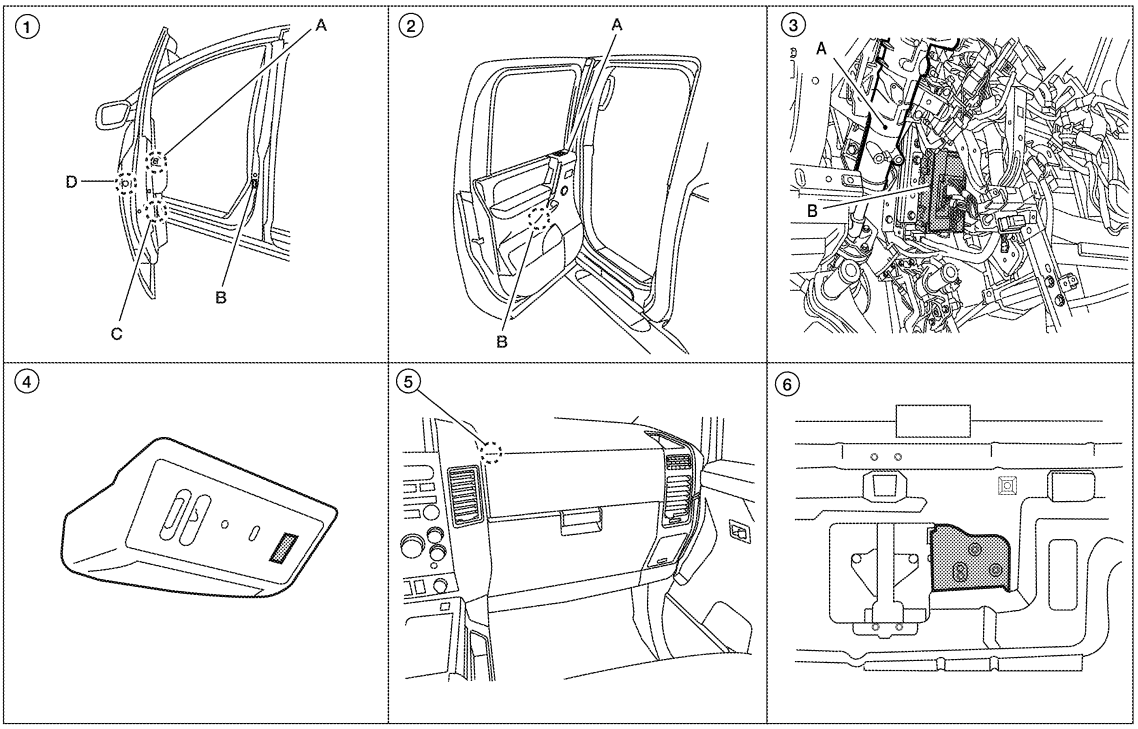
NOTE:

Use CONSULT-III to change settings.

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

Component Parts Location

INFOID:0000000003788213



AWKIA1326ZZ

1. 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, RH D104
   D. Front door lock assembly LH (key cylinder switch) D14
2. A. Rear power window switch LH D203, RH D303 (Crew Cab)
   B. Rear power window motor LH D204, RH D304 (Crew Cab)
3. A. Steering column (view with instument panel removed)
   B. BCM M18, M19, M20
4. Rear power drop glass switch R103 (Crew Cab)
5. Rear power drop glass up relay M154 (Crew Cab)
   Rear power drop glass down relay M155 (Crew Cab)
6. Rear power drop glass motor B80 (view with rear finisher removed) (Crew Cab)

Component Description

INFOID:0000000003788214

POWER WINDOW SYSTEM

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

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

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

INFOID:0000000004137755

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		
		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

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.

COMPONENT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT CHECK (CREW CAB)

POWER WINDOW MAIN SWITCH

POWER WINDOW MAIN SWITCH : Description

INFOID:0000000003788217

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

POWER WINDOW MAIN SWITCH : Component Function Check

INFOID:0000000003788218

Main Power Window And Door Lock/Unlock Switch

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

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

Is the inspection result normal?

YES >> Main power window and door lock/unlock switch power supply and ground circuit are OK.
NO >> Refer to PWC-12, "POWER WINDOW MAIN SWITCH : Diagnosis Procedure".

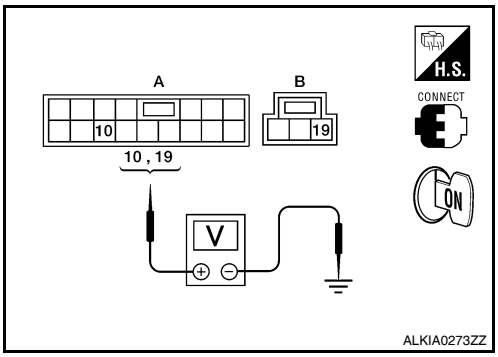
POWER WINDOW MAIN SWITCH : Diagnosis Procedure

INFOID:0000000003788219

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

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.



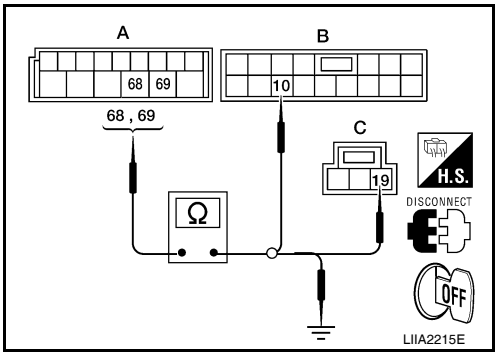
Terminal			Voltage (V) (Approx.)
(+)		(–)	
Main power window and door lock/unlock switch connector	Terminal		
D7 (A)	10	Ground	Battery voltage
D8 (B)	19		

Is the measurement value within the specification?

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

2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect BCM and main power window and door lock/unlock switch.
3. Check continuity between BCM connector (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
	69	D8 (C)	19	

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

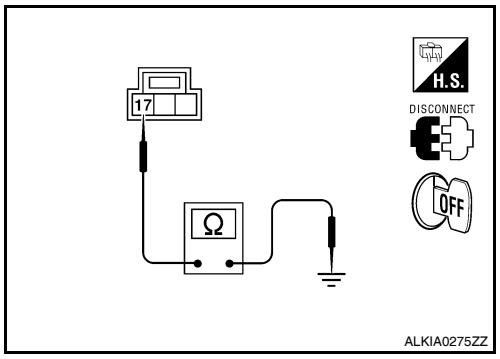
BCM connector	Terminal	Ground	Continuity
M20 (A)	68	Ground	No
	69		

Is the inspection result normal?

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

3. CHECK GROUND CIRCUIT

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



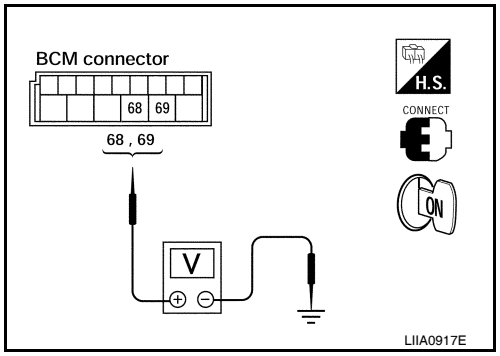
Main power window and door lock/unlock switch connector	Terminal	Ground	Continuity
D8	17		Yes

Is the inspection result normal?

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

4. CHECK BCM OUTPUT SIGNAL

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



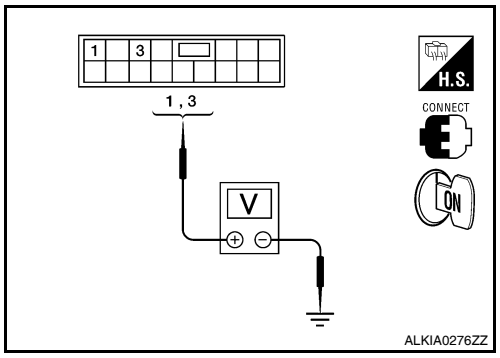
Terminals			Voltage (V) (Approx.)
(+)		(–)	
BCM connector	Terminal		
M20	68	Ground	Battery voltage
	69		

Is the measurement value within the specification?

YES >> Check main power window and door lock/unlock switch output signal (rear power window switch LH) GO TO 5
YES >> Check main power window and door lock/unlock switch output signal (rear power window switch RH) GO TO 6
NO >> Replace BCM. Refer to BCS-53, "Removal and Installation".

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

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



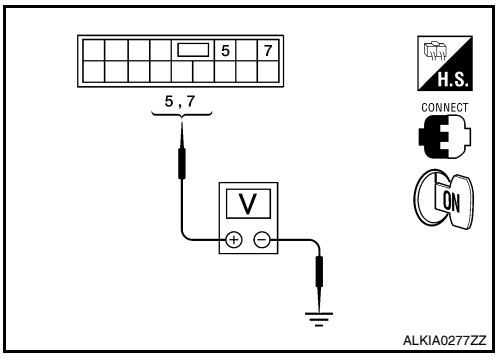
Terminal			Window condition	Voltage (V) (Approx.)
(+)		(–)		
Main power window and door lock/unlock switch connector	Terminal			
D7	1	Ground	UP	Battery voltage
			DOWN	0
	3		UP	0
			DOWN	Battery voltage

Is the measurement value within the specification?

YES >> GO TO 7
NO >> Replace main power window and door lock/unlock switch. Refer to PWC-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.



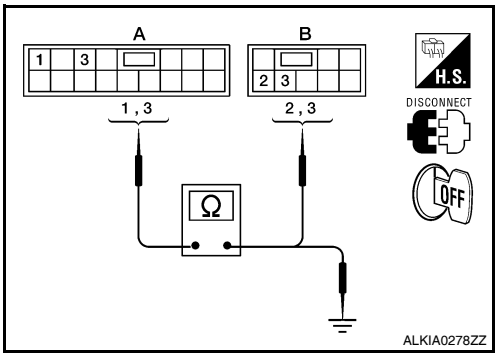
Terminal			Window condition	Voltage (V) (Approx.)
(+)		(–)		
Main power window and door lock/unlock switch connector	Terminal			
D7	7	Ground	UP	Battery voltage
			DOWN	0
	5		UP	0
			DOWN	Battery voltage

Is the measurement value within the specification?

YES >> GO TO 8
NO >> Replace main power window and door lock/unlock switch. Refer to PWC-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.
3. Check continuity between main power window and door lock/unlock switch connector and rear power window switch LH connector.



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

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

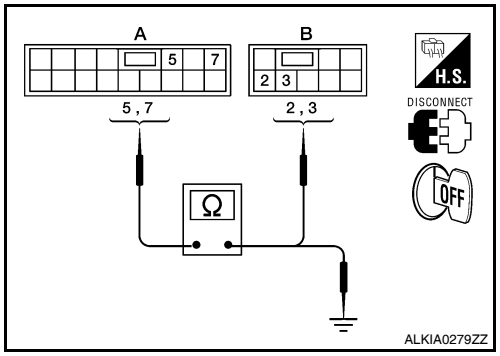
Main power window and door lock/unlock switch connector	Terminal	Ground	Continuity
D7	1	Ground	No
	3		

Is the inspection result normal?

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

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

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



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

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

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

Is the inspection result normal?

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

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

Check main power window and door lock/unlock switch.
Refer to PWC-15, "POWER WINDOW MAIN SWITCH : Component Inspection".

Is the inspection result normal?

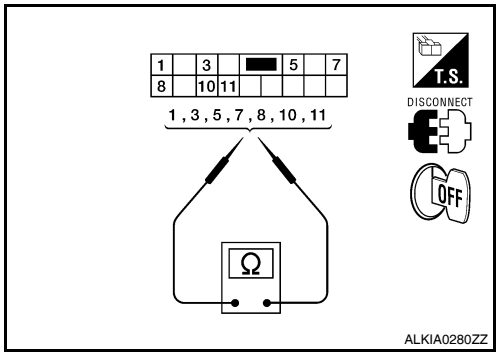
YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".
NO >> Replace main power window and door lock/unlock switch. Refer to PWC-133, "Removal and Installation".

POWER WINDOW MAIN SWITCH : Component Inspection

INFOID:0000000003788220

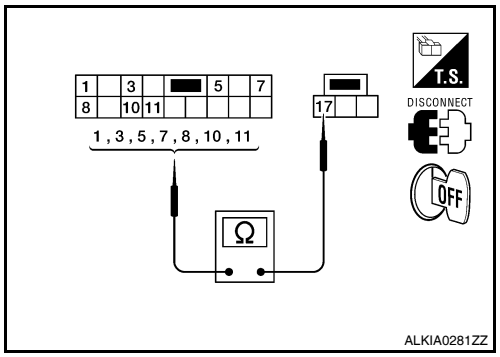
1. CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH

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



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

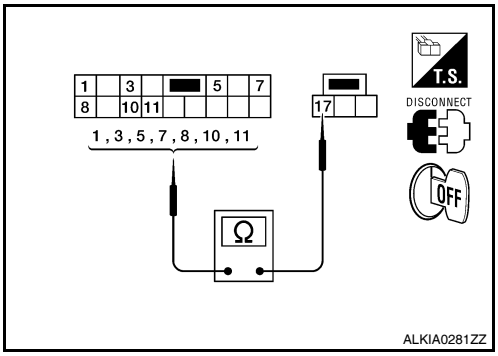
2. Check continuity between main power window and door lock/unlock switch (power window lock switch). (Lock operation).



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

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

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



Is the inspection result normal?

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

FRONT POWER WINDOW SWITCH

FRONT POWER WINDOW SWITCH : Description

INFOID:0000000003788221

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

FRONT POWER WINDOW SWITCH : Component Function Check

INFOID: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".

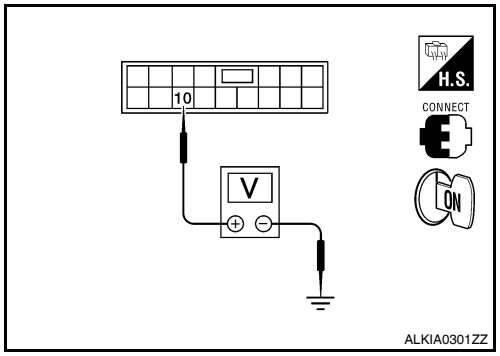
FRONT POWER WINDOW SWITCH : Diagnosis Procedure

INFOID:0000000003788223

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

1. CHECK POWER SUPPLY CIRCUIT

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



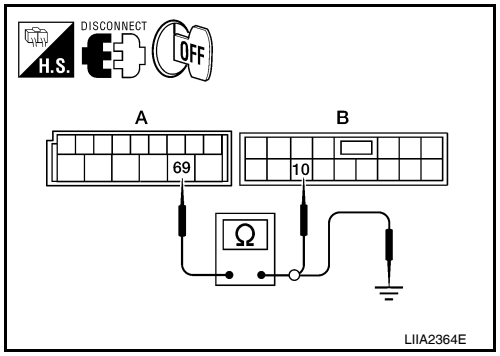
Terminal			Voltage (V) (Approx.)
(+)		(–)	
Power window and door lock/ unlock switch RH connector	Terminal		
D105	10	Ground	Battery voltage

Is the measurement value within the specification?

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

2. CHECK HARNESS CONTINUITY

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

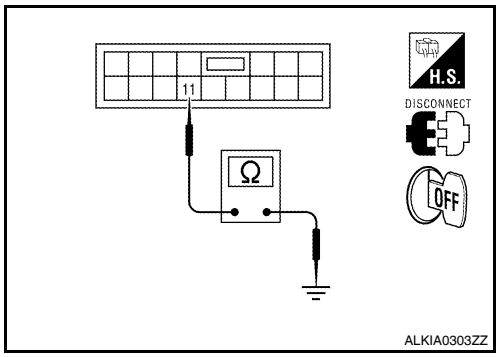
BCM connector	Terminal	Ground	Continuity
M20 (A)	69		No

Is the inspection result normal?

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

3. CHECK GROUND CIRCUIT

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



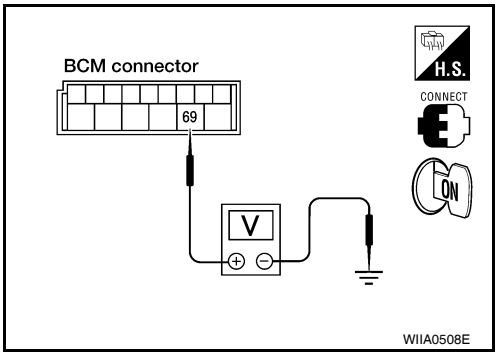
Power window and door lock/unlock switch RH	Terminal	Ground	Continuity
D105	11		Yes

Is the inspection result normal?

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

4. CHECK BCM OUTPUT SIGNAL

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



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

Is the measurement value within the specification?

YES >> Replace power window and door lock/unlock switch RH. Refer to PWC-134, "Removal and Installation".
NO >> Replace BCM. Refer to BCS-53, "Removal and Installation".

REAR POWER WINDOW SWITCH

REAR POWER WINDOW SWITCH : Description

INFOID:0000000003788224

- 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

Rear Power Window Switch

1. CHECK REAR POWER WINDOW MOTOR FUNCTION

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

Is the inspection result normal?

YES >> Rear power window switch power supply and ground circuit are OK.
NO >> Refer to PWC-18, "REAR POWER WINDOW SWITCH : Diagnosis Procedure".

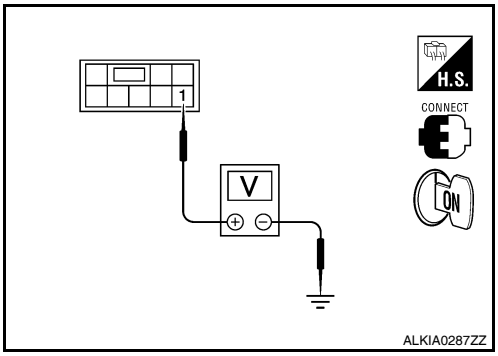
REAR POWER WINDOW SWITCH : Diagnosis Procedure

INFOID:0000000003788226

Rear Power Window Switch Power Supply Circuit Check

1. CHECK POWER SUPPLY CIRCUIT

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



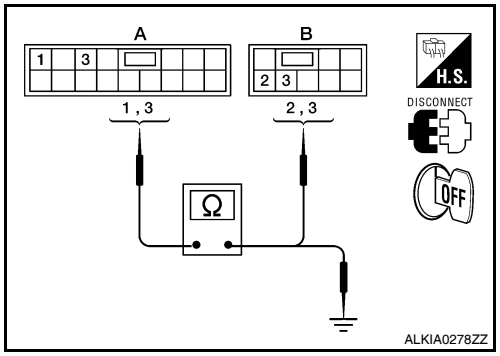
Terminal				Condition	Voltage (V) (Approx.)
(+)			(–)		
Rear power window switch connector		Terminal			
LH	D203	1	Ground	Ignition switch ON	Battery voltage
RH	D303				

Is the measurement value within the specification?

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

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

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

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

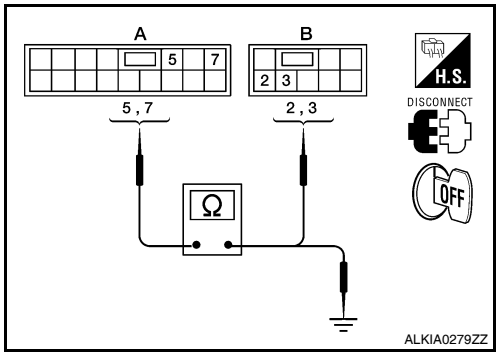
Main power window and door lock/unlock switch connector	Terminal	Ground	Continuity
D7 (A)	1	Ground	No
	3		

Is the inspection result normal?

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

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

1. Turn ignition switch OFF.
2. Disconnect main power window and door lock/unlock switch and rear power window switch RH.
3. Check continuity between main power window and door lock/unlock switch connector (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
	7		2	

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	Ground	Continuity
D7 (A)	5	Ground	No
	7		

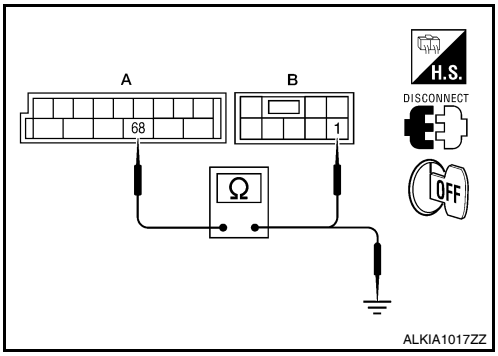
Is the inspection result normal?

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

4. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.

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
		RH	D303 (B)		

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

BCM connector	Terminal	Ground	Continuity
M20 (A)	68		No

Is the inspection result normal?

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

5. CHECK REAR POWER WINDOW SWITCH

Check rear power window switch.
Refer to PWC-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".

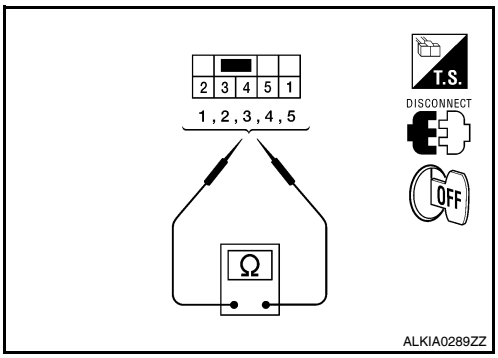
REAR POWER WINDOW SWITCH : Component Inspection

INFOID:0000000003788227

COMPONENT INSPECTION

1. CHECK REAR POWER WINDOW SWITCH

Check rear power window switch.



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

Is the inspection result normal?

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

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

INFOID:0000000003788229

Main Power Window And Door Lock/Unlock Switch

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

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

Is the inspection result normal?

YES >> Main power window and door lock/unlock switch power supply and ground circuit are OK.
NO >> Refer to PWC-21, "POWER WINDOW MAIN SWITCH : Diagnosis Procedure".

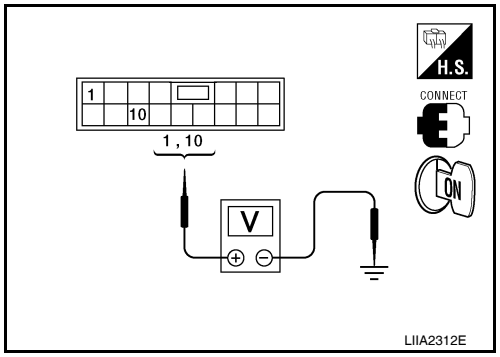
POWER WINDOW MAIN SWITCH : Diagnosis Procedure

INFOID:0000000003788230

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

1. CHECK POWER SUPPLY CIRCUIT

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



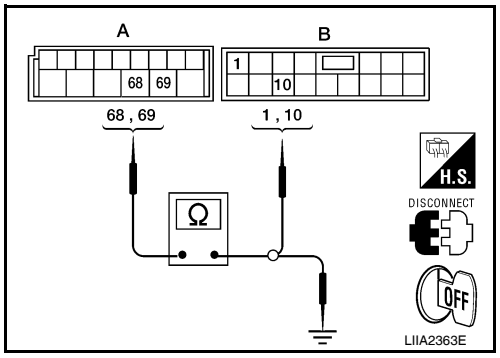
Terminal			Voltage (V) (Approx.)
(+)		(–)	
Main power window and door lock/unlock switch connector	Terminal		
D15	1	Ground	Battery voltage
	10		

Is the measurement value within the specification?

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

2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect BCM and main power window and door lock/unlock switch.
3. Check continuity between BCM connector (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
	69		1	

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

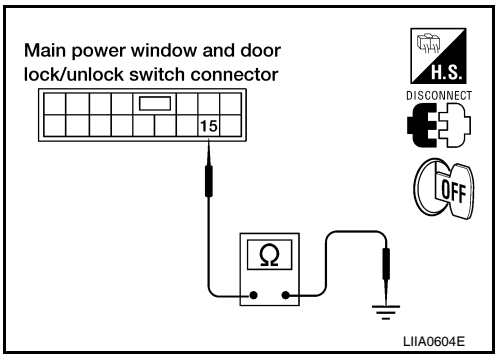
BCM connector	Terminal	Ground	Continuity
M20 (A)	68		No
	69		

Is the inspection result normal?

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

3. CHECK GROUND CIRCUIT

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



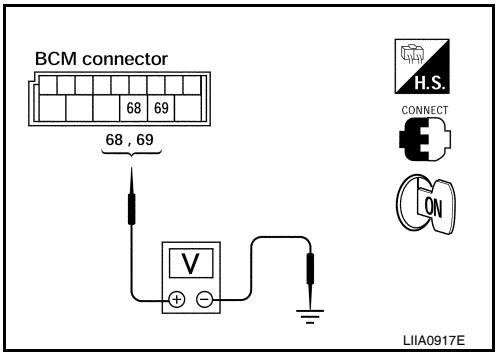
Main power window and door lock/unlock switch connector	Terminal	Ground	Continuity
D15	15		Yes

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.

