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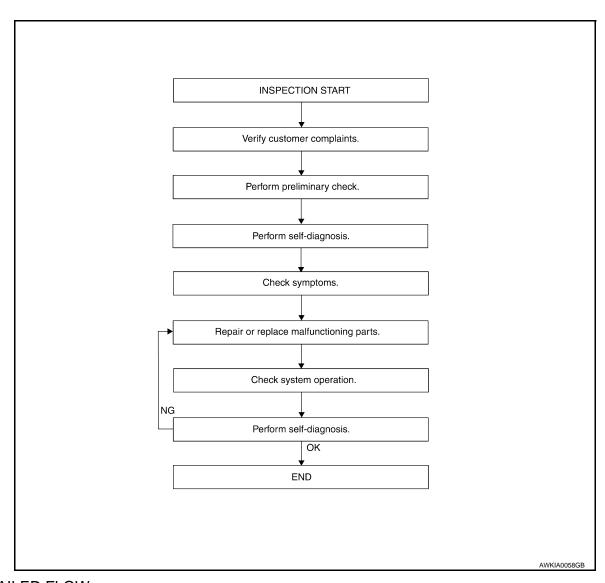
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# **BASIC INSPECTION**

# DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

**WORK FLOW** 



# **DETAILED FLOW**

# 1. CUSTOMER INFORMATION

Interview the customer to obtain detailed information about the symptom.

### >> GO TO 2

# 2. PRELIMINARY CHECK

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

### >> GO TO 3

# 3. SELF-DIAGNOSIS

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

# **DIAGNOSIS AND REPAIR WORKFLOW**

< BASIC INSPECTION >	
>> GO TO 4	А
<b>4.</b> SYMPTOM	
Check for symptoms. Refer to PWC-122, "Diagnosis Procedure".	В
>> GO TO 5	
5. MALFUNCTIONING PARTS	С
Repair or replace the applicable parts.	
>> GO TO 6	D
6. SYSTEM OPERATION	
Check system operation.	E
>> GO TO 7	-
7. self-diagnosis	F
Perform self-diagnosis. Refer to BCS-49, "DTC Index".	
Are any DTCs indicated? YES >> GO TO 5	G
NO >> Inspection End.	
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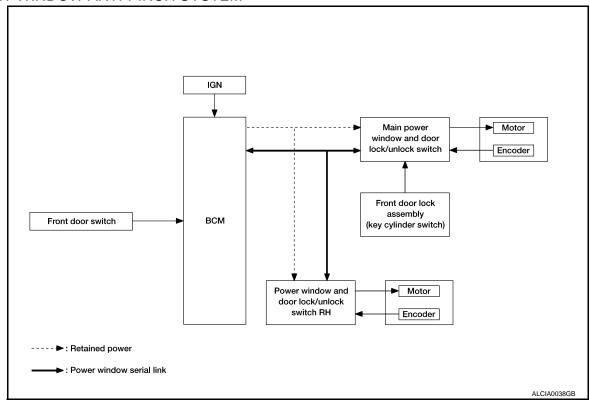
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# **FUNCTION DIAGNOSIS**

# POWER WINDOW SYSTEM

System Diagram

# FRONT WINDOW ANTI-PINCH SYSTEM



# **System Description**

INFOID:0000000005385608

# POWER WINDOW MAIN SWITCH INPUT/OUTPUT SIGNAL CHART

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

POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH INPUT/OUTPUT SIGNAL CHART

### POWER WINDOW SYSTEM

### < FUNCTION DIAGNOSIS >

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

### POWER WINDOW OPERATION

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

### REAR POWER DROP GLASS OPERATION (IF EQUIPPED)

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

### POWER WINDOW AUTO-OPERATION (FRONT LH & RH)

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

### RETAINED POWER OPERATION

 Retained power operation is an additional power supply function that enables power window system to operate during the 45 seconds even when ignition switch is turned OFF.