4. CHECK BCM OUTPUT SIGNAL

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



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

Is the measurement value within the specification?

YES >> 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

INFOID:0000000003788231

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

FRONT POWER WINDOW SWITCH : Component Function Check

INFOID:0000000003788232

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-23, "FRONT POWER WINDOW SWITCH : Diagnosis Procedure".

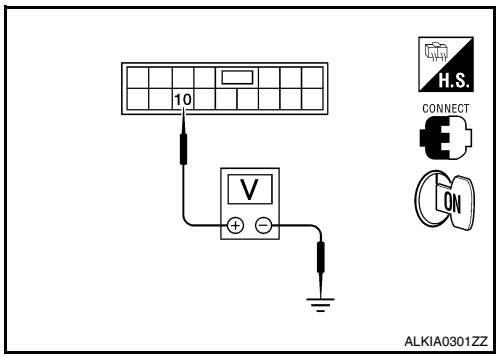
FRONT POWER WINDOW SWITCH : Diagnosis Procedure

INFOID:0000000003788233

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

1. CHECK POWER SUPPLY CIRCUIT

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



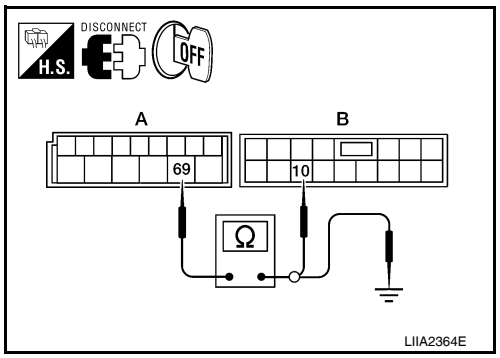
Terminal			Voltage (V) (Approx.)
(+)		(–)	
Power window and door lock/ unlock switch RH connector	Terminal		
D105	10	Ground	Battery voltage

Is the measurement value within the specification?

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

2. CHECK HARNESS CONTINUITY

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

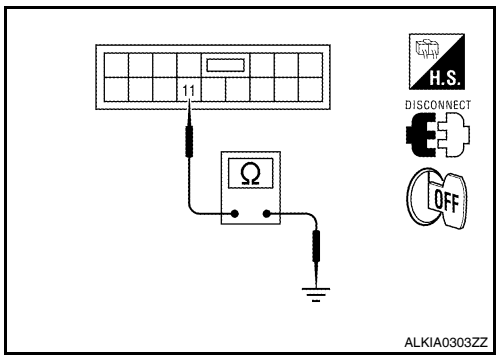
BCM connector	Terminal	Ground	Continuity
M20 (A)	69		No

Is the inspection result normal?

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

3. CHECK GROUND CIRCUIT

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



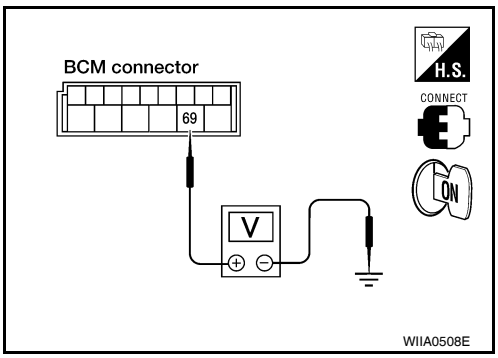
Power window and door lock/unlock switch RH	Terminal	Ground	Continuity
D105	11		Yes

Is the inspection result normal?

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

4. CHECK BCM OUTPUT SIGNAL

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



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

Is the measurement value within the specification?

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

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

POWER WINDOW MOTOR

DRIVER SIDE

DRIVER SIDE : Description

INFOID:0000000003788234

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

DRIVER SIDE : Component Function Check

INFOID:0000000003788235

1. CHECK POWER WINDOW MOTOR CIRCUIT

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

Is the inspection result normal?

YES >> Front power window motor LH is OK.
NO >> Refer to PWC-25, "DRIVER SIDE : Diagnosis Procedure".

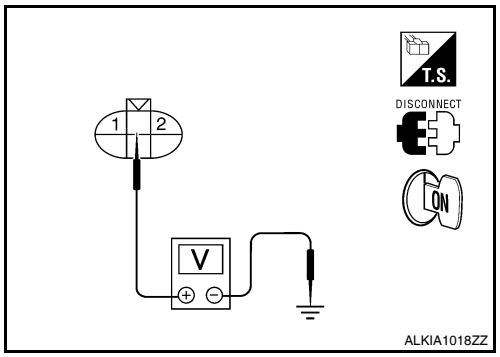
DRIVER SIDE : Diagnosis Procedure

INFOID:0000000003788236

Front Power Window Motor LH Circuit Check

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

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



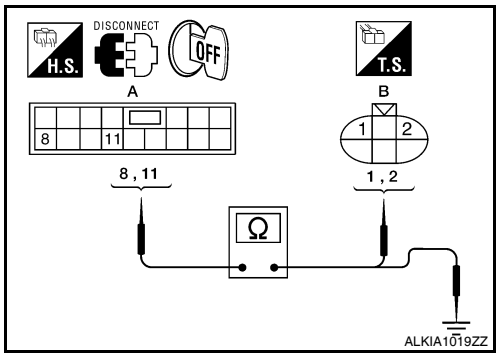
Terminal			Main power window and door lock/unlock switch condition	Voltage (V) (Approx.)
(+)		(–)		
Power window motor LH connector	Terminal			
D9	2	Ground	UP	Battery voltage
			DOWN	0
	1		UP	0
			DOWN	Battery voltage

Is the measurement value within the specification?

YES >> GO TO 2
NO >> Replace main power window and door lock/unlock switch. Refer to PWC-133, "Removal and Installation".

2. CHECK HARNESS CONTINUITY

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



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

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	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 GW-18, "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
(+)	(–)	
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".

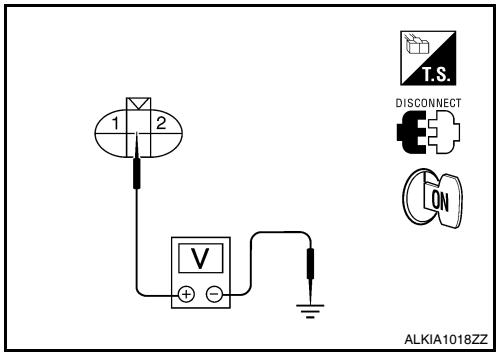
PASSENGER SIDE : Diagnosis Procedure

INFOID:0000000003788240

Front Power Window Motor RH Circuit Check

1. CHECK FRONT POWER WINDOW SWITCH RH OUTPUT SIGNAL

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



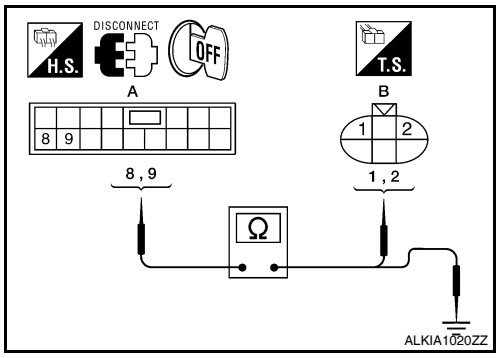
Terminal			Front power window motor RH condition	Voltage (V) (Approx.)
(+)		(–)		
Front power window motor RH connector	Terminal			
D104	2	Ground	UP	Battery voltage
			DOWN	0
	1		UP	0
			DOWN	Battery voltage

Is the measurement value within the specification?

YES >> GO TO 2
NO >> Replace power window and door lock/unlock switch RH. Refer to PWC-134, "Removal and Installation".

2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect power window and door lock/unlock switch RH.
3. Check continuity between power window and door lock/unlock switch RH connector (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
	9		1	

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		

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 GW-18, "Removal and Installation".

PASSENGER SIDE : Component Inspection

INFOID:0000000003788241

COMPONENT INSPECTION

1. CHECK FRONT POWER WINDOW MOTOR RH

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

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

Is the inspection result normal?

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

REAR LH

REAR LH : Description

INFOID:0000000003788242

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

REAR LH : Component Function Check

INFOID:0000000003788243

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"

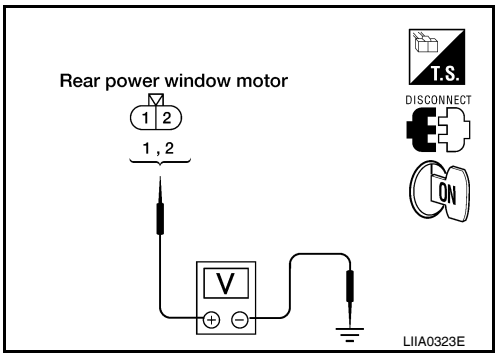
REAR LH : Diagnosis Procedure

INFOID:0000000003788244

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.



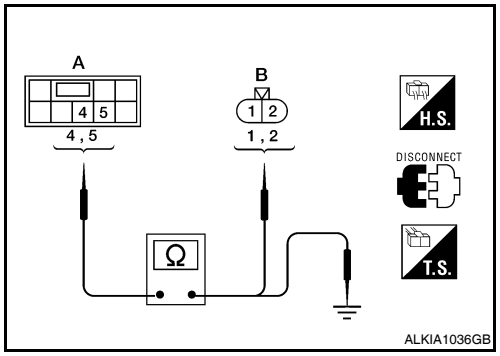
Terminal			Window condition	Voltage (V) (Approx.)
(+)		(–)		
Rear power window motor LH connector	Terminal			
D204	1	Ground	UP	Battery voltage
			DOWN	0
	2		UP	0
			DOWN	Battery voltage

Is the measurement value within the specification?

YES >> GO TO 2
NO >> Check rear power window switch LH. Refer to PWC-18, "REAR POWER WINDOW SWITCH : Component Function Check".

2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect rear power window switch LH.
3. Check continuity between rear power window switch LH connector (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
	4		1	

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

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

Is the inspection result normal?

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

3. CHECK REAR POWER WINDOW MOTOR LH

Check rear power window motor LH.
Refer to PWC-29, "REAR LH : Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".
NO >> Replace rear power window motor LH. Refer to GW-22, "Rear Door Glass Regulator Assembly".

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
(+)	(–)	
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

INFOID:0000000003788246

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

REAR RH : Component Function Check

INFOID:0000000003788247

1. CHECK REAR POWER WINDOW MOTOR RH CIRCUIT

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

Is the inspection result normal?

YES >> Rear power window motor RH is OK.
NO >> Refer to PWC-30, "REAR RH : Diagnosis Procedure".

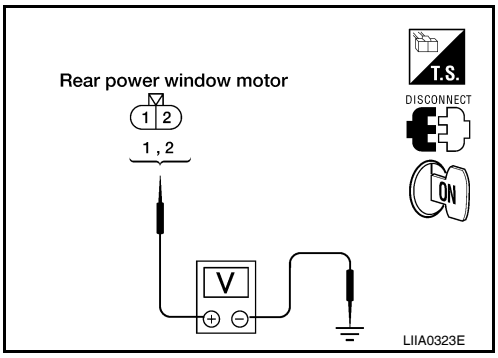
REAR RH : Diagnosis Procedure

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.
3. Check voltage between rear power window motor RH connector and ground.



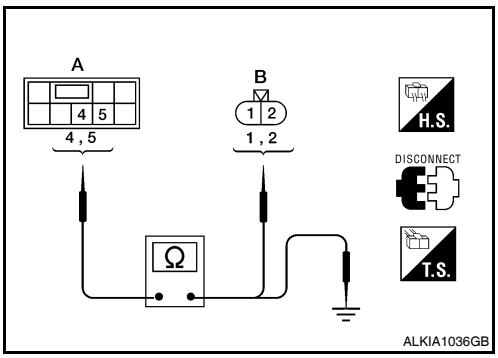
Terminal			Rear power window switch RH condition	Voltage (V) (Approx.)
(+)		(–)		
Rear power window motor RH connector	Terminal			
D304	1	Ground	UP	Battery voltage
			DOWN	0
	2		UP	0
			DOWN	Battery voltage

Is the measurement value within the specification?

YES >> GO TO 2
NO >> Check rear power window switch RH. Refer to PWC-18, "REAR POWER WINDOW SWITCH : Component Function Check".

2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect rear power window switch RH.
3. Check continuity between rear power window switch RH connector (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
	4		1	

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

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

Is the inspection result normal?

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

3. CHECK REAR POWER WINDOW MOTOR RH

Check rear power window motor RH.
Refer to PWC-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".

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?

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

Is the inspection result normal?

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

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"

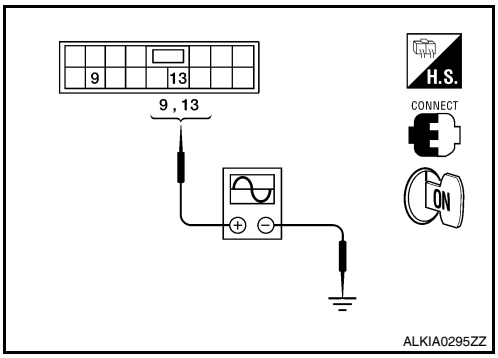
DRIVER SIDE : Diagnosis Procedure

INFOID:0000000003788252

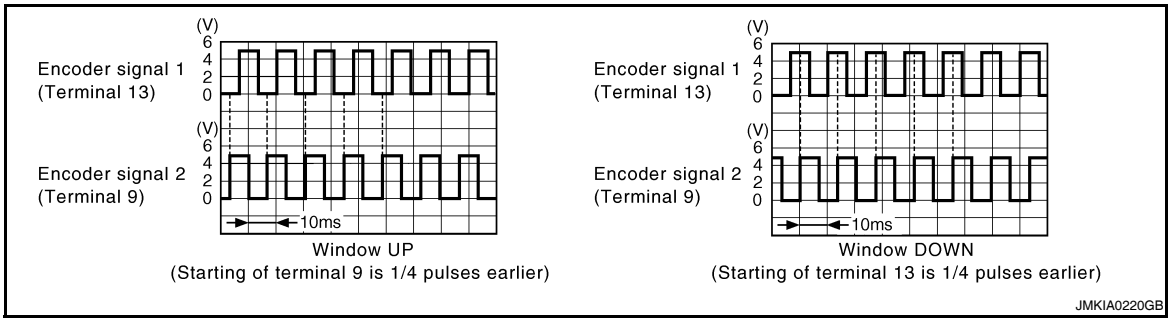
Encoder Circuit Check

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.



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

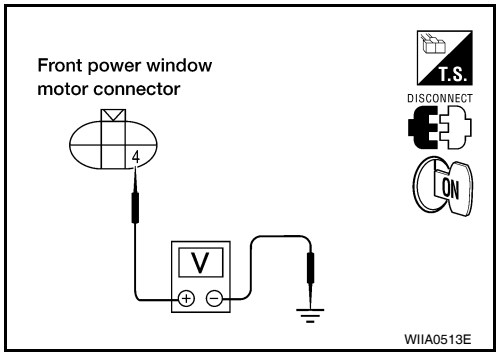


Is the inspection result normal?

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

2. CHECK FRONT POWER WINDOW MOTOR LH POWER SUPPLY

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



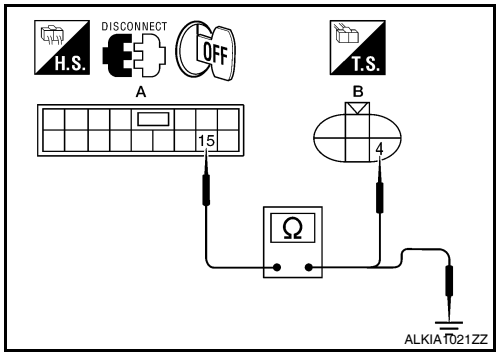
Terminal			Voltage (V) (Approx.)
(+)		(–)	
Front power window motor LH connector	Terminal		
D9	4	Ground	10

Is the measurement value within the specification?

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

3. CHECK HARNESS CONTINUITY 1

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

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

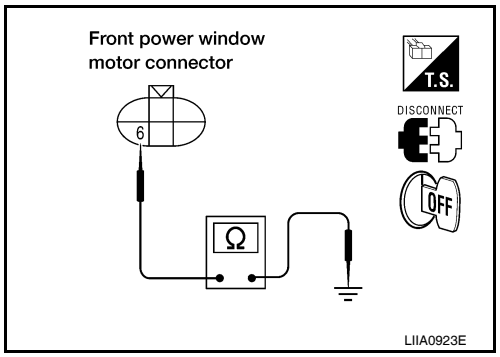
Main power window and door lock/unlock switch connector	Terminal	Ground	Continuity
D7 (A)	15		No

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.

4. CHECK GROUND CIRCUIT

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



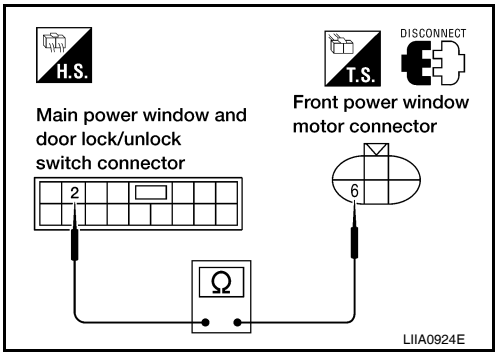
Front power window motor LH connector	Terminal	Ground	Continuity
D9	6		Yes

Is the inspection result normal?

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

5. CHECK HARNESS CONTINUITY 2

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



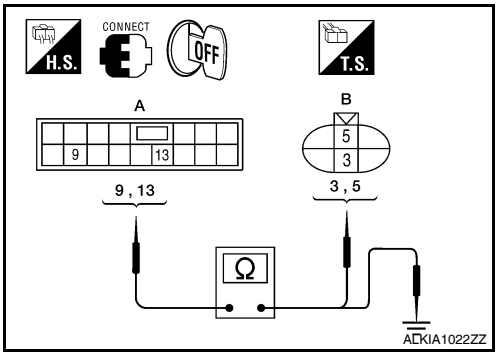
Main power window and door lock/unlock switch connector	Terminal	Front power window motor LH connector	Terminal	Continuity
D7	2	D9	6	Yes

Is the inspection result normal?

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

6. CHECK HARNESS CONTINUITY 3

1. Disconnect main power window and door lock/unlock switch.
2. Check continuity between main power window and door lock/unlock switch connector (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
	13		3	

3. 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
D7 (A)	9	Ground	No
	13		

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

INFOID:0000000003788253

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

PASSENGER SIDE : Component Function Check

INFOID:0000000003788254

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?

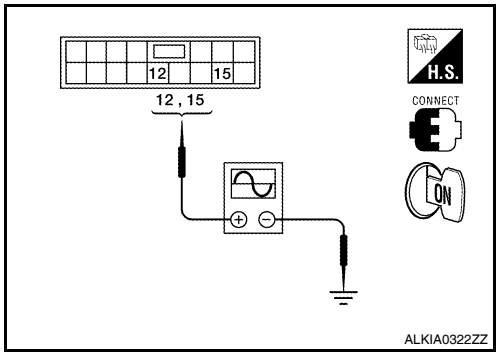
YES >> Encoder operation is OK.
NO >> Refer to PWC-34, "PASSENGER SIDE : Diagnosis Procedure".

PASSENGER SIDE : Diagnosis Procedure

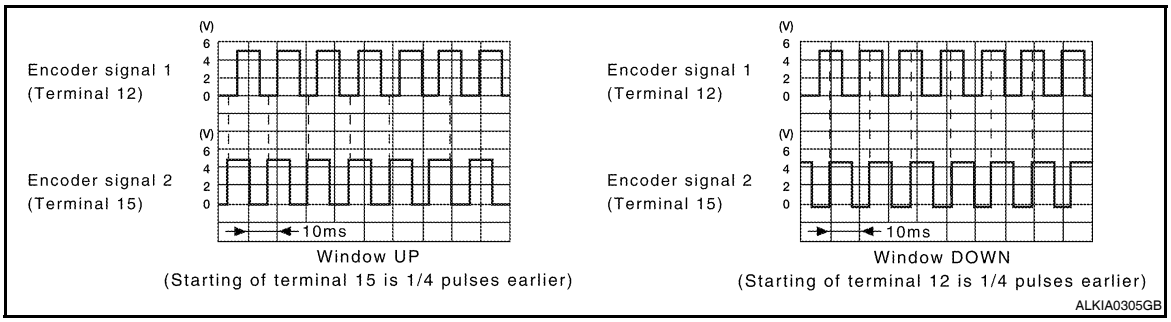
INFOID:0000000003788255

1. CHECK ENCODER SIGNAL

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



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

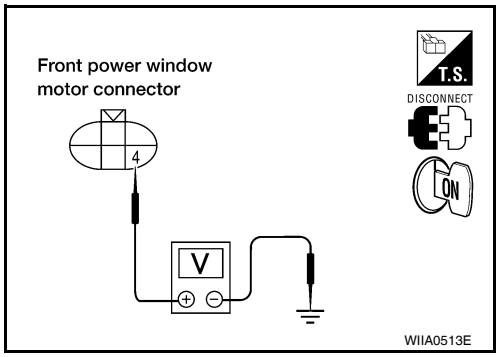


Is the inspection result normal?

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

2. CHECK FRONT POWER WINDOW MOTOR RH POWER SUPPLY

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



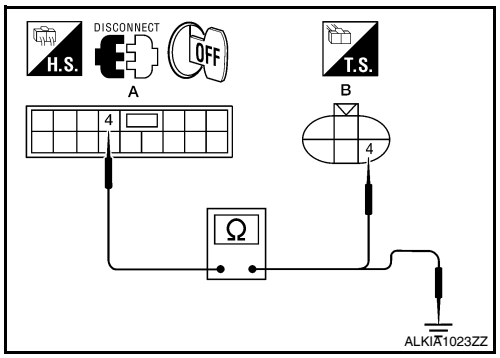
Terminal			Voltage (V) (Approx.)
(+)		(–)	
Front power window motor RH connector	Terminal		
D105	4	Ground	10

Is the measurement value within the specification?

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

3. CHECK HARNESS CONTINUITY 1

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

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

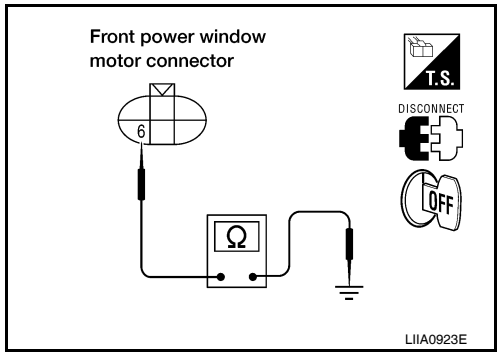
Is the inspection result normal?

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

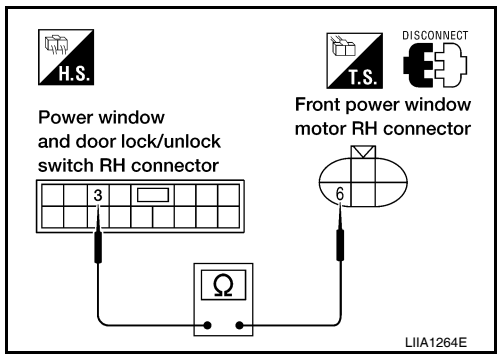
Is the inspection result normal?

YES >> GO TO 6

NO >> GO TO 5

5. CHECK HARNESS CONTINUITY 2

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



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

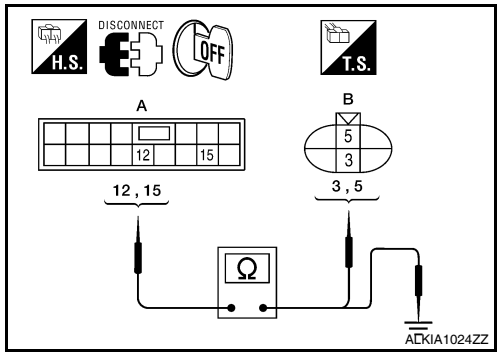
Is the inspection result normal?

YES >> Replace power window and door lock/unlock switch RH. Refer to PWC-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
	15		5	

3. 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
	15		

Is the inspection result normal?

YES >> Replace front power window motor RH. Refer to GW-18, "Removal and Installation".
NO >> Repair or replace harness.