### Retained power function cancel conditions

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

### POWER WINDOW LOCK

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

### ANTI-PINCH OPERATION (FRONT LH & RH)

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

### OPERATION CONDITION

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

### NOTE:

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

# KEY CYLINDER SWITCH OPERATION

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### **POWER WINDOW SYSTEM**

### < FUNCTION DIAGNOSIS >

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

### **OPERATION CONDITION**

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

### KEYLESS POWER WINDOW DOWN OPERATION (FRONT LH & RH)

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

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

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

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

### NOTE:

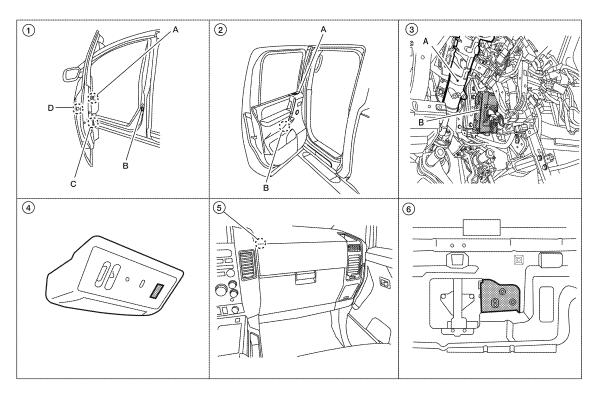
Keyless power window down operation mode can be changed by "PW DOWN SET" mode in "WORK SUP-PORT". Refer to <a href="https://example.com/BCS-19">BCS-19</a>, "MULTIREMOTE ENT: CONSULT-III Function (BCM - MULTIREMOTE ENT)".

### NOTE:

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

# Component Parts Location

INFOID:0000000005385609



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# **POWER WINDOW SYSTEM**

### < FUNCTION DIAGNOSIS >

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

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

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

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

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# **Component Description**

(Crew Cab)

### INFOID:0000000005385610

### POWER WINDOW SYSTEM

Component	Function		
всм	<ul><li>Supplies power supply to power window switch.</li><li>Controls retained power.</li></ul>		
Main power window and door lock/unlock switch	<ul> <li>Directly controls all power window motor of all doors.</li> <li>Controls anti-pinch operation of front power window LH.</li> </ul>		
Power window and door lock/unlock switch RH	<ul> <li>Controls front power window motor RH.</li> <li>Controls anti-pinch operation of front power window RH.</li> </ul>		
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	<ul> <li>Integrates the ENCODER POWER and WINDOW MOTOR.</li> <li>Starts operating with signals from main power window and door lock/unlock switch.</li> <li>Transmits power window motor rotation as a pulse signal to main power window and door lock/unlock switch.</li> </ul>		
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.		

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# **DIAGNOSIS SYSTEM (BCM)**

### < FUNCTION DIAGNOSIS >

# **DIAGNOSIS SYSTEM (BCM)**

**COMMON ITEM** 

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

INFOID:0000000005683045

### 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 DIAGNOSTIC RESULT	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	<ul> <li>Enables to read and save the vehicle specification.</li> <li>Enables to write the vehicle specification when replacing BCM.</li> </ul>

### 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	Cub avotom polootion item	Diagnosis mode		
System	Sub system selection item	WORK SUPPORT	DATA MONITOR	ACTIVE TEST
BCM	BCM	×		
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	×
Warning chime	BUZZER		×	×
Interior room lamp timer	INT LAMP	×	×	×
Remote keyless entry system	MULTI REMOTE ENT	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER		×	×
Air conditioner	AIR CONDITONER		×	
Combination switch	COMB SW		×	
Immobilizer	IMMU		×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
RAP (retained accessory power)	RETAINED PWR	×	×	×
Signal buffer system	SIGNAL BUFFER		×	×
TPMS (tire pressure monitoring system)	AIR PRESSURE MONITOR	×	×	×
Vehicle security system	THEFT ALM	×	×	×

# **RETAINED PWR**

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

INFOID:0000000005683046

**DATA MONITOR** 

# **DIAGNOSIS SYSTEM (BCM)**

# < FUNCTION DIAGNOSIS >

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

# **ACTIVE TEST**

Test Item	Description	
RETAINED PWR	This test is able to supply RAP signal (power) from BCM (body control module) to power window system and power sunroof system (if equipped). Those systems can be operated when turning on "RETAINED PWR" on CONSULT-III screen even if the ignition switch is turned OFF.  NOTE:  During this test, CONSULT-III can be operated with ignition switch in OFF position. "RETAINED PWR" should be turned "ON" or "OFF" on CONSULT-III screen when ignition switch is ON. Then turn ignition switch OFF to check retained power operation. CONSULT-III might be stuck if "RETAINED PWR" is turned "ON" or "OFF" on CONSULT-III screen when ignition switch is OFF.	

# **WORK SUPPORT**

Work item	Description
RETAINED PWR SET	RAP signal's power supply period can be changed by mode setting. Selects RAP signal's power supply period between three steps  • MODE1 (45 sec.)/MODE2 (OFF)/MODE 3 (2 min.).

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< COMPONENT DIAGNOSIS >

# COMPONENT DIAGNOSIS

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

# POWER WINDOW MAIN SWITCH: Description

INFOID:0000000005385613

- 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:0000000005385614

Main Power Window And Door Lock/Unlock Switch

# ${f 1}$ . CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH FUNCTION

Does power window motor operate with main power window and door lock/unlock switch operation? Is the inspection result normal?

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

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

# POWER WINDOW MAIN SWITCH: Diagnosis Procedure

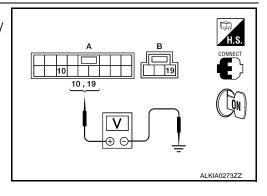
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Regarding Wiring Diagram information, refer to PWC-82. "Wiring Diagram (Crew Cab)".

# 1. CHECK POWER SUPPLY CIRCUIT

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

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



### Is the measurement value within the specification?

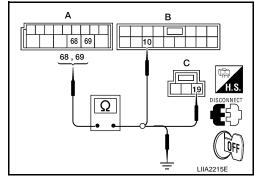
YES >> GO TO 3

NO >> GO TO 2

# 2. CHECK HARNESS CONTINUITY

- Turn ignition switch OFF.
- Disconnect BCM and main power window and door lock/unlock switch.
- 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
IVIZU (A)	69	D8 (C)	19	163



# < COMPONENT DIAGNOSIS >

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

BCM connector	Terminal		Continuity
M20 (A)	68	Ground	No
1V120 (A)	69		INO

### Is the inspection result normal?

YES >> GO TO 4

NO >> Repair or replace harness.

# $3.\,$ CHECK GROUND CIRCUIT

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

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

# Is the inspection result normal?

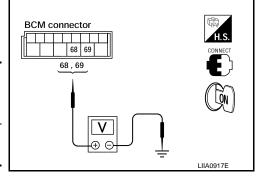
YES >> Replace main power window and door lock/unlock switch. Refer to <a href="https://example.com/PWC-137">PWC-137</a>, "Removal and Installation".

NO >> Repair or replace harness.

# 4. CHECK BCM OUTPUT SIGNAL

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

	V I 00			
(+)		(-)	Voltage (V) (Approx.)	
BCM connector	Terminal	( )	, , ,	
M20	68	Ground	Pottony voltago	
IVIZU	69	Giodila	Battery voltage	



### Is the measurement value within the specification?

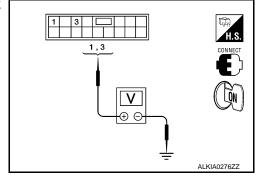
YES >> Check main power window and door lock/unlock switch output signal (rear power window switch LH) GO TO 5

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.



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### < COMPONENT DIAGNOSIS >

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

### Is the measurement value within the specification?

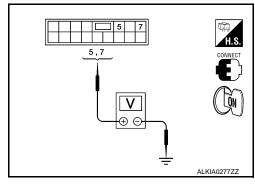
YES >> GO TO 7

NO >> Replace main power window and door lock/unlock switch. Refer to <a href="PWC-137">PWC-137</a>, "Removal and <a href="Installation"</a>.

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

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

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



### Is the measurement value within the specification?

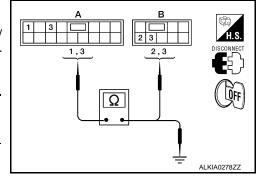
YES >> GO TO 8

NO >> Replace main power window and door lock/unlock switch. Refer to <a href="PWC-137">PWC-137</a>, "Removal and Installation".

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

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

Main power window and door lock/unlock switch connector	Terminal	Rear power window switch LH connector	Terminal	Continuity
	1	D203	2	Yes
DI .	3	D203	3	162



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

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

### < COMPONENT DIAGNOSIS >

### Is the inspection result normal?

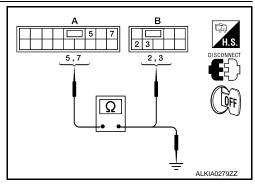
YES >> GO TO 9

NO >> Repair or replace harness.

# $8.\,{\rm check\ harness\ continuity\ (rear\ power\ window\ switch\ rh)}$

- Turn ignition switch OFF.
- Disconnect rear power window switch RH. 2.
- 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	D303	2	162



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

Main power window and door lock/unlock switch connector	Terminal	0	Continuity
D7	5	Ground	No
Di	7		NO

### Is the inspection result normal?

YES >> GO TO 9

NO

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".

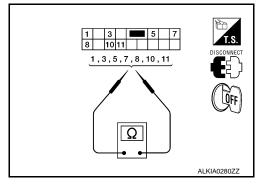
>> Replace main power window and door lock/unlock switch. Refer to PWC-137, "Removal and Installation".

# POWER WINDOW MAIN SWITCH: Component Inspection

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

Check main power window and door lock/unlock switch.