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:0000000003788257

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-38, "DRIVER SIDE : Diagnosis Procedure"

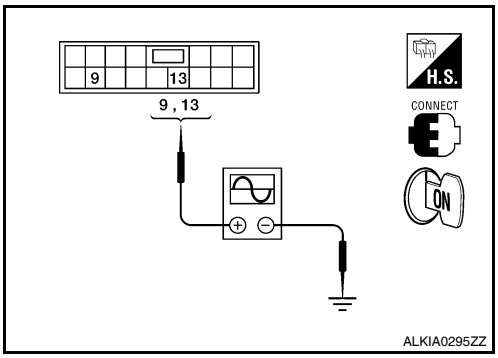
DRIVER SIDE : Diagnosis Procedure

INFOID:0000000003788258

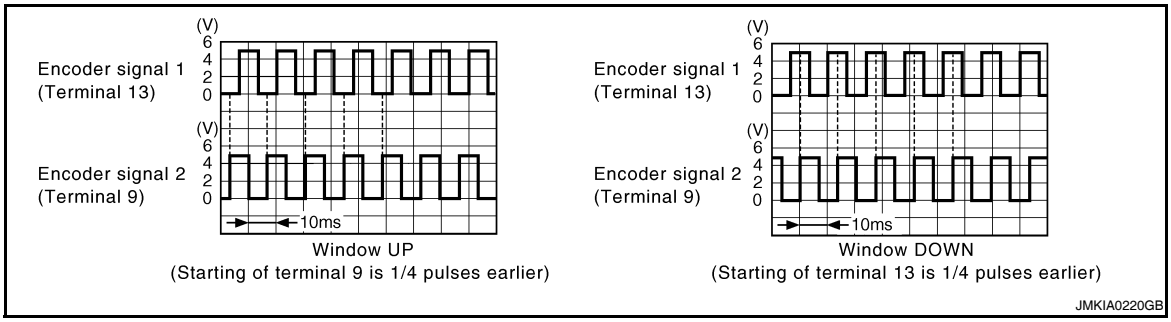
Encoder Circuit Check

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.



Terminals			Signal (Reference value)
(+)		(–)	
Main power window and door lock/unlock switch connector	Terminal		
D15	9	Ground	Refer to following signal
	13		

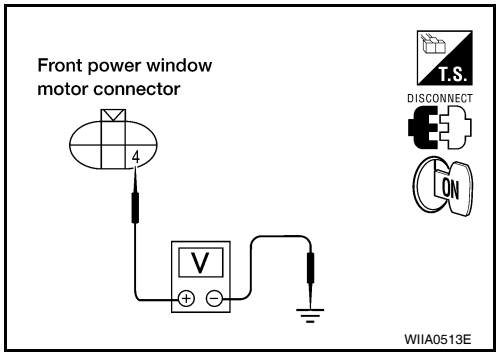


Is the inspection result normal?

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

2. CHECK FRONT POWER WINDOW MOTOR LH POWER SUPPLY

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



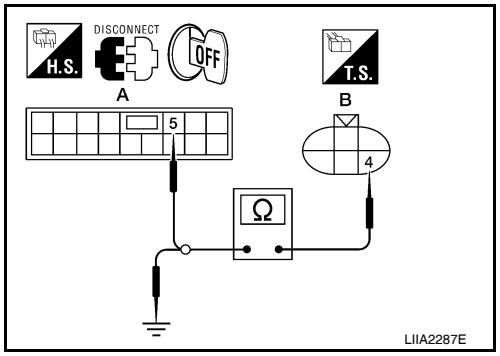
Terminal			Voltage (V) (Approx.)
(+)		(–)	
Front power window motor LH connector	Terminal		
D9	4	Ground	10

Is the measurement value within the specification?

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

3. CHECK HARNESS CONTINUITY 1

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

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

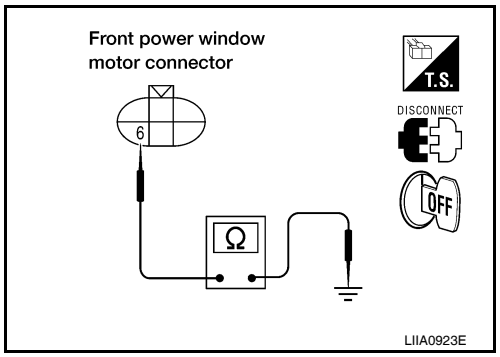
Main power window and door lock/unlock switch connector	Terminal	Ground	Continuity
D9 (B)	4		No

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.

4. CHECK GROUND CIRCUIT

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



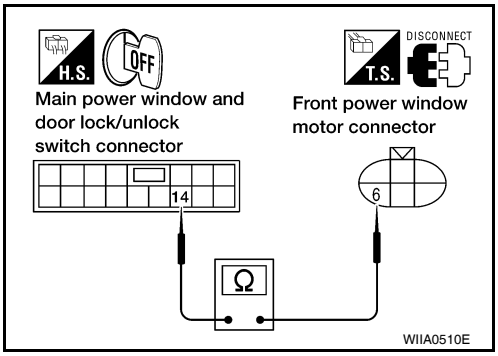
Front power window motor LH connector	Terminal	Ground	Continuity
D9	6		Yes

Is the inspection result normal?

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

5. CHECK HARNESS CONTINUITY 2

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



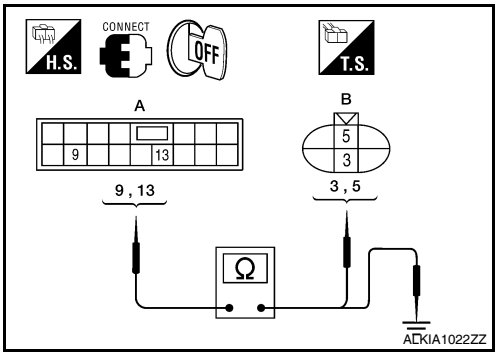
Main power window and door lock/unlock switch connector	Terminal	Front power window motor LH connector	Terminal	Continuity
D15	14	D9	6	Yes

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.

6. CHECK HARNESS CONTINUITY 3

1. Disconnect main power window and door lock/unlock switch.
2. Check continuity between main power window and door lock/unlock switch connector (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
	13		3	

3. 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
D15 (A)	9	Ground	No
	13		

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

INFOID:0000000003788259

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

PASSENGER SIDE : Component Function Check

INFOID:0000000003788260

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?

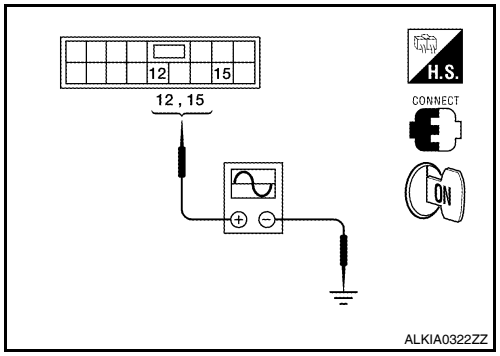
YES >> Encoder operation is OK.
NO >> Refer to PWC-40, "PASSENGER SIDE : Diagnosis Procedure".

PASSENGER SIDE : Diagnosis Procedure

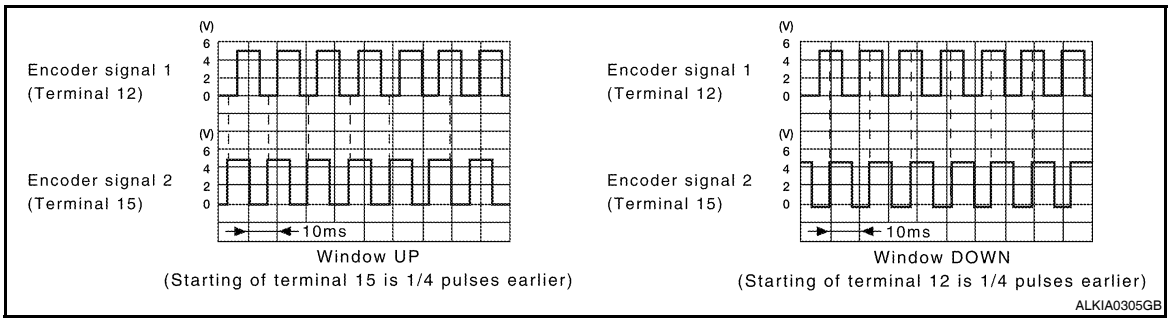
INFOID:0000000003788261

1. CHECK ENCODER SIGNAL

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



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

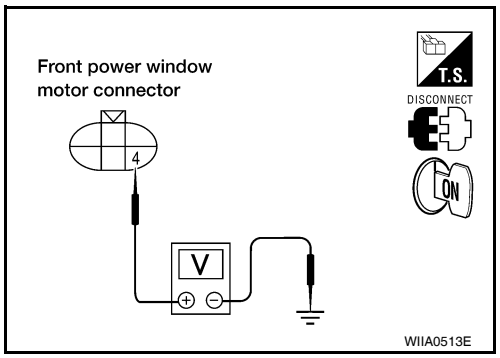


Is the inspection result normal?

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

2. CHECK FRONT POWER WINDOW MOTOR RH POWER SUPPLY

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



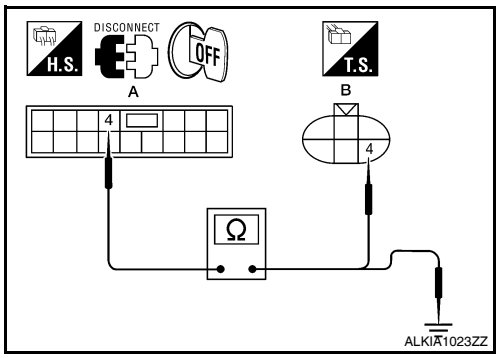
Terminal			Voltage (V) (Approx.)
(+)		(–)	
Front power window motor RH connector	Terminal		
D105	4	Ground	10

Is the measurement value within the specification?

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

3. CHECK HARNESS CONTINUITY 1

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

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

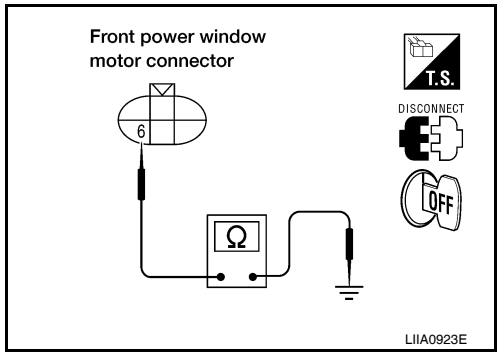
Is the inspection result normal?

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

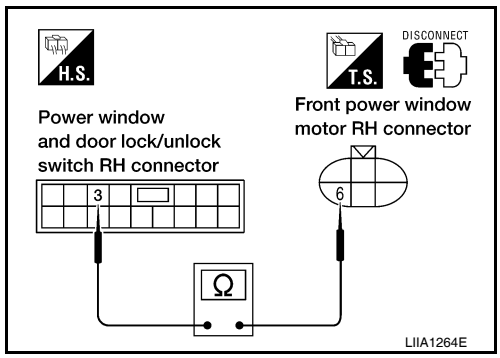
Is the inspection result normal?

YES >> GO TO 6

NO >> GO TO 5

5. CHECK HARNESS CONTINUITY 2

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



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

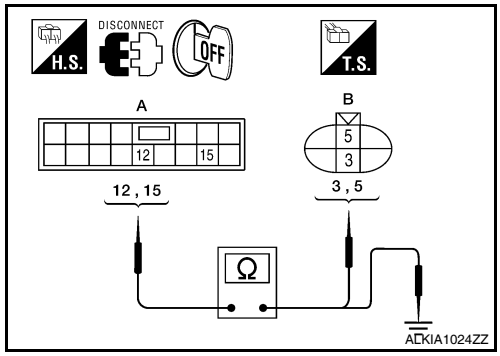
Is the inspection result normal?

YES >> Replace power window and door lock/unlock switch RH. Refer to PWC-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
	15		5	

3. 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
	15		

Is the inspection result normal?

YES >> Replace front power window motor RH. Refer to GW-18, "Removal and Installation".
NO >> Repair or replace harness.

DOOR SWITCH

Description

INFOID:0000000003788262

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

Component Function Check

INFOID:0000000003788263

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
	CLOSE	: OFF

Is the inspection result normal?

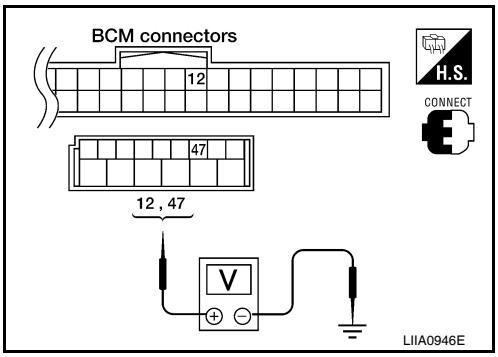
YES >> Front door switch circuit is OK.
NO >> Refer to PWC-44, "Diagnosis Procedure (Crew Cab)".

Diagnosis Procedure (Crew Cab)

INFOID:0000000003788264

1. CHECK FRONT DOOR SWITCH

Check voltage between BCM connector and ground.



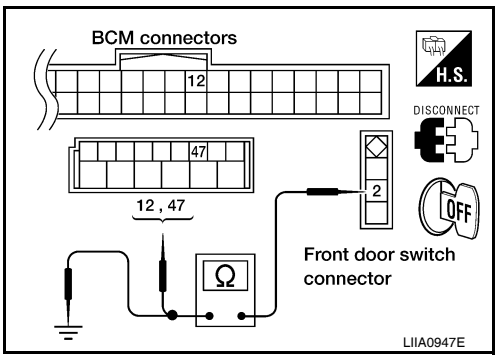
Terminals			Door condition		Voltage (V) (Approx.)
(+)		(–)			
BCM connector	Terminal				
M18	12	Ground	Front door RH	OPEN	0
				CLOSE	Battery voltage
M19	47		Front door LH	OPEN	0
				CLOSE	Battery voltage

Is the measurement value within the specification?

YES >> Replace BCM. Refer to BCS-53, "Removal and Installation".
NO >> GO TO 2

2. CHECK HARNESS CONTINUITY

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



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

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

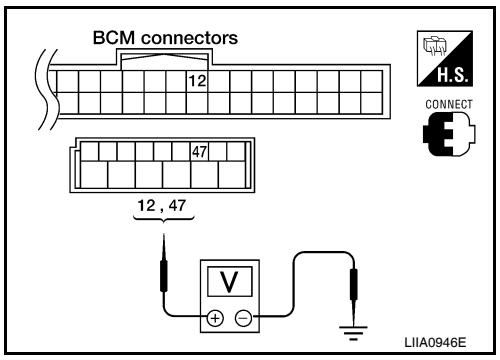
Front door switch connector	Terminal	Ground	Continuity
B8 (LH)	2		No
B108 (RH)			

Is the inspection result normal?

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

3. CHECK BCM OUTPUT SIGNAL

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



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

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 (Crew Cab)".

Is the inspection result normal?

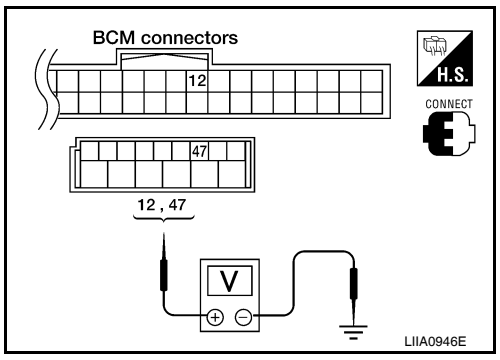
YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".
NO >> Replace front door switch.

Diagnosis Procedure (King Cab)

INFOID:0000000003788265

1. CHECK FRONT DOOR SWITCH

Check voltage between BCM connector and ground.



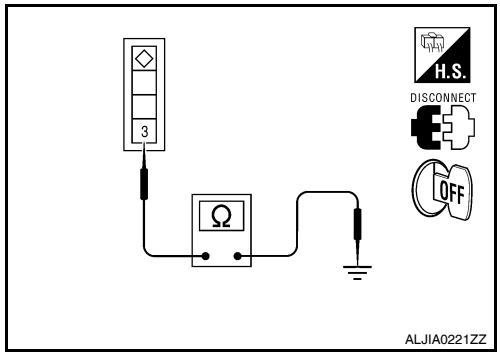
Terminals (+) BCM connector	Terminals (+) Terminal	(–)	Door condition		Voltage (V) (Approx.)
M18	12	Ground	Front door RH	OPEN	0
				CLOSE	Battery voltage
M19	47		Front door LH	OPEN	0
				CLOSE	Battery voltage

Is the measurement value within the specification?

YES >> Replace BCM. Refer to BCS-53, "Removal and Installation".
NO >> GO TO 2

2. CHECK FRONT DOOR SWITCH GROUND CIRCUIT

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



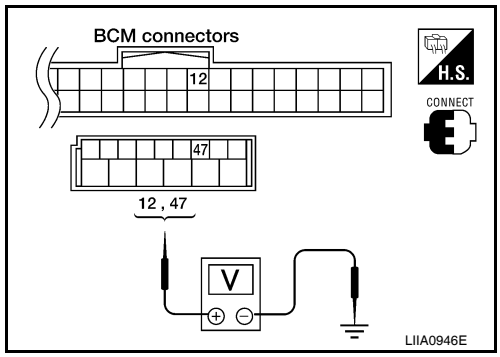
Front door switch connector	Terminal	Ground	Continuity
B8 (LH)	3		Yes
B108 (RH)			

Is the inspection result normal?

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

3. CHECK BCM OUTPUT SIGNAL

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



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

Is the measurement value within the specification?

YES >> GO TO 4
NO >> Replace BCM. Refer to BCS-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?

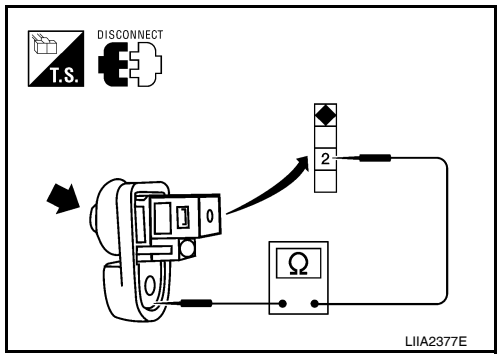
YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".
NO >> Replace front door switch.

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.



Terminal		Condition		Continuity
Front door switch				
2	Ground part of door switch	Front door switch	Pushed	No
			Released	Yes

Is the inspection result normal?

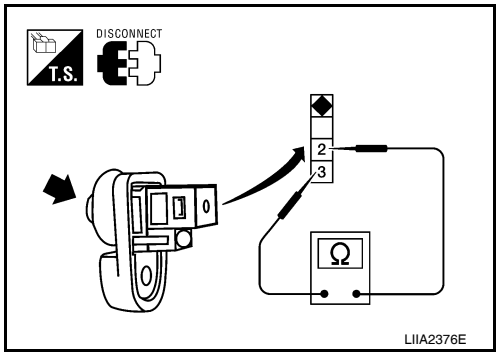
YES >> Inspection End.
NO >> Replace front door switch.

Component Inspection (King Cab)

INFOID:0000000003788267

1. CHECK FRONT DOOR SWITCH

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



Terminal		Condition		Continuity
Front door switch				
2	3	Front door switch	Pushed	No
			Released	Yes

Is the inspection result normal?

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

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

Description

INFOID:0000000003788268

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

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

Is the inspection result normal?

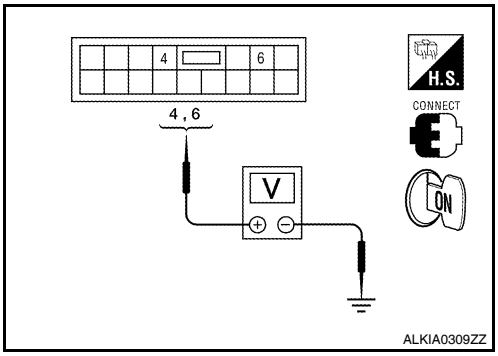
YES >> Key cylinder switch is OK.
NO >> Refer to PWC-48, "Diagnosis Procedure".

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.



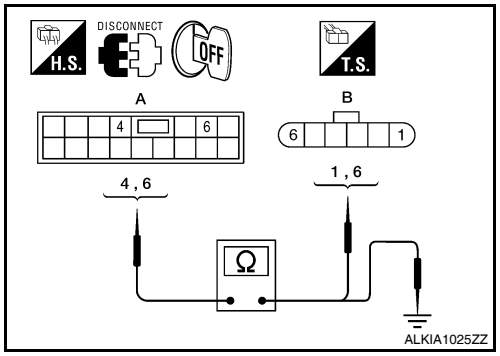
Terminals			Key position	Voltage (V) (Approx.)
(+)		(–)		
Main power window and door lock/unlock switch connector	Terminal			
D7	4	Ground	Lock	0
			Neutral/Unlock	5
	6		Unlock	0
			Neutral/Lock	5

Is the measurement value within the specification?

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

2. CHECK DOOR KEY CYLINDER SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect main power window and door lock/unlock switch and front door lock assembly LH (key cylinder switch).
3. Check continuity between main power window and door lock/unlock switch connector (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 assembly LH (key cylinder switch) connector	Terminal	Continuity
D7 (A)	4	D14 (B)	1	Yes
	6		6	

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

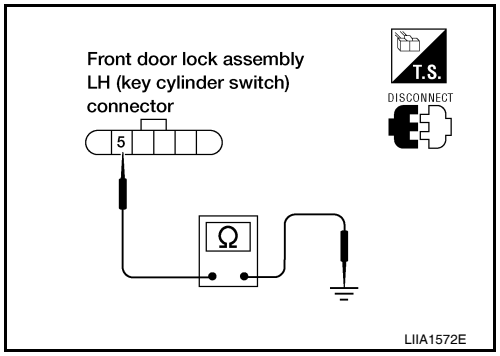
Main power window and door lock/unlock switch connector	Terminal	Ground	Continuity
D7 (A)	4	Ground	No
	6		

Is the inspection result normal?

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

3. CHECK DOOR KEY CYLINDER SWITCH GROUND CIRCUIT

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



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

Is the inspection result normal?

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

4. CHECK DOOR KEY CYLINDER SWITCH

Check door key cylinder switch.
Refer to PWC-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

INFOID:0000000003788271

COMPONENT INSPECTION

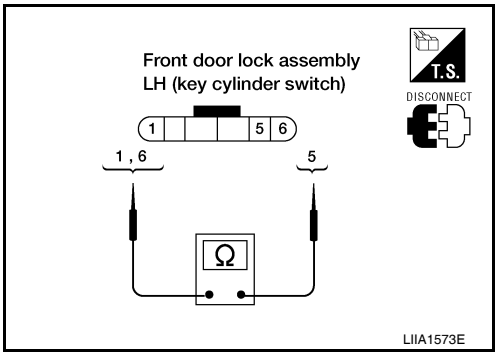
1. CHECK DOOR KEY CYLINDER SWITCH

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

< COMPONENT DIAGNOSIS >

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

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



Is the inspection result normal?

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

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

INFOID:0000000003788273

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
	Neutral / Unlock	: OFF
KEY CYL UN-SW	Unlock	: ON
	Neutral / Lock	: OFF

Is the inspection result normal?

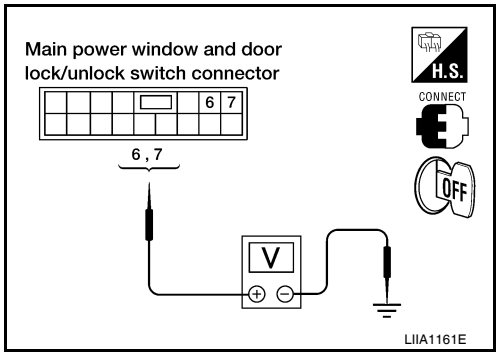
YES >> Key cylinder switch is OK.
NO >> Refer to PWC-51, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000003788274

1. CHECK DOOR KEY CYLINDER SWITCH INPUT SIGNAL

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



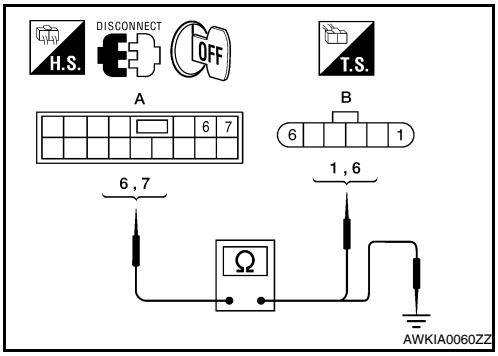
Terminals			Key position	Voltage (V) (Approx.)
(+)		(–)		
Main power window and door lock/unlock switch connector	Terminal			
D15	6	Ground	Lock	0
			Neutral/Unlock	5
	7		Unlock	0
			Neutral/Lock	5

Is the measurement value within the specification?