Terr	minal	Main power windo	Continuity	
10	1	Rear LH	UP	
10	7	Rear RH	UP	
1	3	Rear LH	NEUTRAL	Yes
5	7	Rear RH	NEOTIVAL	163
10	3	Rear LH	DOWN	
10	5	Rear RH	DOWN	



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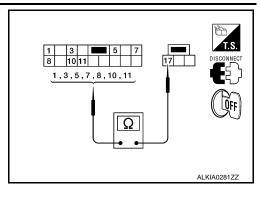
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### < COMPONENT DIAGNOSIS >

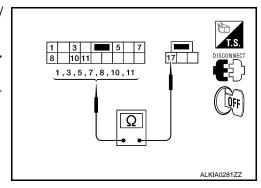
Check continuity between main power window and door lock/ unlock switch (power window lock switch). (Lock operation).

Tern	ninal	Main power window and door lock/unlock switch condition		The state of the s		Continuity
3		Rear LH	UP			
5		Rear RH	OI .	No		
1		Rear LH				
3	17	Near Lit	NEUTRAL			
5	17	Rear RH				
7		ixeai ixii				
1		Rear LH DOWN				
7		Rear RH	DOWN			



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

Terr	minal	Main power window and door lock/unlock switch condition				Continuity
3		Rear LH	UP			
5		Rear RH	O1	Yes		
1		Rear LH				
3	17	Real Ell	NEUTRAL			
5	17	Rear RH				
7		rour rar				
1		Rear LH	Rear LH DOWN			
7		Rear RH	DOWN			



### 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 <a href="PWC-137">PWC-137</a>, "Removal and Installation".

# FRONT POWER WINDOW SWITCH

# FRONT POWER WINDOW SWITCH: Description

INFOID:0000000005385617

- 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:0000000005385618

Power Window And Door Lock/Unlock Switch RH

# ${f 1}$ . 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 <a href="PWC-16">PWC-16</a>, "FRONT POWER WINDOW SWITCH: Diagnosis Procedure".

# FRONT POWER WINDOW SWITCH: Diagnosis Procedure

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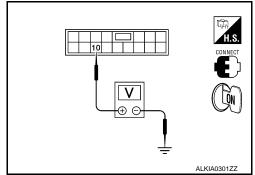
Regarding Wiring Diagram information, refer to PWC-82, "Wiring Diagram (Crew Cab)".

### < COMPONENT DIAGNOSIS >

# 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.

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



### Is the measurement value within the specification?

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

# 2. CHECK HARNESS CONTINUITY

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

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



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

### Is the inspection result normal?

YES >> GO TO 4

NO >> Repair or replace harness.

# 3. CHECK GROUND CIRCUIT

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

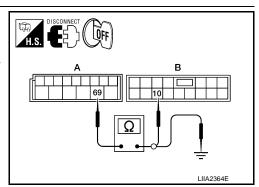
Power window and door lock/unlock switch RH	Terminal	Ground	Continuity	
D105	11		Yes	

### Is the inspection result normal?

YES >> Replace power window and door lock/unlock switch RH. Refer to <a href="PWC-138">PWC-138</a>, "Removal and Installation".

NO >> Repair or replace harness.

### 4. CHECK BCM OUTPUT SIGNAL



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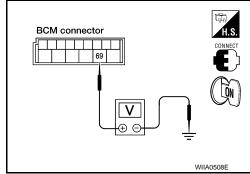
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### < COMPONENT DIAGNOSIS >

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

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



### Is the measurement value within the specification?

YES >> Replace power window and door lock/unlock switch RH. Refer to <a href="https://example.com/PWC-138">PWC-138</a>, "Removal and Installation".

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

REAR POWER WINDOW SWITCH

# REAR POWER WINDOW SWITCH: Description

INFOID:0000000005385620

- 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:0000000005385621

Rear Power Window Switch

# ${\sf 1.}$ CHECK REAR POWER WINDOW MOTOR FUNCTION

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

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

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

# REAR POWER WINDOW SWITCH: Diagnosis Procedure

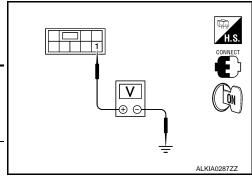
INFOID:0000000005385622

Regarding Wiring Diagram information, refer to <a href="PWC-82">PWC-82</a>, "Wiring Diagram (Crew Cab)".

# 1. CHECK POWER SUPPLY CIRCUIT

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

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



### Is the measurement value within the specification?

YES >> GO TO 2 (Rear power window switch LH)

YES >> GO TO 3 (Rear power window switch RH)

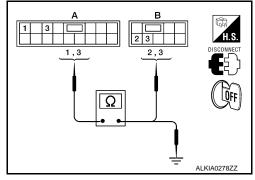
NO >> GO TO 4

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

### < COMPONENT DIAGNOSIS >

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

Main power window and door lock/unlock switch connector	Terminal	Rear power window switch LH connector	Terminal	Continuity
D7 (A)	1	D203 (B)	2	Yes
DI (A)	3	D203 (B)	3	163



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

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

### Is the inspection result normal?

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

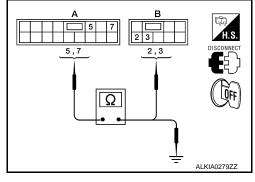
NO >> Repair or replace harness.

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

Turn ignition switch OFF.

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

Main power window and door lock/unlock switch connector	Terminal	Rear power window switch RH connector	Terminal	Continuity
D7 (A)	5	D303 (B)	3	Yes
DI (A)	7	D303 (B)	2	163



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	01	Continuity
D7 (A)	5	Ground	No
Dr (A)	7		NO

### Is the inspection result normal?

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

NO >> Repair or replace harness.

# 4. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.

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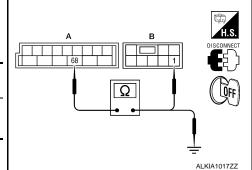
### < COMPONENT DIAGNOSIS >

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

BCM connector	Terminal	•	ver window connector	Terminal	Continuity
M20 (A)	68	LH	D203 (B)	1	Yes
IVIZO (A)	00	RH	D303 (B)	'	res

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

BCM connector	Terminal	Ground	Continuity
M20 (A)	68	Glound	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 <a href="PWC-139">PWC-139</a>, "Removal and Installation - Rear Door <a href="Switch">Switch</a>.

# REAR POWER WINDOW SWITCH: Component Inspection

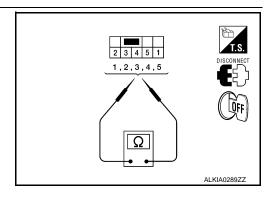
INFOID:000000000538562

### COMPONENT INSPECTION

# 1. CHECK REAR POWER WINDOW SWITCH

Check rear power window switch.

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



### Is the inspection result normal?

NO

YES >> Rear power window switch is OK.

>> Replace rear power window switch. Refer to <a href="PWC-139">PWC-139</a>, "Removal and Installation - Rear Door <a href="Switch">Switch</a>.

# < COMPONENT DIAGNOSIS >

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

# POWER WINDOW MAIN SWITCH: Description

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

# POWER WINDOW MAIN SWITCH: Component Function Check

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Main Power Window And Door Lock/Unlock Switch

# ${f 1}$ . CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH FUNCTION

Does power window motor operate with main power window and door lock/unlock switch operation? Is the inspection result normal?

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

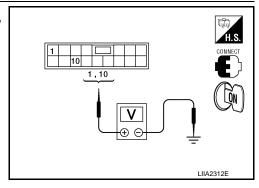
INFOID:0000000005385626

Regarding Wiring Diagram information, refer to PWC-93, "Wiring Diagram (King Cab)".

# 1. CHECK POWER SUPPLY CIRCUIT

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

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



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Is the measurement value within the specification?

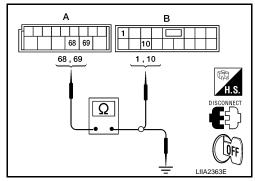
YES >> GO TO 3 NO >> GO TO 2

# 2. CHECK HARNESS CONTINUITY

- Turn ignition switch OFF.
- Disconnect BCM and 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
WZO (A)	69	D13 (B)	1	163

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



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### < COMPONENT DIAGNOSIS >

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

### Is the inspection result normal?

YES >> GO TO 4

NO >> Repair or replace harness.

# 3. CHECK GROUND CIRCUIT

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

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

# Is the inspection result normal?

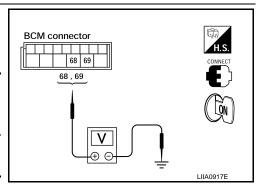
YES >> Replace main power window and door lock/unlock switch. Refer to <a href="https://example.com/PWC-137">PWC-137</a>, "Removal and Installation".

NO >> Repair or replace harness.

# 4. CHECK BCM OUTPUT SIGNAL

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

(+)         (-)         Voltage (V) (Approx.)           BCM connector         Terminal         (-)         (Approx.)           M20         68         Ground         Battery voltage	Terminals			V 16 0.0	
BCM connector Terminal 68 Ground Battery voltage	(+)		(_)	Voltage (V) (Approx.)	
M20 Ground Battery voltage	BCM connector Terminal		(-)	, , ,	
	M20	68	Ground	Potton voltogo	
	IVIZO	69	Ground	Battery voltage	



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Main power window and door

lock/unlock switch connector

### 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 <a href="PWC-137">PWC-137</a>, "Removal and lnstallation".

### FRONT POWER WINDOW SWITCH

# FRONT POWER WINDOW SWITCH: Description

CM aupplies payer

BCM supplies power.