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

2. CHECK DOOR KEY CYLINDER SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect main power window and door lock/unlock switch and front door lock assembly LH (key cylinder switch).
3. Check continuity between main power window and door lock/unlock switch connector (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 assembly LH (key cylinder switch) connector	Terminal	Continuity
D15 (A)	6	D14 (B)	1	Yes
	7		6	

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

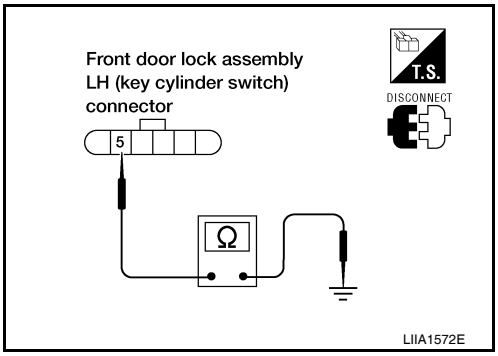
Main power window and door lock/unlock switch connector	Terminal	Ground	Continuity
D15 (A)	6	Ground	No
	7		

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-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

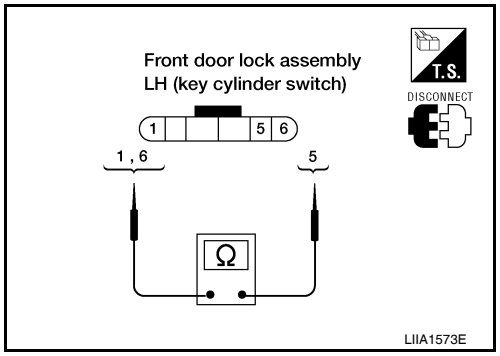
INFOID:0000000003788275

COMPONENT INSPECTION

1. CHECK DOOR KEY CYLINDER SWITCH

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

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



Is the inspection result normal?

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

POWER WINDOW SERIAL LINK
POWER WINDOW MAIN SWITCH

POWER WINDOW MAIN SWITCH : Description

INFOID: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
	UNLOCK	: OFF
CDL UNLOCK SW	LOCK	: OFF
	UNLOCK	: ON

Is the inspection result normal?

YES >> Power window serial link is OK.
NO >> Refer to PWC-54, "POWER WINDOW MAIN SWITCH : Diagnosis Procedure".

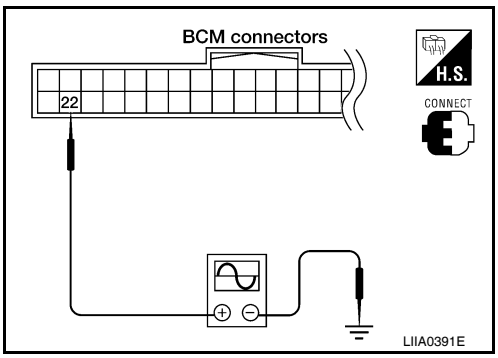
POWER WINDOW MAIN SWITCH : Diagnosis Procedure

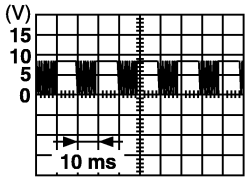
INFOID:0000000003788278

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



Terminal			Signal (Reference value)
(+)		(–)	
BCM connector	Terminal		
M18	22	Ground	 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.
2. 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 connector (B) (Crew Cab) or (C) (King Cab).

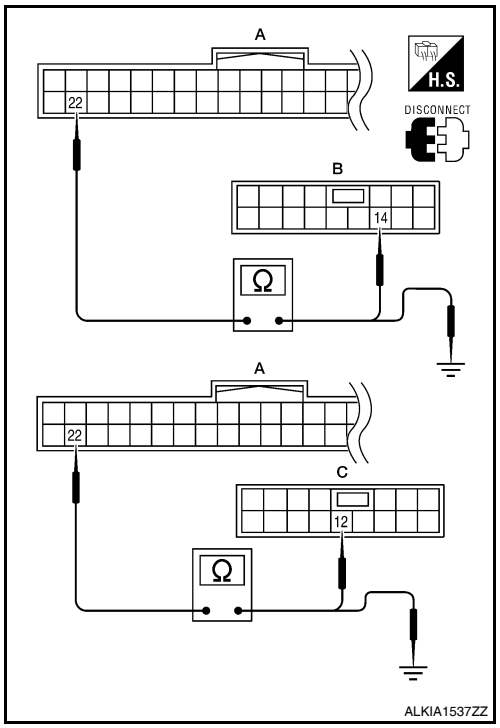
BCM connector	Terminal	Main power window and door lock/unlock switch connector	Terminal	Continuity
M18 (A)	22	D7 (B)	14	Yes
		D15 (C)	12	

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

BCM connector	Terminal	Ground	Continuity
M18 (A)	22		No

Is the inspection result normal?

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



FRONT POWER WINDOW SWITCH

FRONT POWER WINDOW SWITCH : Description

INFOID:0000000003788279

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

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

FRONT POWER WINDOW SWITCH : Component Function Check

INFOID:0000000003788280

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
	UNLOCK	: OFF
CDL UNLOCK SW	LOCK	: OFF
	UNLOCK	: ON

Is the inspection result normal?

YES >> Power window serial link is OK.
NO >> Refer to PWC-56, "FRONT POWER WINDOW SWITCH : Diagnosis Procedure".

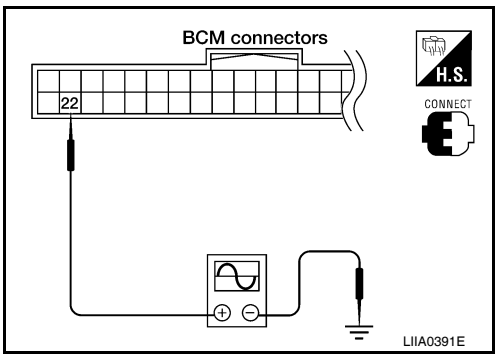
FRONT POWER WINDOW SWITCH : Diagnosis Procedure

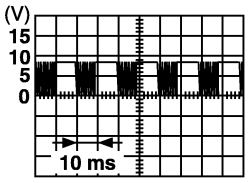
INFOID:0000000003788281

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



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

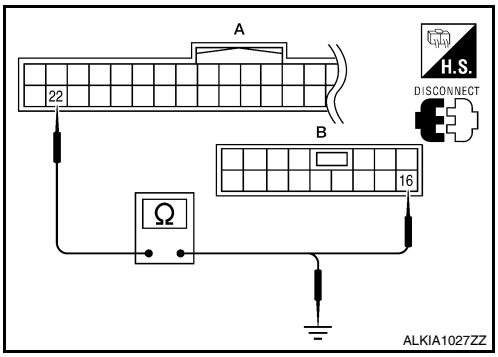
PIIA1297E

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.
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

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

BCM connector	Terminal	Ground	Continuity
M18 (A)	22		No

Is the inspection result normal?

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

NO >> Repair or replace harness.

POWER WINDOW LOCK SWITCH

Description

INFOID:0000000003788282

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.

Does power window lock operate?

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

NO >> Check condition of harness and connector.

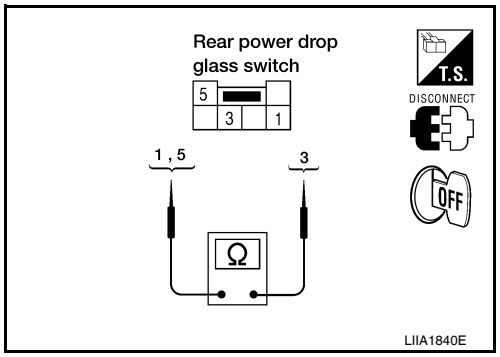
REAR POWER DROP GLASS CIRCUIT CHECK

Rear Power Drop Glass Circuit Inspection

INFOID:0000000003788284

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.



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

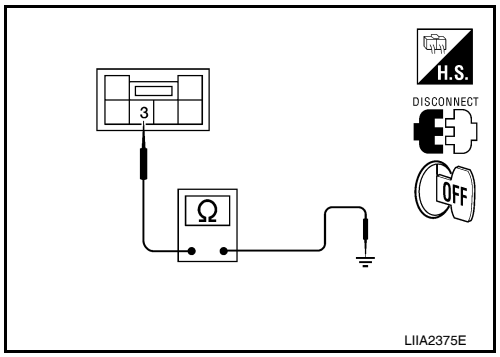
Is the inspection result normal?

YES >> GO TO 2
NO >> Replace rear power drop glass switch. Refer to PWC-135, "Removal and Installation - Power Drop Glass Switch".

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.

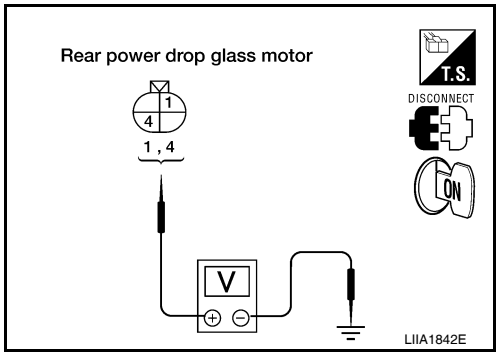


Is the inspection result normal?

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	Terminals		Condition	Voltage (V) (Approx.)
	(+)	(-)		
B80	1	Ground	Up	Battery voltage
			Down	0
	4		Up	0
			Down	Battery voltage

Is the inspection result normal?

YES >> Replace rear power drop glass motor. Refer to GW-13, "Removal and Installation" .
NO >> Repair or replace harness.

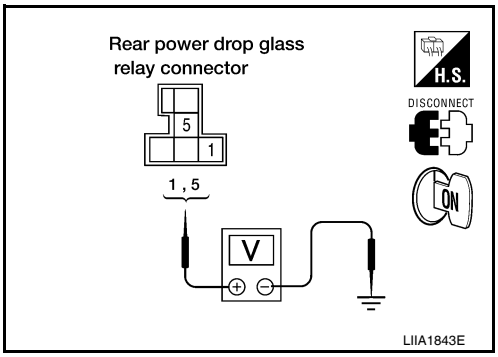
REAR POWER DROP GLASS DOWN RELAY CHECK

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.



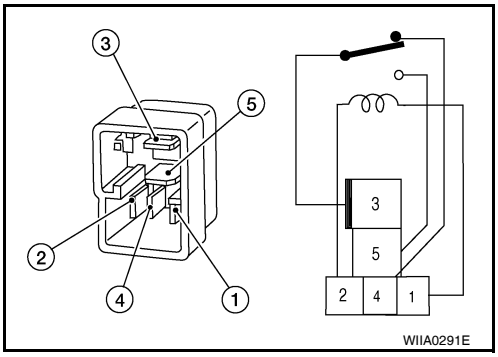
Connector	Terminals		Voltage (V) (Approx.)
	(+)	(-)	
M155	1	Ground	Battery voltage
	5		

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.



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

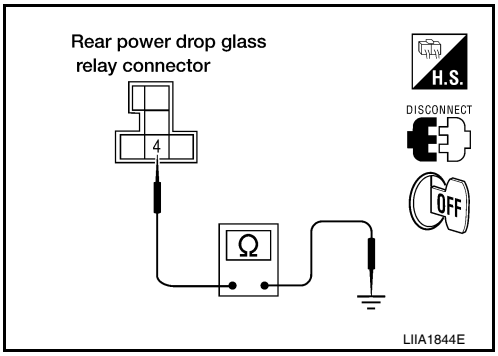
Is the inspection result normal?

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.

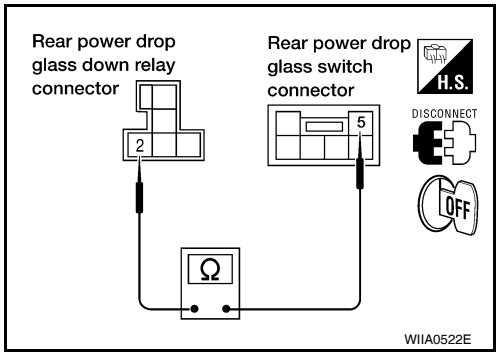


Is the inspection result normal?

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

4. CHECK REAR POWER DROP GLASS DOWN RELAY CIRCUIT

1. Disconnect rear power drop glass switch.
2. 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.

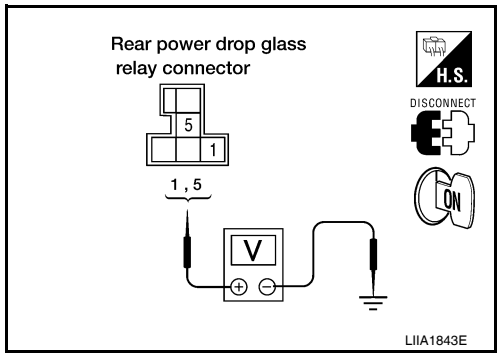
REAR POWER DROP GLASS UP RELAY CHECK

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.



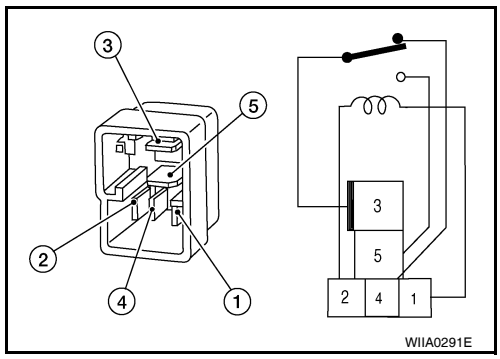
Connector	Terminals		Voltage (V) (Approx.)
	(+)	(-)	
M154	1	Ground	Battery voltage
	5		

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.



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

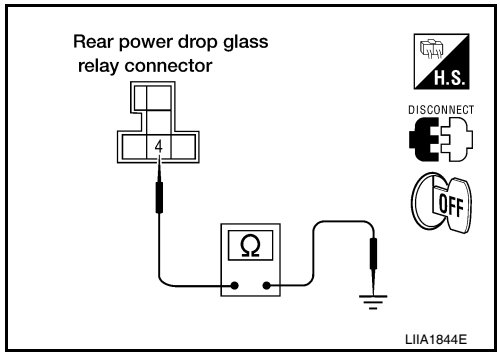
Is the inspection result normal?

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.

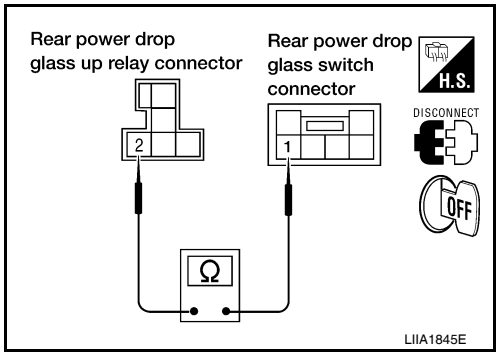


Is the inspection result normal?

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

4. CHECK REAR POWER DROP GLASS UP RELAY CIRCUIT

1. Disconnect rear power drop glass switch.
2. 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.

ECU DIAGNOSIS

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:0000000004160644

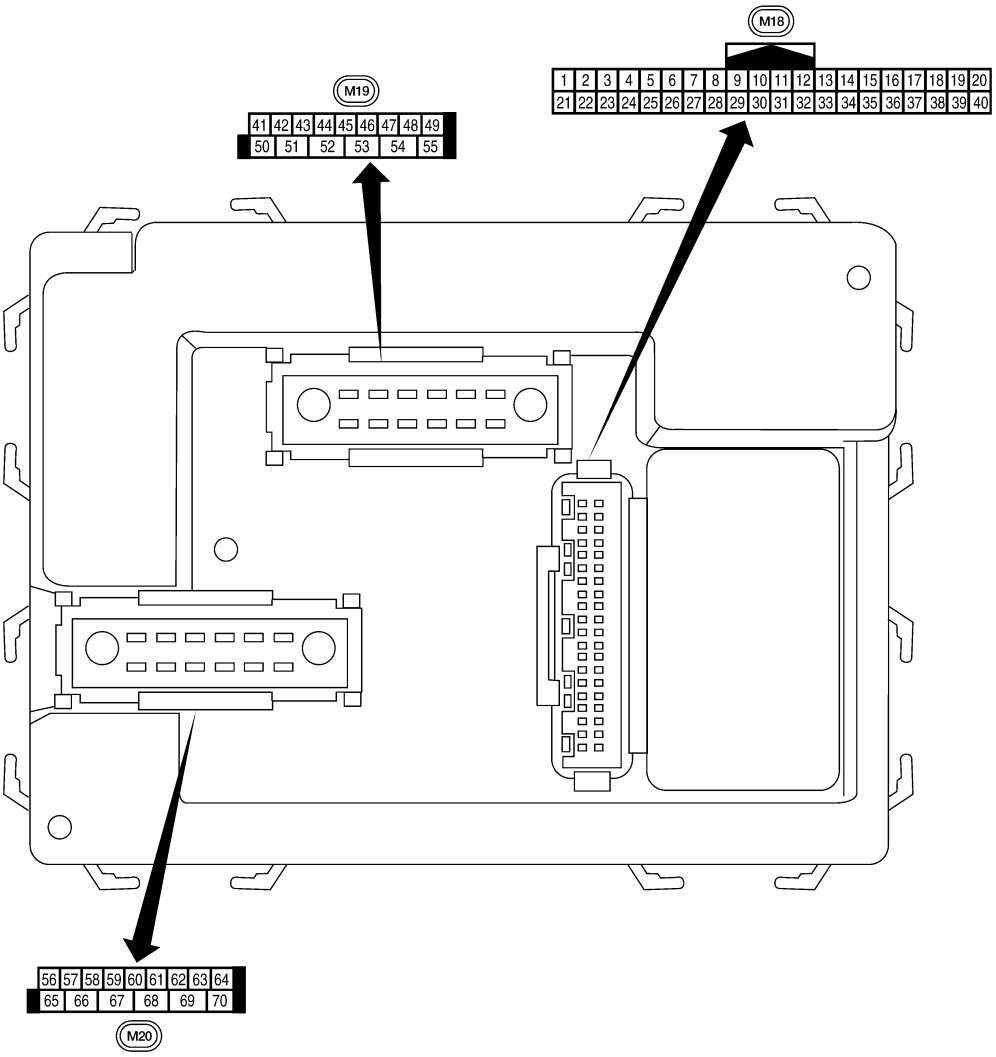
VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition	Value/Status
AIR COND SW	A/C switch OFF	OFF
	A/C switch ON	ON
AUT LIGHT SYS	Outside of the room is dark	OFF
	Outside of the room is bright	ON
AUTO LIGHT SW	Lighting switch OFF	OFF
	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
CDL UNLOCK SW	Door lock/unlock switch does not operate	OFF
	Press door lock/unlock switch to the UNLOCK side	ON
DOOR SW-AS	Front door RH closed	OFF
	Front door RH opened	ON
DOOR SW-DR	Front door LH closed	OFF
	Front door LH opened	ON
DOOR SW-RL	Rear door LH closed	OFF
	Rear door LH opened	ON
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
FR WIPER LOW	Front wiper switch OFF	OFF
	Front wiper switch LO	ON
FR WIPER HI	Front wiper switch OFF	OFF
	Front wiper switch HI	ON
FR WIPER INT	Front wiper switch OFF	OFF
	Front wiper switch INT	ON
FR WIPER STOP	Any position other than front wiper stop position	OFF
	Front wiper stop position	ON
HAZARD SW	When hazard switch is not pressed	OFF
	When hazard switch is pressed	ON
LIGHT SW 1ST	Lighting switch OFF	OFF
	Lighting switch 1st	ON
HEADLAMP SW1	Headlamp switch OFF	OFF
	Headlamp switch 1st	ON

Monitor Item	Condition	Value/Status
HEADLAMP SW2	Headlamp switch OFF	OFF
	Headlamp switch 1st	ON
HI BEAM SW	High beam switch OFF	OFF
	High beam switch HI	ON
H/L WASH SW	**NOTE:** The item is indicated, but not monitored	OFF
IGN ON SW	Ignition switch OFF or ACC	OFF
	Ignition switch ON	ON
IGN SW CAN	Ignition switch OFF or ACC	OFF
	Ignition switch ON	ON
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	1 - 7
KEY ON SW	Key is removed from key cylinder	OFF
	Key is inserted to key cylinder	ON
KEYLESS LOCK	LOCK button of key fob is not pressed	OFF
	LOCK button of key fob is pressed	ON
KEYLESS UNLOCK	UNLOCK button of key fob is not pressed	OFF
	UNLOCK button of key fob is pressed	ON
OIL PRESS SW	• Ignition switch OFF or ACC • Engine running	OFF
	Ignition switch ON	ON
PASSING SW	Other than lighting switch PASS	OFF
	Lighting switch PASS	ON
REAR DEF SW	Rear window defogger switch OFF	OFF
	Rear window defogger switch ON	ON
RKE LOCK AND UN-LOCK	**NOTE:** The item is indicated, but not monitored	OFF
		ON
TAIL LAMP SW	Lighting switch OFF	OFF
	Lighting switch 1ST	ON
TURN SIGNAL L	Turn signal switch OFF	OFF
	Turn signal switch LH	ON
TURN SIGNAL R	Turn signal switch OFF	OFF
	Turn signal switch RH	ON
VEHICLE SPEED	While driving	Equivalent to speedometer reading

Terminal Layout

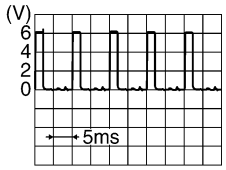
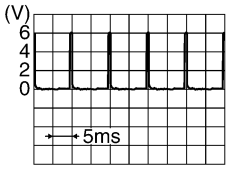
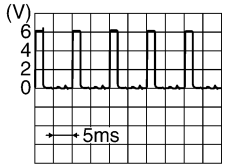
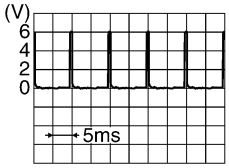
INFOID:0000000004160645

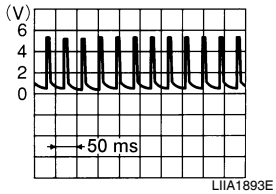
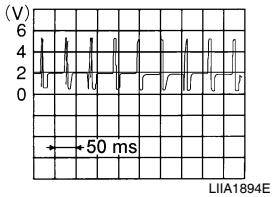
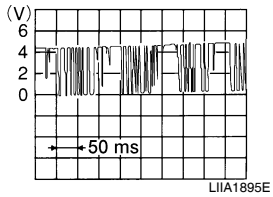
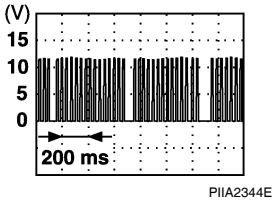


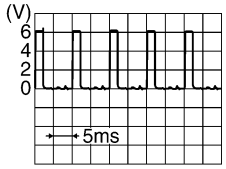
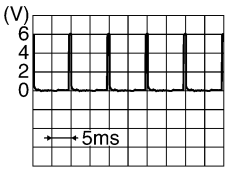
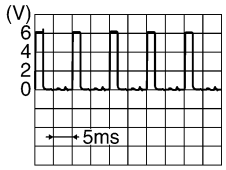
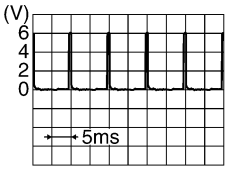
LIIA2443E

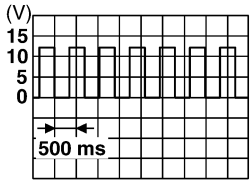
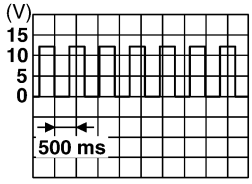
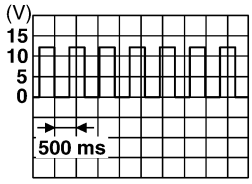
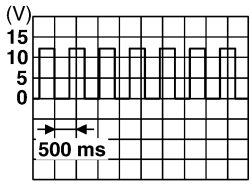
Physical Values

INFOID:0000000004160646

Terminal	Wire color	Signal name	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
1	BR/W	Ignition keyhole illumination	Output	OFF	Door is locked (SW OFF)	Battery voltage
					Door is unlocked (SW OFF)	0V
2	SB	Combination switch input 5	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
3	G/Y	Combination switch input 4	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
4	Y	Combination switch input 3	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
5	G/B	Combination switch input 2	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
6	V	Combination switch input 1				
9	Y/B	Rear window defogger switch (Crew Cab)	Input	ON	Rear window defogger switch ON	0V
					Rear window defogger switch OFF	5V
11	O	Ignition switch (ACC or ON)	Input	ACC or ON	Ignition switch ACC or ON	Battery voltage
12	R/L	Front door switch RH (All)	Input	OFF	ON (open)	0V
		Rear door switch lower RH (King Cab)				
		Rear door switch upper RH (King Cab)			OFF (closed)	Battery voltage
13	GR	Rear door switch RH (Crew Cab)	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
15	L/W	Tire pressure warning check connector	Input	OFF	—	5V

Terminal	Wire color	Signal name	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
18	P	Remote keyless entry receiver and optical sensor (ground)	Output	OFF	—	0V
19	V/W	Remote keyless entry receiver (power supply)	Output	OFF	Ignition switch OFF	
20	G/W	Remote keyless entry receiver (signal)	Input	OFF	Stand-by (keyfob buttons released)	
					When remote keyless entry receiver receives signal from keyfob (keyfob buttons pressed)	
21	G	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF → ON)	Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage.
22	G	BUS	—	—	Ignition switch ON or power window timer operates	
23	G/O	Security indicator lamp	Output	OFF	Goes OFF → illuminates (Every 2.4 seconds)	Battery voltage → 0V
25	BR	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF → ON)	Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage.
27	W/R	Compressor ON signal	Input	ON	A/C switch OFF	5V
					A/C switch ON	0V
28	L/R	Front blower monitor	Input	ON	Front blower motor OFF	Battery voltage
					Front blower motor ON	0V
29	W/B	Hazard switch	Input	OFF	ON	0V
					OFF	5V
31	P/L	Cargo lamp switch	Input	OFF	Cargo lamp switch ON	0
					Cargo lamp switch OFF	Battery voltage

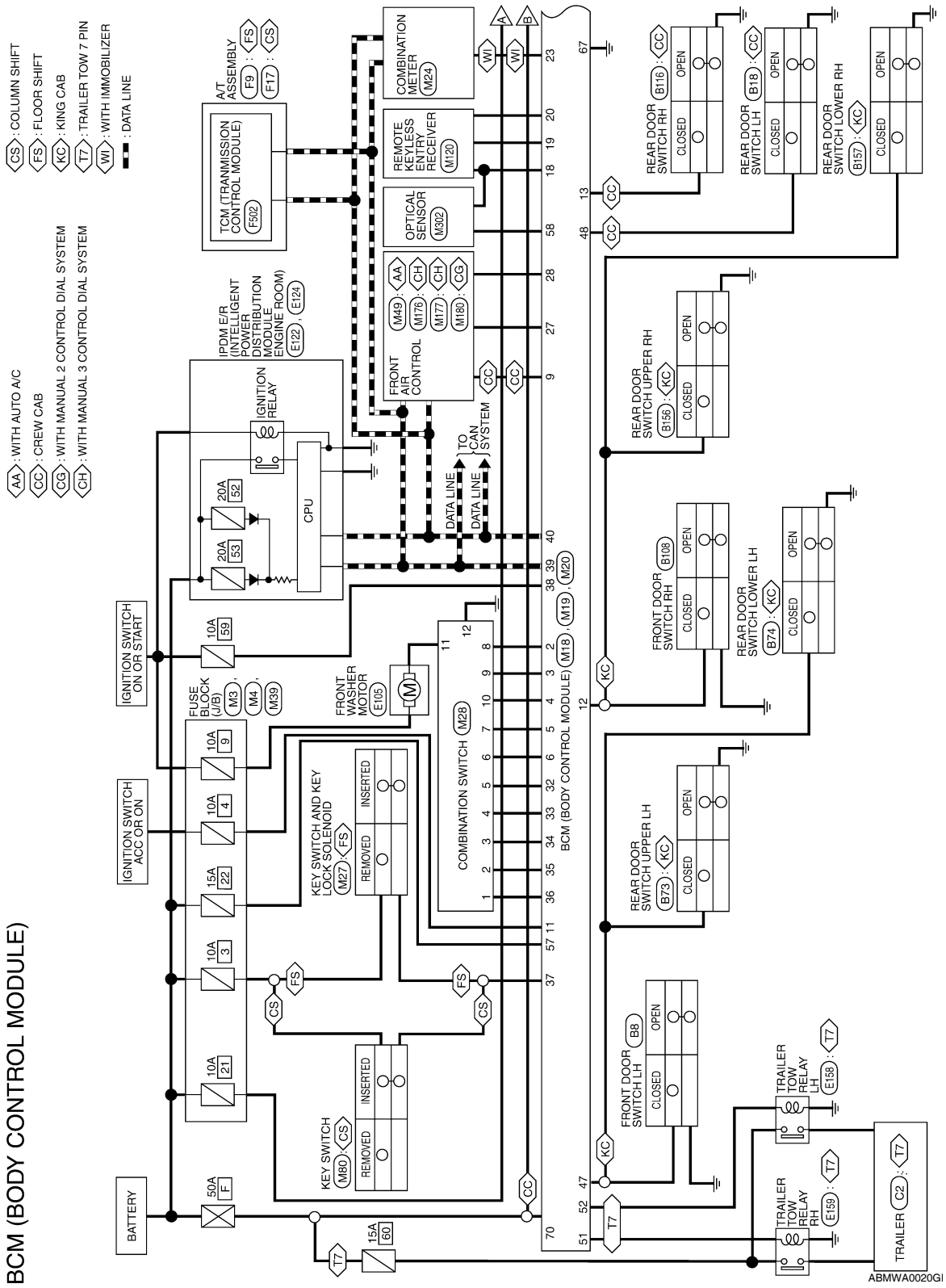
Terminal	Wire color	Signal name	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
32	R/G	Combination switch output 5	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
33	R/Y	Combination switch output 4	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
34	L	Combination switch output 3	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
35	O/B	Combination switch output 2	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
36	R/W	Combination switch output 1				
37	B/R	Key switch and key lock solenoid	Input	OFF	Key inserted	Battery voltage
					Key inserted	0V
38	W/L	Ignition switch (ON)	Input	ON	—	Battery voltage
39	L	CAN-H	—	—	—	—
40	P	CAN-L	—	—	—	—
47	SB	Front door switch LH (All)	Input	OFF	ON (open)	0V
		Rear door switch lower LH (King Cab)				
		Rear door switch upper LH (King Cab)			OFF (closed)	Battery voltage
48	R/Y	Rear door switch LH (Crew Cab)	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
50	R/Y	Cargo bed lamp control	Output	OFF	Cargo lamp switch (ON)	0V
					Cargo lamp switch (OFF)	Battery voltage

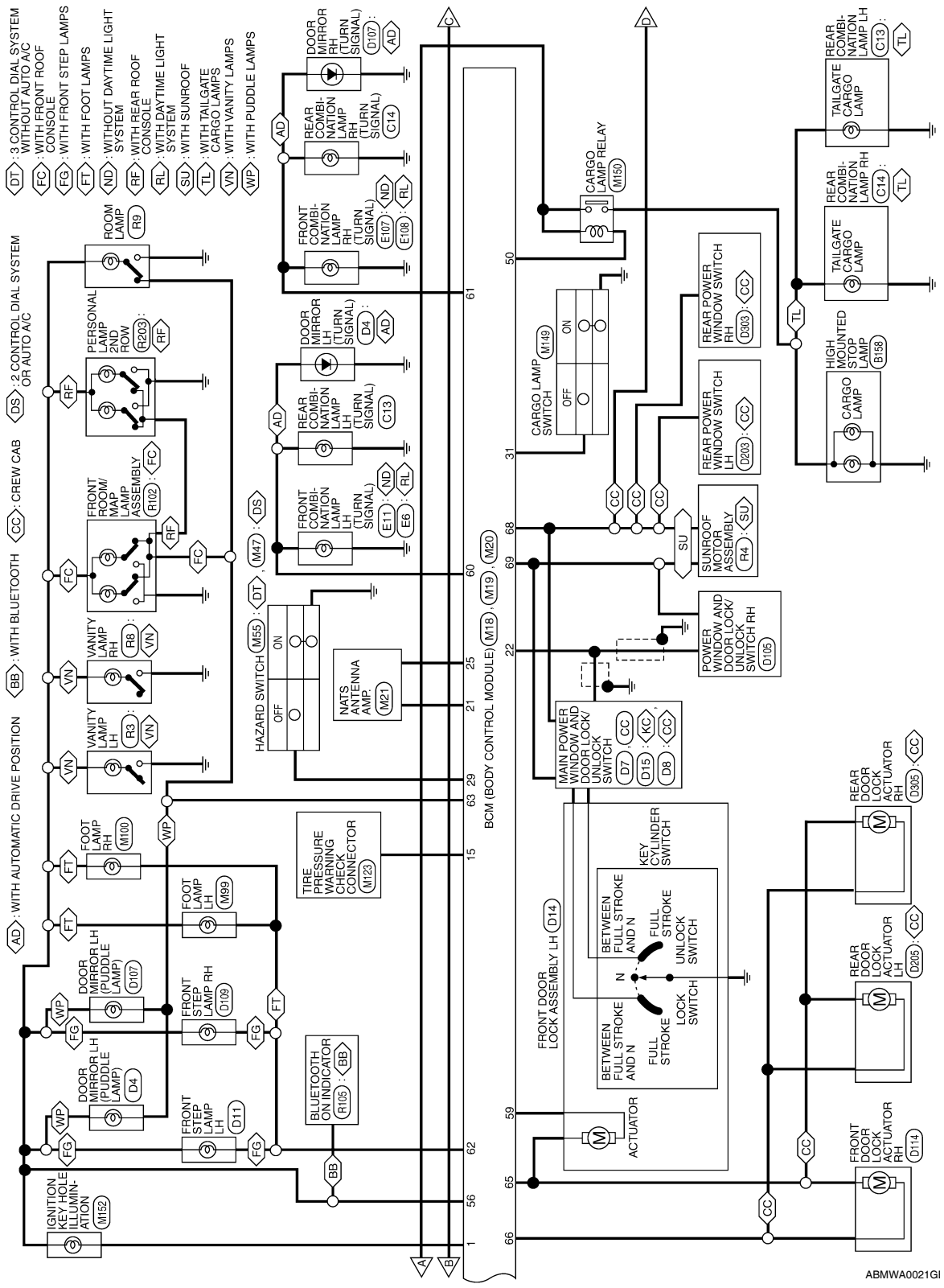
Terminal	Wire color	Signal name	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
51	G/Y	Trailer turn signal (right)	Output	ON	Turn right ON	 SKIA3009J
52	G/B	Trailer turn signal (left)	Output	ON	Turn left ON	 SKIA3009J
56	R/G	Battery saver output	Output	OFF	30 minutes after ignition switch is turned OFF	0V
				ON	—	Battery voltage
57	Y/R	Battery power supply	Input	OFF	—	Battery voltage
58	W/R	Optical sensor	Input	ON	When optical sensor is illuminated	3.1V or more
					When optical sensor is not illuminated	0.6V or less
59	G	Front door lock assembly LH actuator (unlock)	Output	OFF	OFF (neutral)	0V
					ON (unlock)	Battery voltage
60	G/B	Turn signal (left)	Output	ON	Turn left ON	 SKIA3009J
61	G/Y	Turn signal (right)	Output	ON	Turn right ON	 SKIA3009J
62	R/W	Step lamp LH and RH	Output	OFF	ON (any door open)	0V
					OFF (all doors closed)	Battery voltage
63	L	Interior room/map lamp	Output	OFF	Any door switch: ON (open)	0V
					Any door switch: OFF (closed)	Battery voltage
65	V	All door lock actuators (lock)	Output	OFF	OFF (neutral)	0V
					ON (lock)	Battery voltage
66	G/Y	Front door lock actuator RH and rear door lock actuators LH/RH (unlock)	Output	OFF	OFF (neutral)	0V
					ON (unlock)	Battery voltage

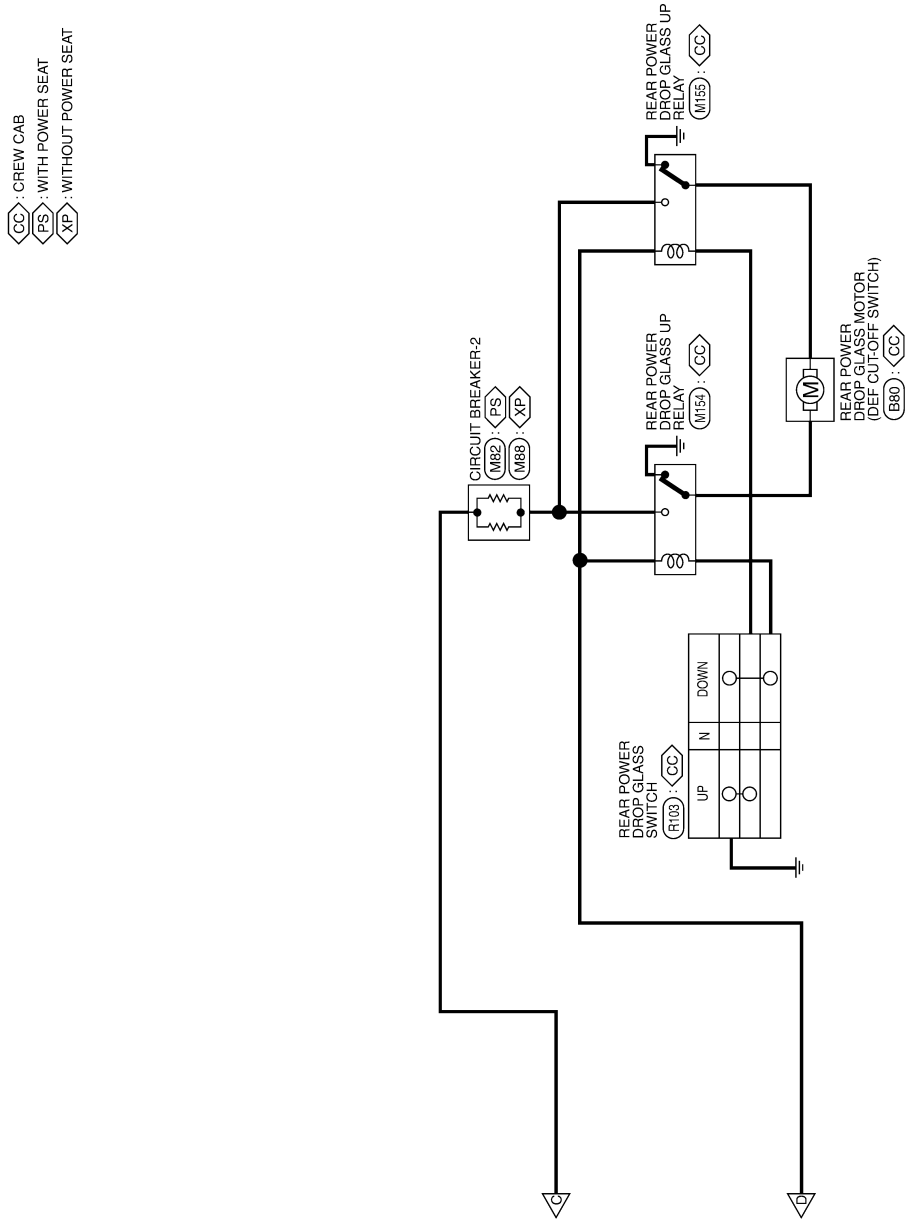
Terminal	Wire color	Signal name	Signal input/ output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
67	B	Ground	Input	ON	—	0V
68	W/L	Power window power supply (RAP)	Output	—	Ignition switch ON	Battery voltage
					Within 45 seconds after ignition switch OFF	Battery voltage
					More than 45 seconds after ignition switch OFF	0V
					When front door LH or RH is open or power window timer operates	0V
69	W/R	Power window power supply	Output	—	—	Battery voltage
70	W/B	Battery power supply	Input	OFF	—	Battery voltage

Wiring Diagram

INFOID:0000000004160647



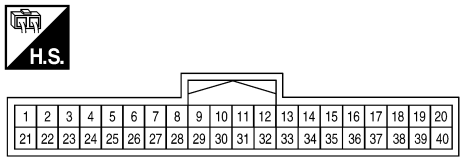

DT : 3 CONTROL DIAL SYSTEM WITHOUT AUTO A/C
FC : WITH FRONT ROOF CONSOLE
FG : WITH FRONT STEP LAMPS
FT : WITH FOOT LAMPS
ND : WITHOUT DAYTIME LIGHT SYSTEM
RF : WITH REAR ROOF CONSOLE
RL : WITH DAYTIME LIGHT SYSTEM
SU : WITH SUNROOF
TL : WITH TAILGATE CARGO LAMPS
VN : WITH VANITY LAMPS
WP : WITH PUDDLE LAMPS
DS : 2 CONTROL DIAL SYSTEM OR AUTO A/C
CC : CREW CAB
BB : WITH BLUETOOTH
AD : WITH AUTOMATIC DRIVE POSITION
ROOM LAMP (R9)
PERSONAL LAMP 2ND ROW (R203)
FRONT ROOM/ MAP LAMP ASSEMBLY (R102)
VANITY LAMP RH (R8)
VANITY LAMP LH (R3)
FOOT LAMP RH (M100)
FOOT LAMP LH (M99)
DOOR MIRROR LH (PUDDLE LAMP) (D107)
DOOR MIRROR LH (PUDDLE LAMP) (D4)
FRONT STEP LAMP RH (D109)
FRONT STEP LAMP LH (D11)
IGNITION KEY HOLE ILLUMIN-ATION (M152)
BLUETOOTH ON INDICATOR (R105)
TIRE PRESSURE WARNING CHECK CONNECTOR (M123)
DOOR MIRROR RH (TURN SIGNAL) (D107)
REAR COMBI-NATION LAMP RH (TURN SIGNAL) (C14)
FRONT COMBI-NATION LAMP RH (TURN SIGNAL) (E107, E108)
DOOR MIRROR LH (TURN SIGNAL) (D4)
REAR COMBI-NATION LAMP LH (TURN SIGNAL) (C13)
FRONT COMBI-NATION LAMP LH (TURN SIGNAL) (E11, E6)
HAZARD SWITCH (M55)
OFF
ON
NATS ANTENNA AMP. (M21)
BCM (BODY CONTROL MODULE) (M18, M19, M20)
CARGO LAMP RELAY (M150)
CARGO LAMP SWITCH (M149)
REAR POWER WINDOW SWITCH RH (D303)
REAR POWER WINDOW SWITCH LH (D203)
SUNROOF MOTOR ASSEMBLY (R4)
POWER WINDOW AND DOOR LOCK/ UNLOCK SWITCH RH (D105)
MAIN POWER WINDOW AND DOOR LOCK/ UNLOCK SWITCH (D7, D15, D8)
TAILGATE CARGO LAMP
REAR COMBI-NATION LAMP LH (C13)
REAR COMBI-NATION LAMP RH (C14)
HIGH MOUNTED STOP LAMP (B158)
CARGO LAMP
KEY CYLINDER SWITCH
BETWEEN FULL STROKE AND N
FULL STROKE
UNLOCK SWITCH
LOCK SWITCH
FRONT DOOR LOCK ASSEMBLY LH (D14)
ACTUATOR
REAR DOOR LOCK ACTUATOR RH (D305)
REAR DOOR LOCK ACTUATOR LH (D205)
FRONT DOOR LOCK ACTUATOR RH (D114)
ABMWA0021GI



ABMWA0022GI

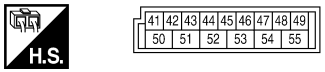
BCM (BODY CONTROL MODULE) CONNECTORS

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



Terminal No.	Color of Wire	Signal Name
1	BR/W	KEY RING OUTPUT
2	SB	INPUT 5
3	G/Y	INPUT 4
4	Y	INPUT 3
5	G/B	INPUT 2
6	V	INPUT 1
7	–	–
8	–	–
9	Y/B	REAR DEFOGGER SW
10	–	–
11	O	ACC SW
12	R/L	DOOR SW (AS)
13	GR	DOOR SW (RR)
14	–	–
15	L/W	TPMS MODE TRIGGER SW
16	–	–
17	–	–
18	P	KEYLESS AND AUTO LIGHT SENSOR GND
19	V/W	KEYLESS TUNER POWER SUPPLY OUTPUT
20	G/W	KEYLESS TUNER SIGNAL
21	G	IMMOBILIZER ANTENNA SIGNAL (CLOCK)
22	G	ANTI-PINCH SERIAL LINK (RX,TX)
23	G/O	SECURITY INDICATOR OUTPUT
24	–	–
25	BR	IMMOBILIZER ANTENNA SIGNAL (RX, TX)
26	–	–
27	W/R	AIRCON SW
28	L/R	BLOWER FAN SW
29	W/B	HAZARD SW
30	–	–
31	P/L	CARGO LAMP SW
32	R/G	OUTPUT 5
33	R/Y	OUTPUT 4
34	L	OUTPUT 3
35	O/B	OUTPUT 2
36	R/W	OUTPUT 1
37	B/R	KEY SW
38	W/L	IGN SW
39	L	CAN-H
40	P	CAN-L

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



Terminal No.	Color of Wire	Signal Name
41	–	–
42	–	–
43	–	–
44	–	–
45	–	–
46	–	–
47	SB	DOOR SW (DR)
48	R/Y	DOOR SW (RL)
49	–	–
50	R/Y	CARGO LAMP OUTPUT
51	G/Y	TRAILER FLASHER OUTPUT (RIGHT)
52	G/B	TRAILER FLASHER OUTPUT (LEFT)
53	–	–
54	–	–
55	–	–

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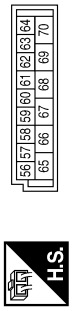
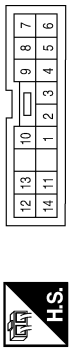
Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
56	R/G	BATTERY SAVER OUTPUT
57	Y/R	BAT (FUSE)
58	W/R	AUTO LIGHT SENSOR INPUT 2
59	G	DOOR UNLOCK OUTPUT (DR)
60	G/B	FLASHER OUTPUT (LEFT)
61	G/Y	FLASHER OUTPUT (RIGHT)
62	R/W	STEP LAMP OUTPUT
63	L	ROOM LAMP
64	–	–
65	V	DOOR LOCK OUTPUT (ALL)
66	G/Y	DOOR UNLOCK OUTPUT (OTHER)
67	B	GND (POWER)
68	W/L	POWER WINDOW POWER SUPPLY (RAP)
69	W/R	POWER WINDOW POWER SUPPLY (BAT)
70	W/B	BAT (F/L)

Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	R/W	INPUT 1
2	O/B	INPUT 2
3	L	INPUT 3
4	R/Y	INPUT 4
5	R/G	INPUT 5
6	V	OUTPUT 1
7	G/B	OUTPUT 2
8	SB	OUTPUT 5
9	G/Y	OUTPUT 4
10	Y	OUTPUT 3
11	V/W	WASHER MOTOR
12	B	GND
13	–	–
14	–	–

ABMIA0028GB

POWER WINDOW MAIN SWITCH

Reference Value (Crew Cab)

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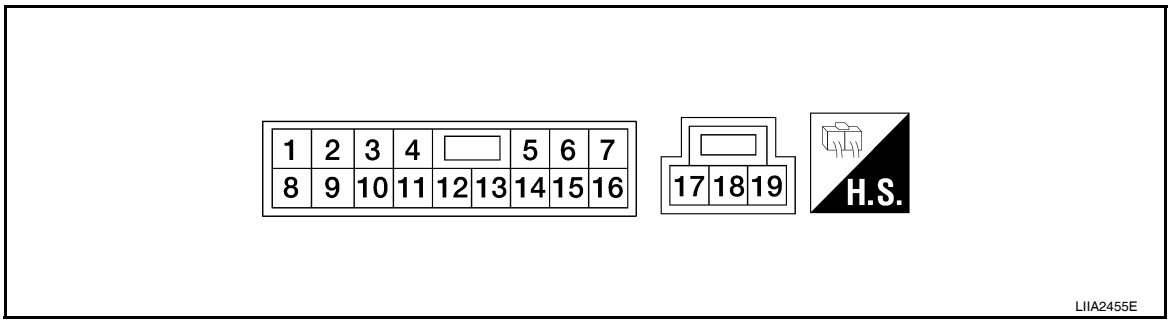
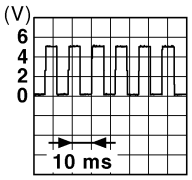
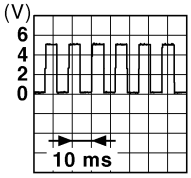
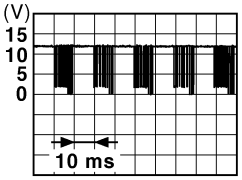
TERMINAL LAYOUT