Revision: August 2009

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

# FRONT POWER WINDOW SWITCH : Component Function Check

### Power Window And Door Lock/Unlock Switch RH

# ${f 1}$ . CHECK FRONT POWER WINDOW MOTOR RH FUNCTION

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

**PWC-22** 2010 Titan

INFOID:0000000005385627

INFOID:0000000005385628

# < COMPONENT DIAGNOSIS >

### 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

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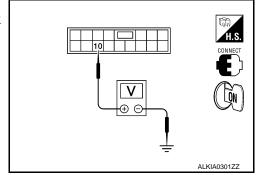
Н

Regarding Wiring Diagram information, refer to <a href="PWC-114">PWC-114</a>, "Wiring Diagram (King Cab)".

# 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.

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



### Is the measurement value within the specification?

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

# 2. CHECK HARNESS CONTINUITY

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

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



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

# DISCONNECT OFF

### Is the inspection result normal?

YES >> GO TO 4

NO >> Repair or replace harness.

# $3.\,$ CHECK GROUND CIRCUIT

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Revision: August 2009 PWC-23 2010 Titan

### < COMPONENT DIAGNOSIS >

- 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

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### Is the inspection result normal?

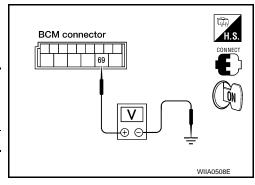
YES >> Replace power window and door lock/unlock switch RH. Refer to <a href="https://example.com/PWC-138">PWC-138</a>, "Removal and Installation".

NO >> Repair or replace harness.

# f 4. CHECK BCM OUTPUT SIGNAL

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

	V-16 0.0			
(+)		(-)	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 <a href="https://example.com/PWC-138">PWC-138</a>, "Removal and Installation".

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

# < COMPONENT DIAGNOSIS >

# POWER WINDOW MOTOR

**DRIVER SIDE** 

DRIVER SIDE : Description

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

DRIVER SIDE : Component Function Check

INFOID:0000000005385631

# 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

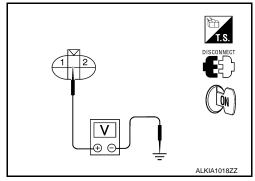
INFOID:0000000005385632

Regarding Wiring Diagram information, refer to PWC-82, "Wiring Diagram (Crew Cab)" or PWC-93, "Wiring Diagram (King Cab)".

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

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

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



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### Is the measurement value within the specification?

YES >> GO TO 2

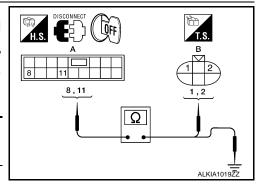
NO

>> Replace main power window and door lock/unlock switch. Refer to <a href="PWC-137">PWC-137</a>, "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.
- Check continuity between main power window and door lock/ unlock switch connector (A) and front power window motor connector LH (B).

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



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### < COMPONENT DIAGNOSIS >

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

Main power window and door lock/unlock switch connector	Terminal		Continuity
D7 (A) (Crew Cab)	8	Ground	No
D15 (A) (King Cab	11		INO

### 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:0000000005385633

### 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	
(+)	(-)	Wiotor 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 <u>GW-18</u>, "Removal and Installation".

### PASSENGER SIDE

# PASSENGER SIDE: Description

INFOID:0000000005385634

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:0000000005385635

# 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

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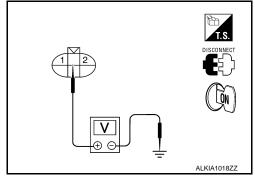
Regarding Wiring Diagram information, refer to <a href="PWC-82">PWC-82</a>, "Wiring Diagram (Crew Cab)" or <a href="PWC-93">PWC-93</a>, "Wiring Diagram (Crew Cab)".

# ${f 1}$ . CHECK FRONT POWER WINDOW SWITCH RH OUTPUT SIGNAL

### < COMPONENT DIAGNOSIS >

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

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



Is the measurement value within the specification?

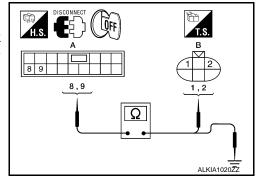
YES >> GO TO 2

NO >> Replace power window and door lock/unlock switch RH. Refer to PWC-138, "Removal and Installation".