PHYSICAL VALUES

MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH

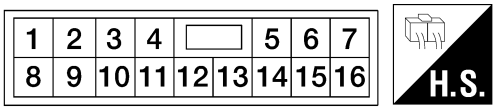
Terminal No. (Wire color)		Description		Condition	Voltage [V] (Approx.)
+	–	Signal name	Input/ Output		
1 (R/Y)	Ground	Rear power window motor LH UP signal	Output	When rear LH switch in power window main switch is operated UP.	Battery voltage
2 (W/B)	Ground	Encoder ground	—	—	0
3 (R/B)	Ground	Rear power window motor LH DOWN signal	Output	When rear LH switch in power window main switch is operated DOWN.	Battery voltage
4 (L)	Ground	Door key cylinder switch LH LOCK signal	Input	Key position (Neutral → Locked)	5 → 0
5 (L)	Ground	Rear power window motor RH DOWN signal	Output	When rear RH switch in power window main switch is operated DOWN.	Battery voltage
6 (R)	Ground	Door key cylinder switch LH UNLOCK signal	Input	Key position (Neutral → Unlocked)	5 → 0
7 (R)	Ground	Rear power window motor RH UP signal	Output	When rear RH switch in power window main switch is operated UP.	Battery voltage
8 (G/R)	11	Front door power window motor LH UP signal	Output	When front LH switch in power window main switch is operated UP.	Battery voltage
9 (O)	2	Encoder pulse signal 2	Input	When power window motor operates.	 JMKIA0070GB

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

Reference Value (King Cab)

INFOID:0000000003788292

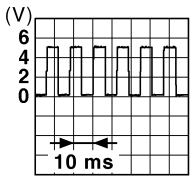
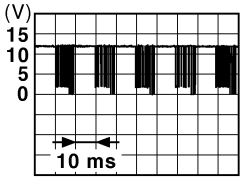
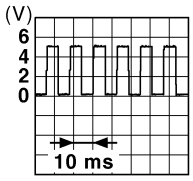
TERMINAL LAYOUT



LIIA2454E

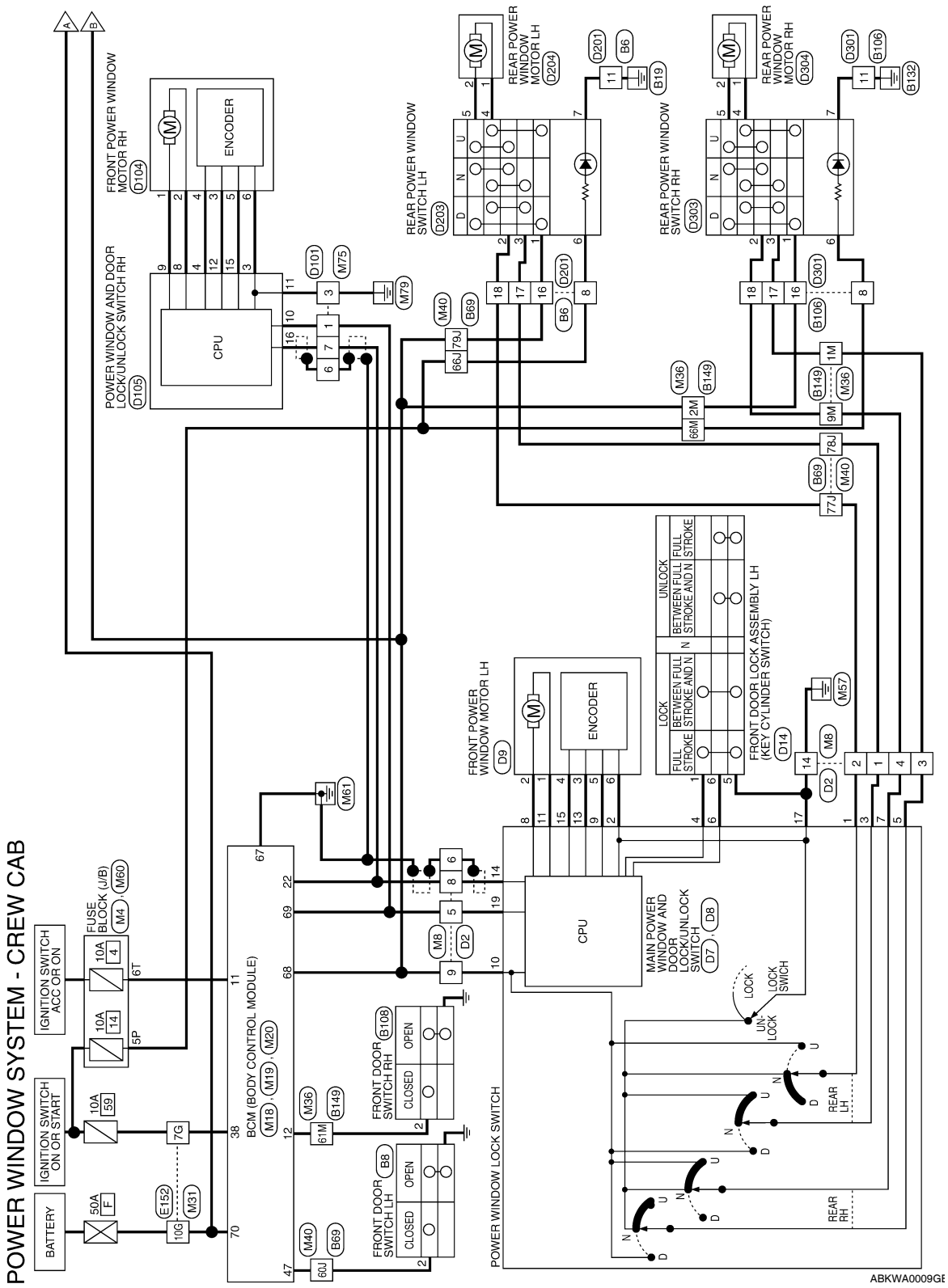
PHYSICAL VALUES

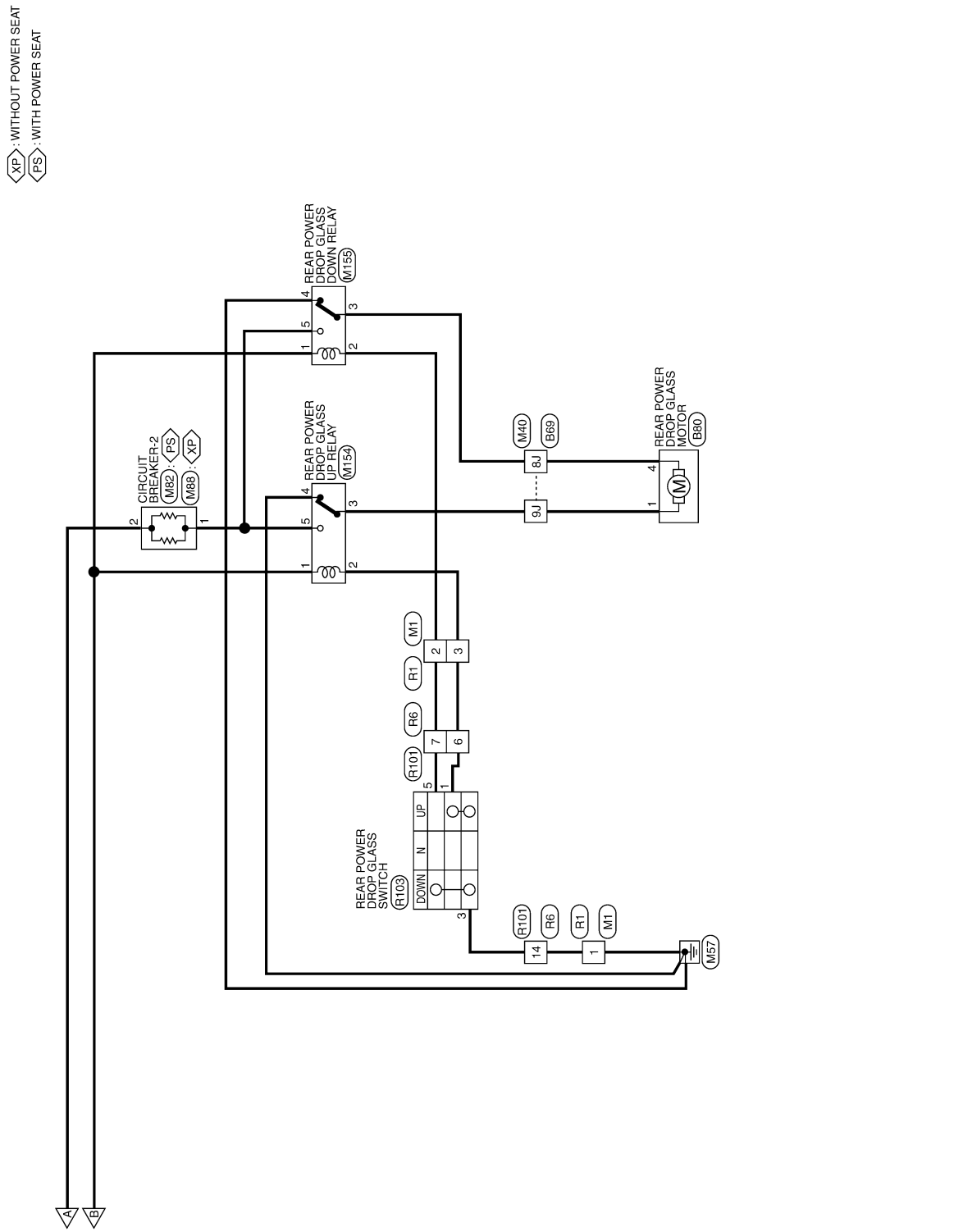
MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH

Terminal No. (Wire color)		Description		Condition	Voltage [V] (Approx.)
+	–	Signal name	Input/ Output		
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.	 JMKIA0070GB
10 (W/L)	Ground	RAP signal	Input	IGN SW ON	Battery voltage
				Within 45 second after ignition switch is turned to OFF.	Battery voltage
				When front LH or RH door is opened during retained power operation.	0
11 (G/W)	8	Front door power window motor LH DOWN signal	Output	When front LH switch in power window main switch is operated DOWN.	Battery voltage
12 (LG/W)	Ground	Power window serial link	Input/ Output	IGN SW ON or power window timer operating.	 JPMIA0013GB
13 (G/Y)	3	Encoder pulse signal 1	Input	When power window motor operates.	 JMKIA0070GB
14 (W/B)	Ground	Encoder ground	—	—	0
15 (B)	Ground	Ground	—	—	0

Wiring Diagram (Crew Cab)

INFOID:0000000003788293

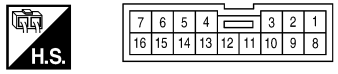




ABKWA0010GE

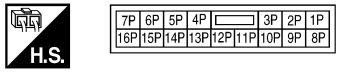
POWER WINDOW SYSTEM CONNECTORS - CREW CAB

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



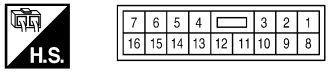
Terminal No.	Color of Wire	Signal Name
1	B	–
2	L/W	–
3	G	–

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



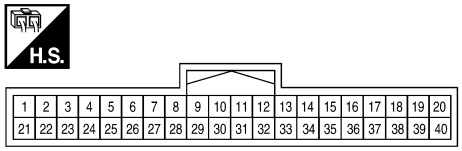
Terminal No.	Color of Wire	Signal Name
5P	O/L	–

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



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

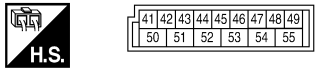
Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	WHITE



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

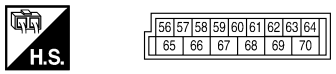
ABKIA0028GB

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



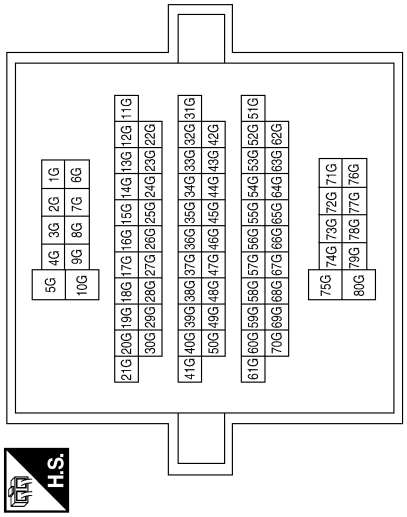
Terminal No.	Color of Wire	Signal Name
47	SB	DOOR SW (DR)

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



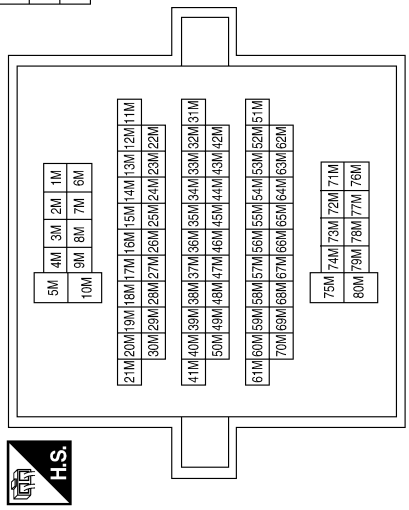
Terminal No.	Color of Wire	Signal Name
67	B	GND (POWER)
68	W/L	POWER WINDOW POWER SUPPLY (RAP)
69	W/R	POWER WINDOW POWER SUPPLY (BAT)
70	W/B	BATT (F/L)

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE



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

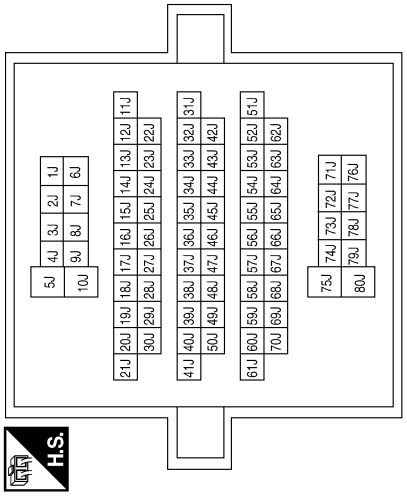
Connector No.	M36
Connector Name	WIRE TO WIRE
Connector Color	WHITE



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

AAKIA0117GB

Connector No.	M40
Connector Name	WIRE TO WIRE
Connector Color	WHITE

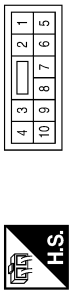


Terminal No.	Color of Wire	Signal Name
8J	B/R	–
9J	L/Y	–
60J	SB	–
66J	O/L	–
77J	R/Y	–
78J	R/B	–
79J	W/L	–

Connector No.	M60
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
6T	O	–

Connector No.	M75
Connector Name	WIRE TO WIRE
Connector Color	WHITE



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

Connector No.	M82
Connector Name	CIRCUIT BREAKER-2 (WITH POWER SEAT)
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
1	L/B	–
2	W/B	–

Connector No.	M88
Connector Name	CIRCUIT BREAKER-2 (WITHOUT POWER SEAT)
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
1	L/B	–
2	W/B	–

ABKIA0029GB

Connector No.	M154
Connector Name	REAR POWER DROP GLASS UP RELAY
Connector Color	BLACK

H.S.

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

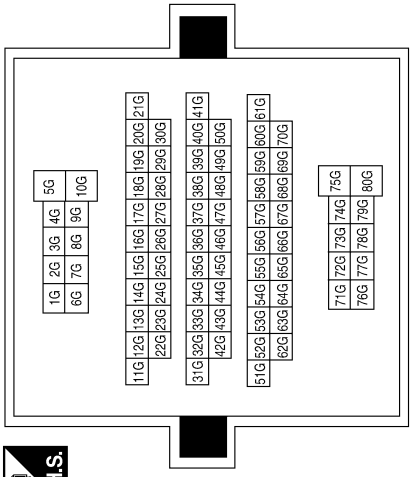
Connector No.	M155
Connector Name	REAR POWER DROP GLASS DOWN RELAY
Connector Color	BLACK

H.S.

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

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

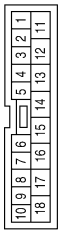
H.S.



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

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

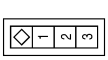
H.S.



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

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

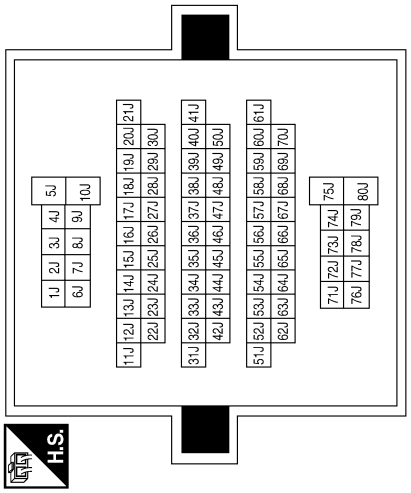
H.S.



Terminal No.	Color of Wire	Signal Name
2	SB	–

AAKIA0118GB

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

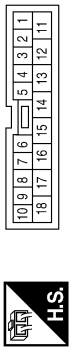


Terminal No.	Color of Wire	Signal Name
8J	B/R	–
9J	L/Y	–
60J	SB	–
66J	O/L	–
77J	R/Y	–
78J	R/B	–
79J	W/L	–

Connector No.	B80
Connector Name	REAR POWER DROP GLASS MOTOR
Connector Color	GRAY

Terminal No.	Color of Wire	Signal Name
1	L/Y	–
4	B/R	–

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



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

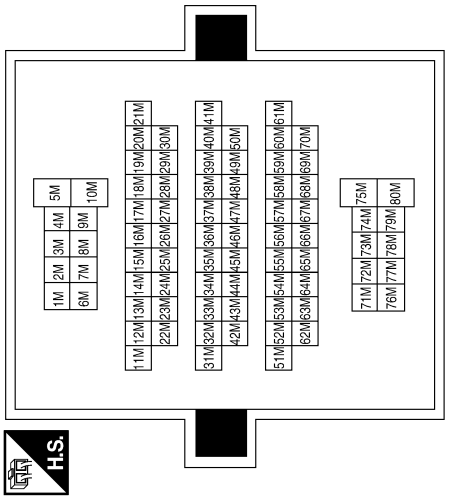
Connector No.	B108
Connector Name	FRONT DOOR SWITCH RH
Connector Color	WHITE

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

ABKIA0030GB

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

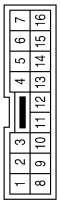
H.S.



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

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

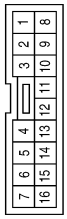
H.S.



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

Connector No.	R6
Connector Name	WIRE TO WIRE
Connector Color	WHITE

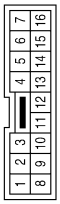
H.S.



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

Connector No.	R101
Connector Name	WIRE TO WIRE
Connector Color	WHITE

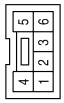
H.S.



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

Connector No.	R103
Connector Name	REAR POWER DROP GLASS SWITCH
Connector Color	WHITE

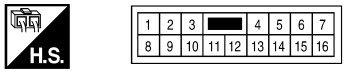
H.S.



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

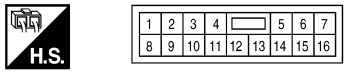
ABKIA0031GB

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



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

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



Terminal No.	Color of Wire	Signal Name
1	R/Y	–
2	W/B	–
3	R/B	–
4	L	LOCK
5	L	–
6	R	UNLOCK
7	R	–
8	G/R	–
9	O	–
10	W/L	–
11	G/W	–
12	–	–
13	G/Y	–
14	LG/W	ANTI PINICH SERIAL LINK
15	BR	–
16	–	–

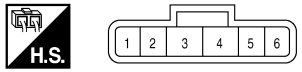
Connector No.	D8
Connector Name	MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH (CREW CAB)
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
17	B	GND
18	–	–
19	W/R	P WDW BAT

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

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

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

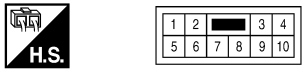


Terminal No.	Color of Wire	Signal Name
1	L	LOCK
5	B	GND
6	R	UNLOCK

ABKIA0032GB

POWER WINDOW MAIN SWITCH

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

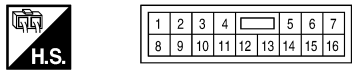


Terminal No.	Color of Wire	Signal Name
1	W/R	–
3	B	–
6	SHIELD	–
7	LG/W	–

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

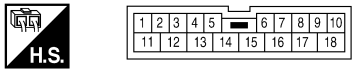
Terminal No.	Color of Wire	Signal Name
1	G	–
2	L	–
3	G/Y	–
4	G/R	–
5	G/W	–
6	W/B	–

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



Terminal No.	Color of Wire	Signal Name
1	–	–
2	–	–
3	W/B	–
4	G/R	–
5	–	–
6	–	–
7	–	–
8	L	–
9	G	–
10	W/R	–
11	B	GND
12	G/Y	–
13	–	–
14	–	–
15	G/W	–
16	LG/W	ANTI PINCH SEPRIAL LINK

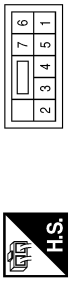
Connector No.	D201
Connector Name	WIRE TO WIRE
Connector Color	WHITE



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

ABKIA0033GB

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

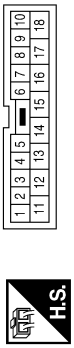


Terminal No.	Color of Wire	Signal Name
1	W/L	BAT
2	R/Y	UP
3	R/B	DOWN
4	G	DOWN
5	L	UP
6	O/L	–
7	B	–

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

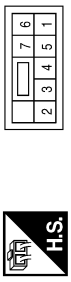
Terminal No.	Color of Wire	Signal Name
1	G	–
2	L	–

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



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

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



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

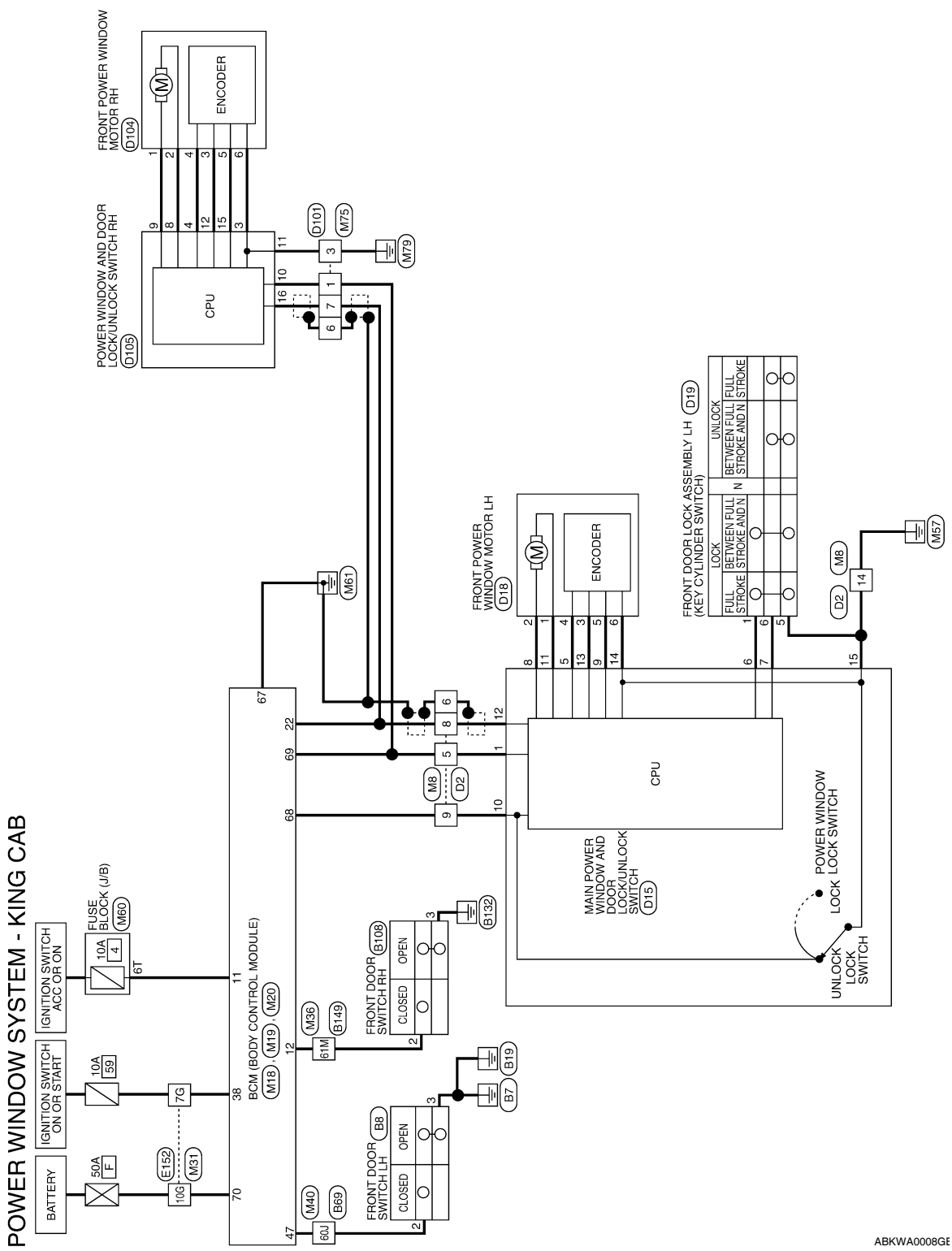
Connector No.	D304
Connector Name	REAR POWER WINDOW MOTOR RH
Connector Color	GRAY

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

AAKIA0119GB

Wiring Diagram (King Cab)

INFOID:0000000003788294



POWER WINDOW SYSTEM CONNECTORS - KING CAB

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

H.S.