# 2. CHECK HARNESS CONTINUITY

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

Power window and door lock/unlock switch RH connector	Terminal	Front power window motor RH connector	Terminal	Continuity
D105 (A)	8	D104 (B)	2	Yes
D103 (A)	9	D 104 (B)	1	163



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

Power window and door lock/unlock switch RH connector	Terminal	Ground	Continuity
D105 (A)	8		No
D 103 (A)	9		NO

### 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".

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

# PASSENGER SIDE: Component Inspection

### COMPONENT INSPECTION

# 1. CHECK FRONT POWER WINDOW MOTOR RH

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

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### < COMPONENT DIAGNOSIS >

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

### Is the inspection result normal?

YES >> Front power window motor RH is OK.

NO >> Replace front power window motor RH. Refer to <u>GW-18</u>, "Removal and Installation".

REAR LH

# **REAR LH: Description**

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

# **REAR LH: Component Function Check**

# 1. CHECK REAR POWER WINDOW MOTOR LH CIRCUIT

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

### Is the inspection result normal?

YES >> Rear power window motor LH is OK.

NO >> Refer to PWC-28, "REAR LH: Diagnosis Procedure"

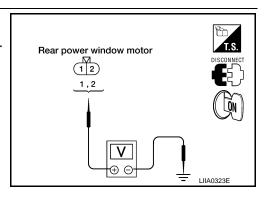
# REAR LH: Diagnosis Procedure

Regarding Wiring Diagram information, refer to PWC-82, "Wiring Diagram (Crew Cab)".

# 1. CHECK REAR POWER WINDOW SWITCH OUTPUT SIGNAL

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

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



INFOID:0000000005385638

INFOID:0000000005385639

INFOID:0000000005385640

### Is the measurement value within the specification?

YES >> GO TO 2

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

# 2. CHECK HARNESS CONTINUITY

### < COMPONENT DIAGNOSIS >

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

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

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

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

Rear power window switch LH connector	Terminal	Ground	Continuity
D203 (A)	5		No
D203 (A)	4		110

### Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace harness.

# ${f 3.}$ 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".

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

# REAR LH: Component Inspection

INFOID:0000000005385641

### COMPONENT INSPECTION

# ${f 1}$ . CHECK REAR POWER WINDOW MOTOR LH

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

Terr	minal	Motor condition	
(+)	(-)	Wotor condition	
2	1	DOWN	
1	2	UP	

### Is the inspection result normal?

YES >> Rear power window motor LH is OK.

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

### REAR RH

# REAR RH: Description

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

# REAR RH: Component Function Check

# 1. CHECK REAR POWER WINDOW MOTOR RH CIRCUIT

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

Is the inspection result normal?

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### < COMPONENT DIAGNOSIS >

YES >> Rear power window motor RH is OK.

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

# REAR RH: Diagnosis Procedure

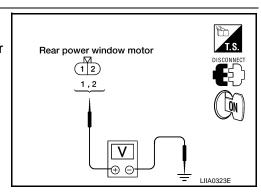
INFOID:0000000005385644

Regarding Wiring Diagram information, refer to PWC-82. "Wiring Diagram (Crew Cab)".

# 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.

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



### Is the measurement value within the specification?

YES >> GO TO 2

NO >> Check rear power window switch RH. Refer to <a href="PWC-18">PWC-18</a>, "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
D303 (A)	4	D304 (B)	1	163

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

A B Ω 1/2 1,2 Ω Ω Ω	H.S.  DISCONNECT  T.S.
-	ALKIA1036GB

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

### Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace harness.

# 3. CHECK REAR POWER WINDOW MOTOR RH

### Check rear power window motor RH.

Refer to PWC-31, "REAR RH: Component Inspection".

### Is the inspection result normal?

### < COMPONENT DIAGNOSIS >

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

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

# REAR RH: Component Inspection

INFOID:0000000005385645

### COMPONENT INSPECTION

# 1. CHECK REAR POWER WINDOW MOTOR RH

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

Terr	minal	Motor condition	
(+)	(–)	Wotor 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 <u>GW-22</u>, "Rear <u>Door Glass Regulator Assembly"</u>.

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### < COMPONENT DIAGNOSIS >

# **ENCODER CIRCUIT CHECK FRONT (CREW CAB)**

**DRIVER SIDE** 

**DRIVER SIDE: Description** 

INFOID:0000000005385646

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:0000000005385647

# 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

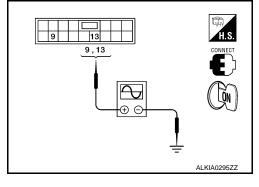
INFOID:0000000005385648

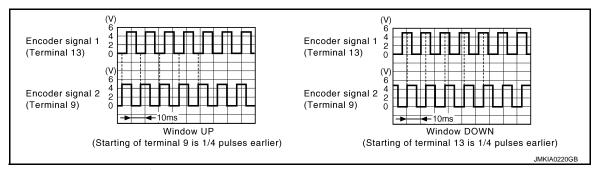
Regarding Wiring Diagram information, refer to PWC-82, "Wiring Diagram (Crew Cab)".