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

Terminal No.	Color of Wire	Signal Name
5	W/R	–
6	SHIELD	–
8	G	–
9	W/L	–
14	B	–

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

H.S.

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

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

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

H.S.

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

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

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

H.S.

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

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

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

5G	4G	3G	2G	1G
10G	9G	8G	7G	6G

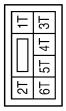
21G	20G	19G	18G	17G	16G	15G	14G	13G	12G	11G	
	30G	29G	28G	27G	26G	25G	24G	23G	22G		
41G	40G	39G	38G	37G	36G	35G	34G	33G	32G	31G	
	50G	49G	48G	47G	46G	45G	44G	43G	42G		
61G	60G	59G	58G	57G	56G	55G	54G	53G	52G	51G	
	70G	69G	68G	67G	66G	65G	64G	63G	62G		
75G	74G	73G	72G	71G							
	80G	79G	78G	77G	76G						

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

ABKIA0026GB

Connector No.	M60
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

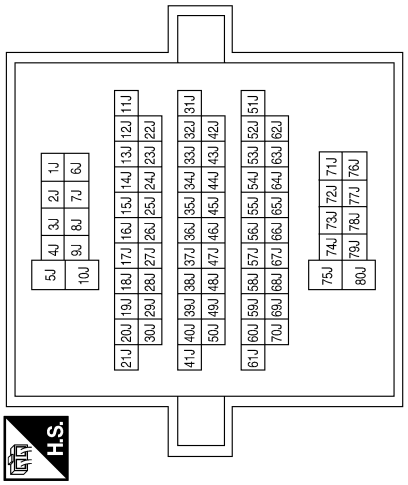
H.S.



Terminal No.	Color of Wire	Signal Name
6T	O	–

Connector No.	M40
Connector Name	WIRE TO WIRE
Connector Color	WHITE

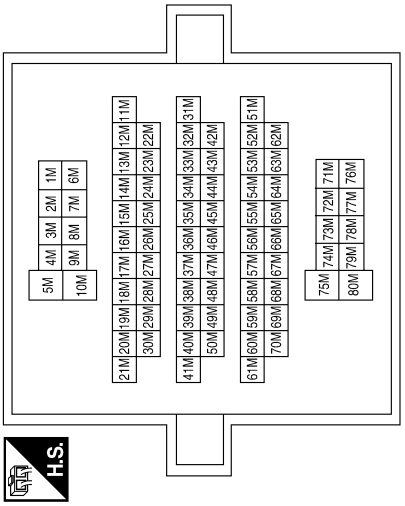
H.S.



Terminal No.	Color of Wire	Signal Name
60J	SB	–

Connector No.	M36
Connector Name	WIRE TO WIRE
Connector Color	WHITE

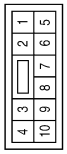
H.S.



Terminal No.	Color of Wire	Signal Name
61M	R/L	–

Connector No.	M75
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

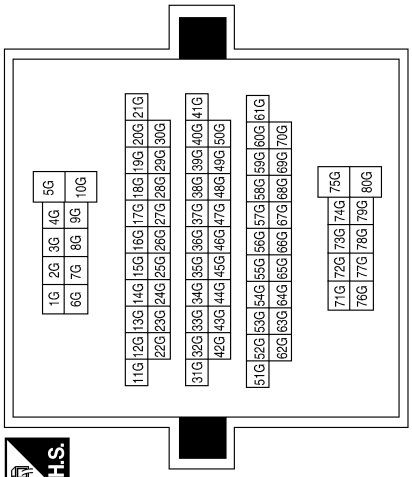


Terminal No.	Color of Wire	Signal Name
1	W/R	–
3	B	–
6	SHIELD	–
7	G	–

AAKIA0120GB

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

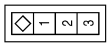
H.S.



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

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

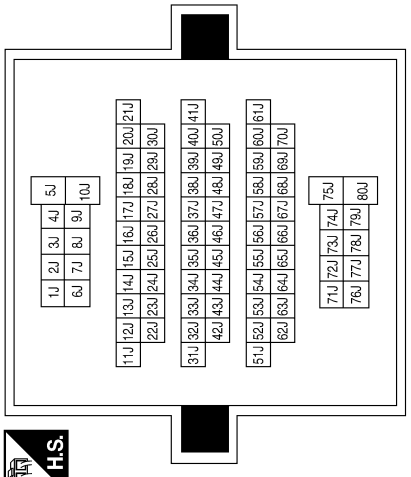
H.S.



Terminal No.	Color of Wire	Signal Name
2	SB	–
3	B	–

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

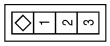
H.S.



Terminal No.	Color of Wire	Signal Name
60J	SB	–

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

H.S.

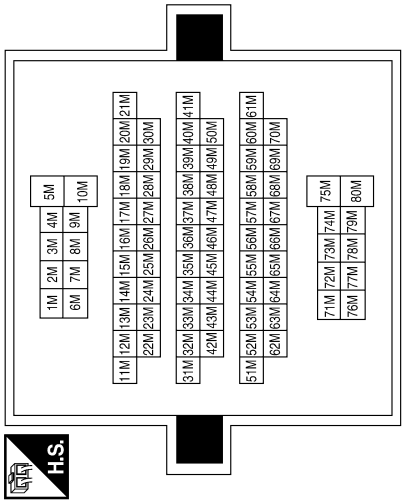


Terminal No.	Color of Wire	Signal Name
2	R/L	–
3	B	–

AAKIA0121GB

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

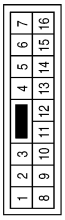
H.S.



Terminal No.	Color of Wire	Signal Name
61M	R/L	–

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

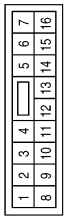
H.S.



Terminal No.	Color of Wire	Signal Name
5	W/R	–
6	SHIELD	–
8	LG/W	–
9	W/L	–
14	B	–

Connector No.	D15
Connector Name	MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH (KING CAB)
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
1	W/R	–
2	–	–
3	–	–
4	–	–
5	BR	–
6	L	LOCK
7	R	UNLOCK
8	G/R	–
9	O	–
10	W/L	–
11	G/W	–
12	LG/W	ANTI PINCH SERIAL LINK
13	G/Y	–
14	W/B	–
15	B	GND
16	–	–

Connector No.	D18
Connector Name	FRONT POWER WINDOW MOTOR LH
Connector Color	GRAY

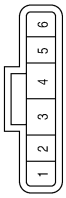
H.S.

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

AAKIA0122GB

Connector No.	D19
Connector Name	FRONT DOOR LOCK ASSEMBLY LH
Connector Color	BLACK

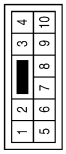
H.S.



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

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

H.S.



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

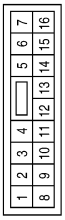
Connector No.	D104
Connector Name	FRONT POWER WINDOW MOTOR RH
Connector Color	GRAY

H.S.

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

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

H.S.



Terminal No.	Color of Wire	Signal Name
1	–	–
2	–	–
3	W/B	–
4	G/R	–
5	–	–
6	–	–
7	–	–
8	L	–
9	G	–
10	W/R	–
11	B	GND
12	G/Y	–
13	–	–
14	–	–
15	G/W	–
16	LG/W	ANTIPINCH SERIAL LINK

ABKIA0027GB

Fail Safe

INFOID:0000000003788295

FAIL-SAFE CONTROL

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

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

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

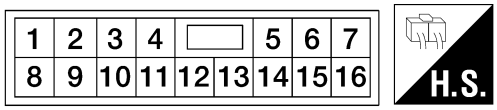
Perform initial operation to recover when switched to fail-safe mode. However, it switches back to fail-safe control when malfunction is found in power window switch or in motor.

FRONT POWER WINDOW SWITCH

Reference Value

INFOID:0000000003788296

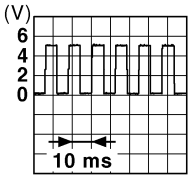
TERMINAL LAYOUT

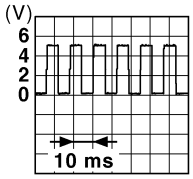
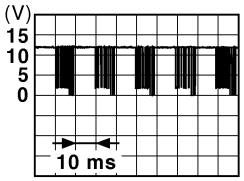


LIIA2454E

PHYSICAL VALUES

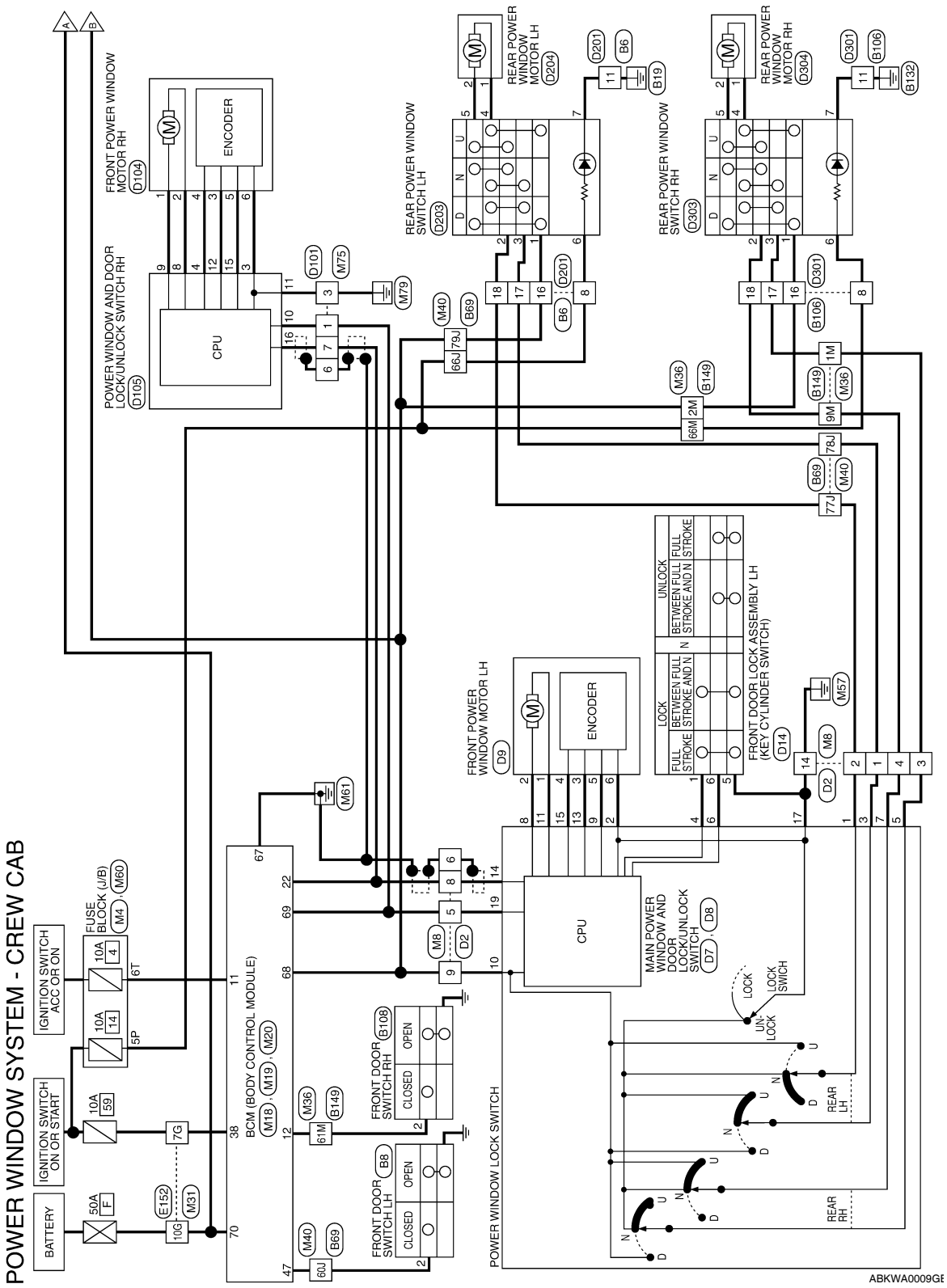
POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH

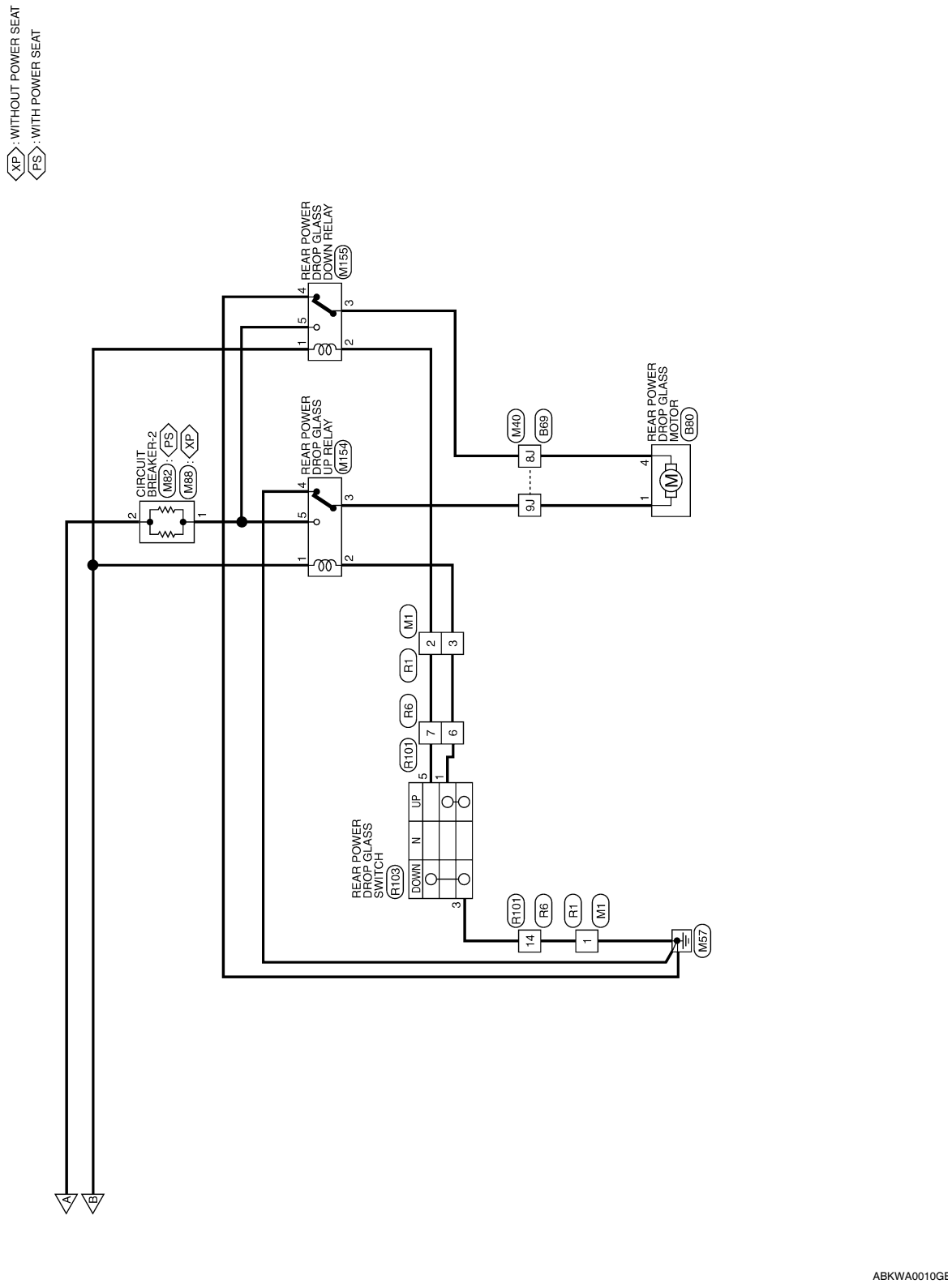
Terminal No. (Wire color)		Description		Condition	Voltage [V] (Approx.)
+	–	Signal name	Input/ Output		
3 (W/B)	Ground	Encoder ground	—	—	0
4 (G/R)	Ground	Encoder power supply	Output	When ignition switch ON or power window timer operates	10
8 (L)	9	Power window motor UP signal	Output	When power window motor is UP at operated.	Battery voltage
9 (G)	8	Power window motor DOWN signal	Output	When power window motor is DOWN at operated.	Battery voltage
10 (W/R)	Ground	Battery power supply	Input	—	Battery voltage
11 (B)	Ground	Ground	—	—	0
12 (G/Y)	3	Encoder pulse signal 1	Input	When power window motor operates.	 JMKIA0070GB

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

Wiring Diagram (Crew Cab)

INFOID:0000000004160648

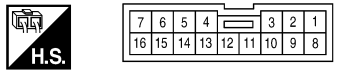




ABKWA0010GE

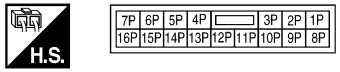
POWER WINDOW SYSTEM CONNECTORS - CREW CAB

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



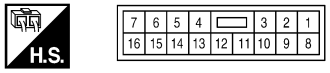
Terminal No.	Color of Wire	Signal Name
1	B	–
2	L/W	–
3	G	–

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



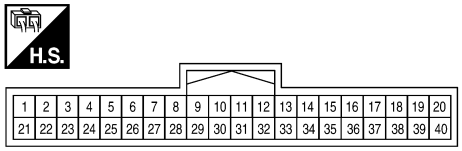
Terminal No.	Color of Wire	Signal Name
5P	O/L	–

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



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

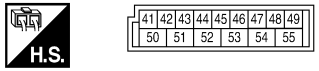
Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	WHITE



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

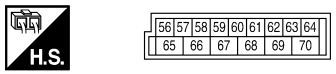
ABKIA0028GB

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



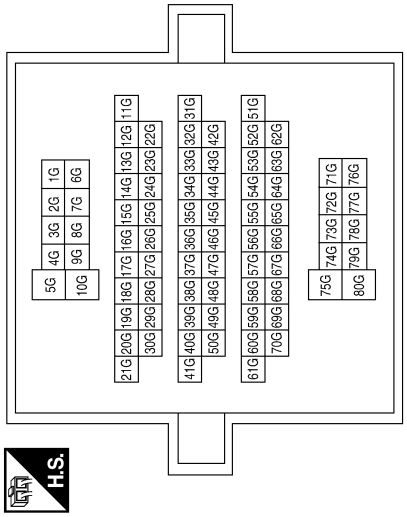
Terminal No.	Color of Wire	Signal Name
47	SB	DOOR SW (DR)

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



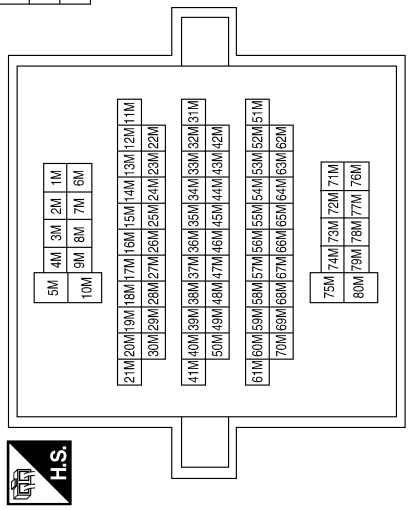
Terminal No.	Color of Wire	Signal Name
67	B	GND (POWER)
68	W/L	POWER WINDOW POWER SUPPLY (RAP)
69	W/R	POWER WINDOW POWER SUPPLY (BAT)
70	W/B	BATT (F/L)

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE



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

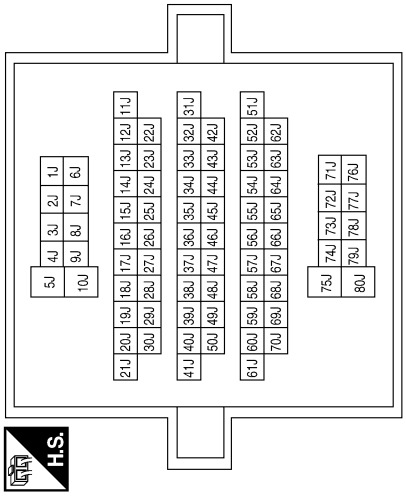
Connector No.	M36
Connector Name	WIRE TO WIRE
Connector Color	WHITE



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

AAKIA0117GB

Connector No.	M40
Connector Name	WIRE TO WIRE
Connector Color	WHITE

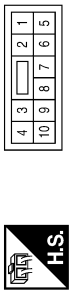


Terminal No.	Color of Wire	Signal Name
8J	B/R	–
9J	L/Y	–
60J	SB	–
66J	O/L	–
77J	R/Y	–
78J	R/B	–
79J	W/L	–

Connector No.	M60
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
6T	O	–

Connector No.	M75
Connector Name	WIRE TO WIRE
Connector Color	WHITE



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

Connector No.	M82
Connector Name	CIRCUIT BREAKER-2 (WITH POWER SEAT)
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
1	L/B	–
2	W/B	–

Connector No.	M88
Connector Name	CIRCUIT BREAKER-2 (WITHOUT POWER SEAT)
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
1	L/B	–
2	W/B	–

ABKIA0029GB

Connector No.	M154
Connector Name	REAR POWER DROP GLASS UP RELAY
Connector Color	BLACK

H.S.

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

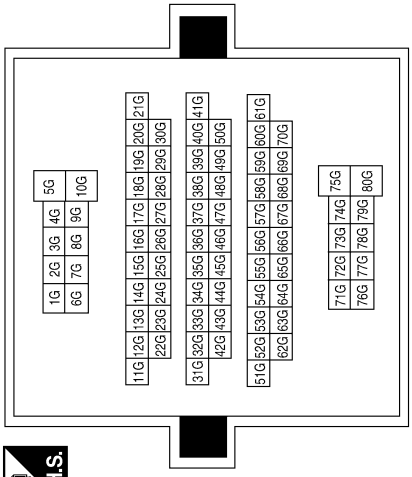
Connector No.	M155
Connector Name	REAR POWER DROP GLASS DOWN RELAY
Connector Color	BLACK

H.S.

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

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

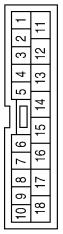
H.S.



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

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

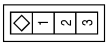
H.S.



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

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

H.S.

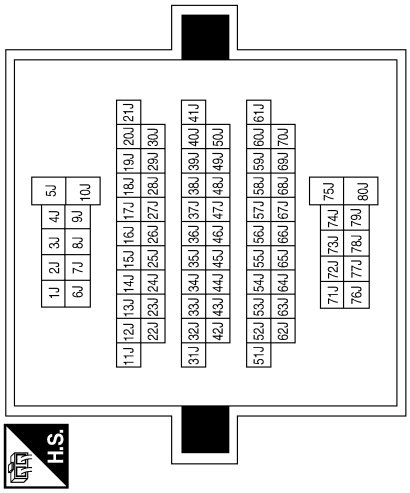


Terminal No.	Color of Wire	Signal Name
2	SB	–

AAKIA0118GB

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

H.S.



Terminal No.	Color of Wire	Signal Name
8J	B/R	–
9J	L/Y	–
60J	SB	–
66J	O/L	–
77J	R/Y	–
78J	R/B	–
79J	W/L	–

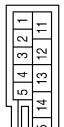
Connector No.	B80
Connector Name	REAR POWER DROP GLASS MOTOR
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
1	L/Y	–
4	B/R	–

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

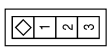
H.S.



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

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

H.S.

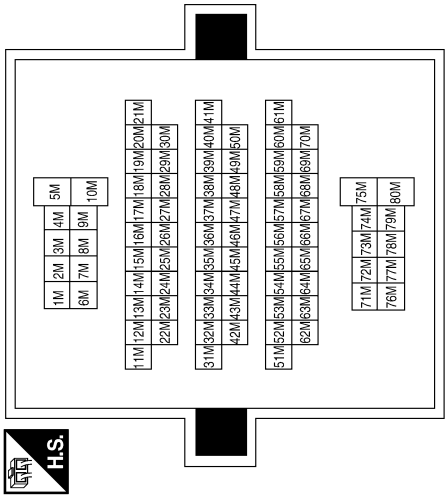


Terminal No.	Color of Wire	Signal Name
2	R/L	–

ABKIA0030GB

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

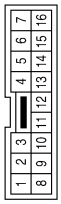
H.S.



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

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

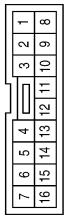
H.S.



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

Connector No.	R6
Connector Name	WIRE TO WIRE
Connector Color	WHITE

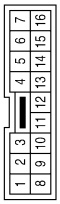
H.S.



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

Connector No.	R101
Connector Name	WIRE TO WIRE
Connector Color	WHITE

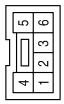
H.S.



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

Connector No.	R103
Connector Name	REAR POWER DROP GLASS SWITCH
Connector Color	WHITE

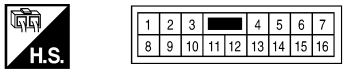
H.S.



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

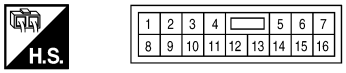
ABKIA0031GB

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



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

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



Terminal No.	Color of Wire	Signal Name
1	R/Y	–
2	W/B	–
3	R/B	–
4	L	LOCK
5	L	–
6	R	UNLOCK
7	R	–
8	G/R	–
9	O	–
10	W/L	–
11	G/W	–
12	–	–
13	G/Y	–
14	LG/W	ANTI PINICH SERIAL LINK
15	BR	–
16	–	–

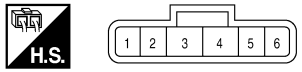
Connector No.	D8
Connector Name	MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH (CREW CAB)
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
17	B	GND
18	–	–
19	W/R	P WDW BAT

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

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

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

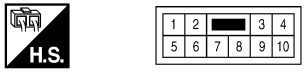


Terminal No.	Color of Wire	Signal Name
1	L	LOCK
5	B	GND
6	R	UNLOCK

ABKIA0032GB

FRONT POWER WINDOW SWITCH

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

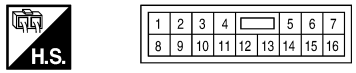


Terminal No.	Color of Wire	Signal Name
1	W/R	–
3	B	–
6	SHIELD	–
7	LG/W	–

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

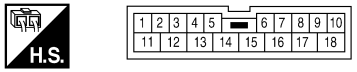
Terminal No.	Color of Wire	Signal Name
1	G	–
2	L	–
3	G/Y	–
4	G/R	–
5	G/W	–
6	W/B	–

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



Terminal No.	Color of Wire	Signal Name
1	–	–
2	–	–
3	W/B	–
4	G/R	–
5	–	–
6	–	–
7	–	–
8	L	–
9	G	–
10	W/R	–
11	B	GND
12	G/Y	–
13	–	–
14	–	–
15	G/W	–
16	LG/W	ANTI PINCH SEPRIAL LINK

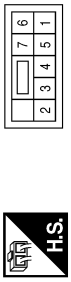
Connector No.	D201
Connector Name	WIRE TO WIRE
Connector Color	WHITE



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

ABKIA0033GB

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

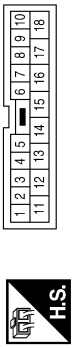


Terminal No.	Color of Wire	Signal Name
1	W/L	BAT
2	R/Y	UP
3	R/B	DOWN
4	G	DOWN
5	L	UP
6	O/L	–
7	B	–

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

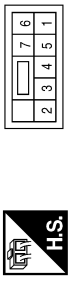
Terminal No.	Color of Wire	Signal Name
1	G	–
2	L	–

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



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

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



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

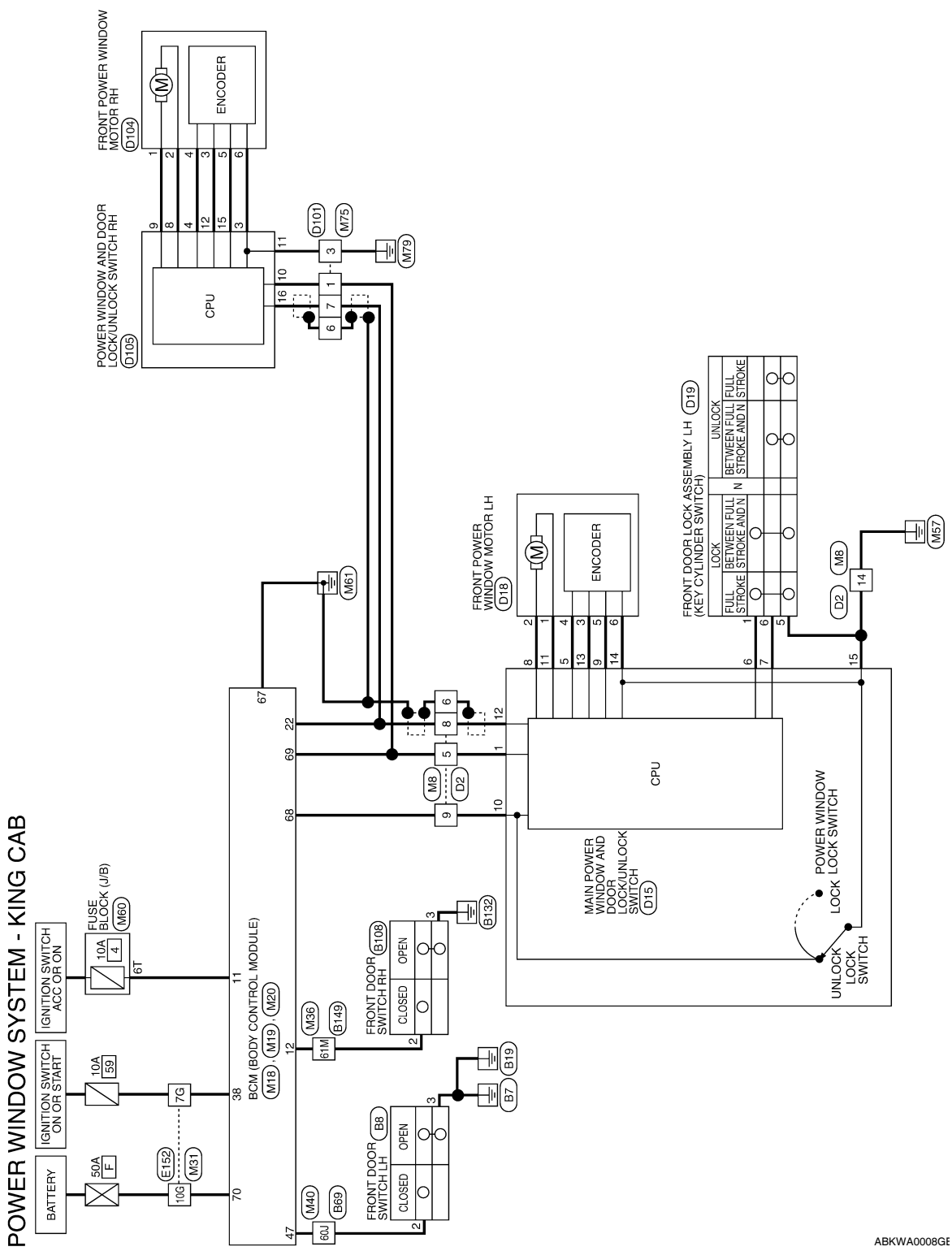
Connector No.	D304
Connector Name	REAR POWER WINDOW MOTOR RH
Connector Color	GRAY

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

AAKIA0119GB

Wiring Diagram (King Cab)

INFOID:0000000004160649



POWER WINDOW SYSTEM CONNECTORS - KING CAB

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

H.S.

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

Terminal No.	Color of Wire	Signal Name
5	W/R	–
6	SHIELD	–
8	G	–
9	W/L	–
14	B	–

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

H.S.

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

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

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

H.S.

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

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

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

H.S.

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

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

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

5G	4G	3G	2G	1G
10G	9G	8G	7G	6G

21G	20G	19G	18G	17G	16G	15G	14G	13G	12G	11G									
	30G	29G	28G	27G	26G	25G	24G	23G	22G										
41G	40G	39G	38G	37G	36G	35G	34G	33G	32G	31G									
		50G	49G	48G	47G	46G	45G	44G	43G	42G									
61G	60G	59G	58G	57G	56G	55G	54G	53G	52G	51G									
			70G	69G	68G	67G	66G	65G	64G	63G	62G								
												75G	74G	73G	72G	71G			
													80G	79G	78G	77G	76G		

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

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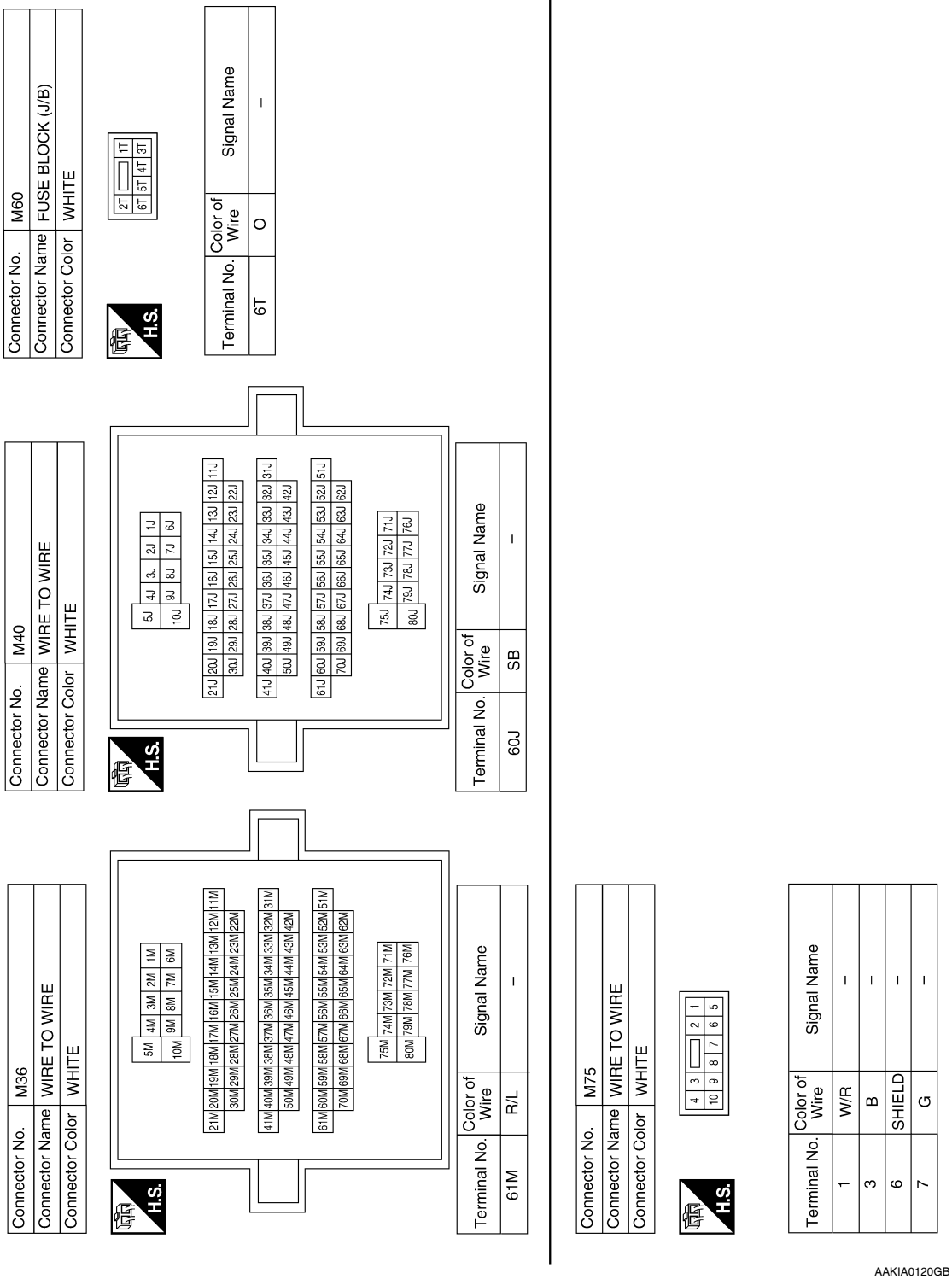
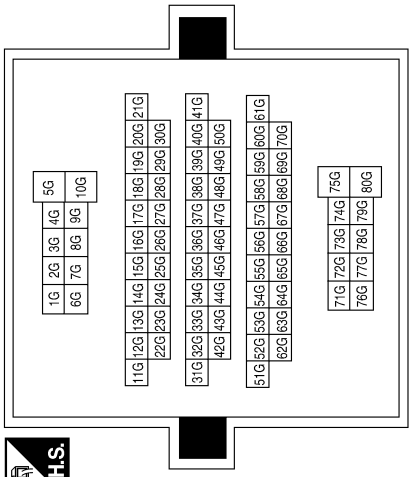

Connector No. M36
Connector Name WIRE TO WIRE
Connector Color WHITE
H.S.
Terminal No. Color of Wire Signal Name
61M R/L –
Connector No. M40
Connector Name WIRE TO WIRE
Connector Color WHITE
H.S.
Terminal No. Color of Wire Signal Name
60J SB –
Connector No. M60
Connector Name FUSE BLOCK (J/B)
Connector Color WHITE
H.S.
Terminal No. Color of Wire Signal Name
6T O –
Connector No. M75
Connector Name WIRE TO WIRE
Connector Color WHITE
H.S.
Terminal No. Color of Wire Signal Name
1 W/R –
3 B –
6 SHIELD –
7 G –
AAKIA0120GB

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

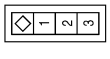
H.S.



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

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

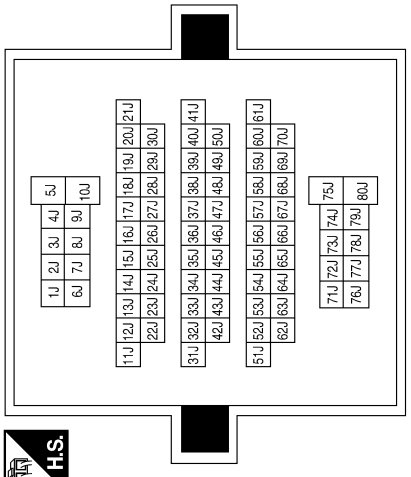
H.S.



Terminal No.	Color of Wire	Signal Name
2	SB	–
3	B	–

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

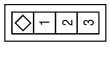
H.S.



Terminal No.	Color of Wire	Signal Name
60J	SB	–

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

H.S.

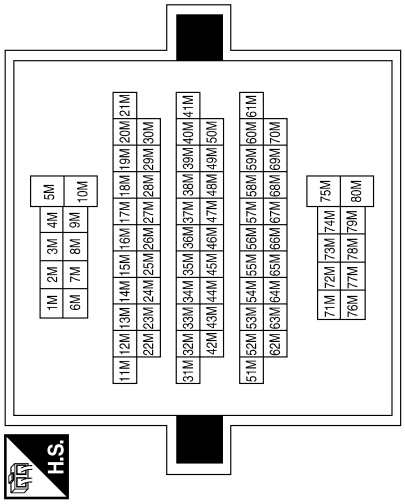


Terminal No.	Color of Wire	Signal Name
2	R/L	–
3	B	–

AAKIA0121GB

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

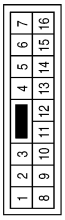
H.S.



Terminal No.	Color of Wire	Signal Name
61M	R/L	–

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

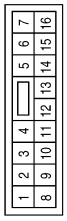
H.S.



Terminal No.	Color of Wire	Signal Name
5	W/R	–
6	SHIELD	–
8	LG/W	–
9	W/L	–
14	B	–

Connector No.	D15
Connector Name	MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH (KING CAB)
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
1	W/R	–
2	–	–
3	–	–
4	–	–
5	BR	–
6	L	LOCK
7	R	UNLOCK
8	G/R	–
9	O	–
10	W/L	–
11	G/W	–
12	LG/W	ANTI PINCH SERIAL LINK
13	G/Y	–
14	W/B	–
15	B	GND
16	–	–

Connector No.	D18
Connector Name	FRONT POWER WINDOW MOTOR LH
Connector Color	GRAY

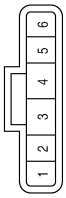
H.S.

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

AAKIA0122GB

Connector No.	D19
Connector Name	FRONT DOOR LOCK ASSEMBLY LH
Connector Color	BLACK

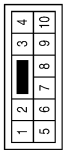
H.S.



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

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

H.S.



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

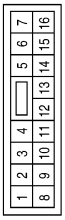
Connector No.	D104
Connector Name	FRONT POWER WINDOW MOTOR RH
Connector Color	GRAY

H.S.

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

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

H.S.



Terminal No.	Color of Wire	Signal Name
1	–	–
2	–	–
3	W/B	–
4	G/R	–
5	–	–
6	–	–
7	–	–
8	L	–
9	G	–
10	W/R	–
11	B	GND
12	G/Y	–
13	–	–
14	–	–
15	G/W	–
16	LG/W	ANTIPINCH SERIAL LINK

ABKIA0027GB

Fail Safe

INFOID:0000000004160650

FAIL-SAFE CONTROL

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

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

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

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

SYMPTOM DIAGNOSIS

NONE OF THE POWER WINDOWS CAN BE OPERATED USING ANY SWITCH

Diagnosis Procedure

INFOID:0000000003788300

1. CHECK BCM POWER SUPPLY AND GROUND CIRCUIT

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

Is the inspection result normal?

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

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

Check power window switch main power supply and ground circuit.
Refer to PWC-12, "POWER WINDOW MAIN SWITCH : Component Function Check" (Crew Cab) or PWC-21, "POWER WINDOW MAIN SWITCH : Component Function Check" (King Cab).

Is the inspection result normal?

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

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

Check main power window and door lock/unlock switch serial circuit.
Refer to PWC-12, "POWER WINDOW MAIN SWITCH : Component Function Check" (Crew Cab) or PWC-21, "POWER WINDOW MAIN SWITCH : 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 PWC-12, "POWER WINDOW MAIN SWITCH : Component Function Check" (Crew Cab) or PWC-21, "POWER WINDOW MAIN SWITCH : Component Function Check" (King Cab).

Is the inspection result normal?

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

DRIVER SIDE POWER WINDOW ALONE DOES NOT OPERATE

Diagnosis Procedure

INFOID:0000000003788301

1. CHECK FRONT POWER WINDOW MOTOR LH

Check front power window motor LH.
Refer to PWC-25, "DRIVER SIDE : Component Function Check".

Is the inspection result normal?

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

FRONT PASSENGER SIDE POWER WINDOW ALONE DOES NOT OPERATE

Diagnosis Procedure

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

REAR LH SIDE POWER WINDOW ALONE DOES NOT OPERATE

Diagnosis Procedure

INFOID:0000000003788303

1. CHECK REAR POWER WINDOW SWITCH LH

Check rear power window switch LH.
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 LH

Check rear power window motor LH.
Refer to PWC-28, "REAR LH : Component Function Check".

Is the inspection result normal?

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

REAR RH SIDE POWER WINDOW ALONE DOES NOT OPERATE

Diagnosis Procedure

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

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

Diagnosis Procedure

INFOID:0000000003788305

1. CHECK DOOR WINDOW SLIDING PART

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

Is the inspection result normal?

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

2. CHECK ENCODER CIRCUIT

Check encoder circuit.
Refer to PWC-32, "DRIVER SIDE : Component Function Check" (Crew Cab) or PWC-38, "DRIVER SIDE : Component Function Check" (King Cab).

Is the inspection result normal?

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

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

Diagnosis Procedure

INFOID: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 PWC-34, "PASSENGER SIDE : Component Function Check" (Crew Cab) or PWC-40, "PASSENGER SIDE : Component Function Check" (King Cab).

Is the inspection result normal?

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

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

Diagnosis Procedure

INFOID:0000000003788307

1. CHECK ENCODER

Check encoder.
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?

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

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

Diagnosis Procedure

INFOID:0000000003788308

1. CHECK ENCODER

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

Is the inspection result normal?

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

POWER WINDOW RETAINED POWER OPERATION DOES NOT OPERATE PROPERLY

Diagnosis Procedure

INFOID:0000000003788309

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".

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 PWC-48, "Component Function Check" (Crew Cab) or PWC-51, "Component Function Check" (King Cab).

Is the inspection result normal?

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

KEYLESS POWER WINDOW DOWN DOES NOT OPERATE

Diagnosis Procedure

INFOID: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.

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".

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

REAR POWER DROP GLASS DOES NOT OPERATE

Diagnosis Procedure

INFOID:0000000003788313

1. CHECK BCM POWER SUPPLY AND GROUND CIRCUIT

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

Is the inspection result normal?

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

2. CHECK REAR POWER DROP GLASS SWITCH

Check rear power drop glass switch.
Refer to PWC-59, "Rear Power Drop Glass Circuit Inspection".

Is the inspection result normal?

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

3. CHECK REAR POWER DROP GLASS MOTOR CIRCUIT

Check rear power drop glass motor circuit.
Refer to PWC-59, "Rear Power Drop Glass Circuit Inspection".

Is the inspection result normal?

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

4. CHECK REAR POWER DROP GLASS RELAYS

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".

Is the inspection result normal?

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

PRECAUTION

PRECAUTIONS

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

INFOID:0000000003788314

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.**

ON-VEHICLE REPAIR

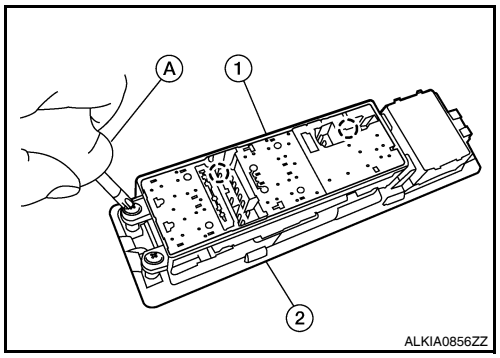
POWER WINDOW MAIN SWITCH

Removal and Installation

INFOID:0000000003788315

REMOVAL

1. Remove the power window main switch assembly from the front door finisher LH. Refer to INT-10, "Removal 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.

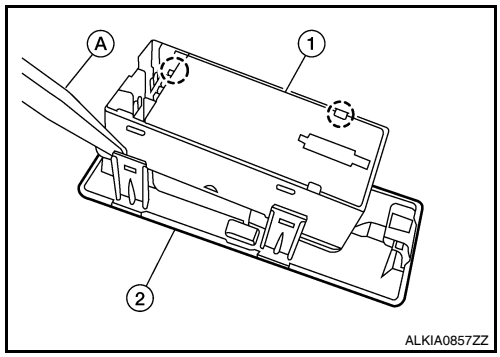
FRONT POWER WINDOW SWITCH

Removal and Installation

INFOID:0000000003788316

REMOVAL

1. Remove the front power window switch assembly from the front door finisher RH. Refer to INT-10, "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.



INSTALLATION

Installation is in the reverse order of removal.

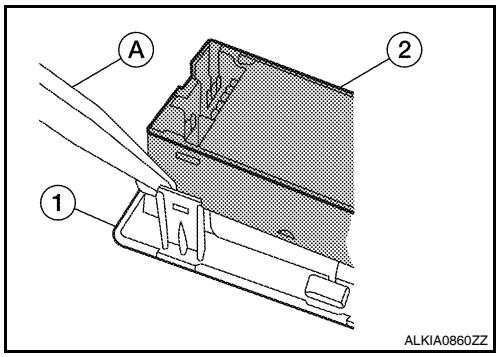
REAR POWER WINDOW SWITCH

Removal and Installation - Rear Door Switch

INFOID:0000000003788317

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

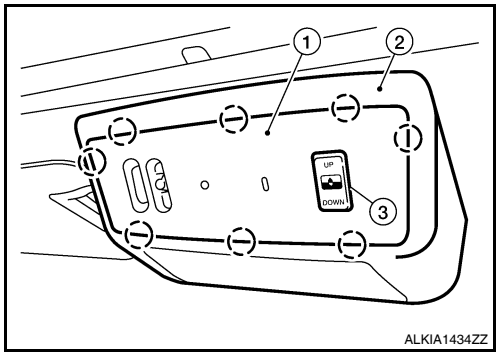
Installation is in the reverse order of removal.

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).
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.