# 1. CHECK ENCODER OPERATION

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

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





### Is the inspection result normal?

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

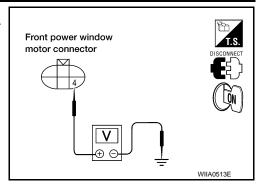
NO >> GO TO 2

# 2. CHECK FRONT POWER WINDOW MOTOR LH POWER SUPPLY

### < COMPONENT DIAGNOSIS >

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

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



# Is the measurement value within the specification?

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

# 3. CHECK HARNESS CONTINUITY 1

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

 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

# H.S. DISCONNECT OFF T.S. A B A ALKIA10217ZZ

### Is the inspection result normal?

YES >> Replace main power window and door lock/unlock switch. Refer to <a href="PWC-137">PWC-137</a>, "Removal and Installation".

NO >> Repair or replace harness.

# 4. CHECK GROUND CIRCUIT

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

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

# Front power window motor connector DISCONNECT COPE LIIA0923E

### Is the inspection result normal?

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

# 5. CHECK HARNESS CONTINUITY 2

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### < COMPONENT DIAGNOSIS >

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

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

# Main power window and door lock/unlock switch connector

### Is the inspection result normal?

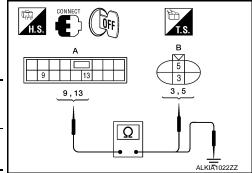
YES >> Replace main power window and door lock/unlock switch. Refer to <a href="https://example.com/PWC-137">PWC-137</a>, "Removal and Installation".

NO >> Repair or replace harness.

### O. CHECK HARNESS CONTINUITY 3

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

Main power window and door lock/unlock switch connector	Terminal	Front power window motor LH connector	Terminal	Continuity
D7 (A)	9	D9 (B)	5	Yes
D1 (A)	13	D9 (B)	3	165



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

Main power window and door lock/unlock switch connector	Terminal	_	Continuity
D7 (A)	9	Ground	No
Di (A)	13		110

# Is the inspection result normal?

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

NO >> Repair or replace harness.

### PASSENGER SIDE

# PASSENGER SIDE : Description

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

PASSENGER SIDE : Component Function Check

# 1. CHECK ENCODER OPERATION

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

### Is the inspection result normal?

YES >> Encoder operation is OK.

NO >> Refer to PWC-34, "PASSENGER SIDE : Diagnosis Procedure".

# PASSENGER SIDE: Diagnosis Procedure

Regarding Wiring Diagram information, refer to PWC-82, "Wiring Diagram (Crew Cab)".

INFOID:0000000005385650

INFOID:0000000005385651

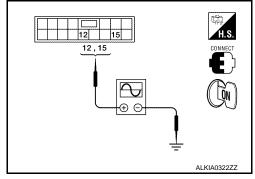
INFOID:0000000005385649

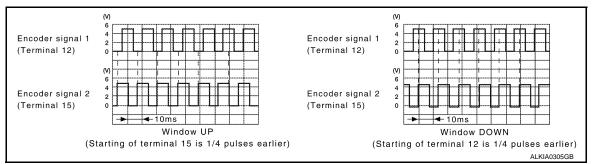
### < COMPONENT DIAGNOSIS >

# 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.

-			
(+)		Signal	
Power window and door lock/unlock switch RH connector		(–)	(Reference value)
D105	12	Ground	Refer to following
D 105	15	Ground	signal





### Is the inspection result normal?

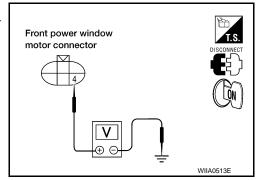
YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".

NO >> GO TO 2

# 2. CHECK FRONT POWER WINDOW MOTOR RH POWER SUPPLY

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

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



# Is the measurement value within the specification?

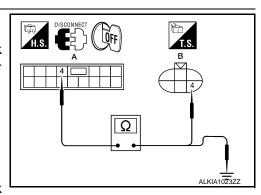
YES >> GO TO 4 NO >> GO TO 3

# 3. CHECK HARNESS CONTINUITY 1

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

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

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



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### < COMPONENT DIAGNOSIS >

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

### Is the inspection result normal?

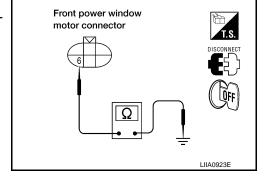
YES >> Replace power window and door lock/unlock switch RH. Refer to <a href="PWC-138">PWC-138</a>, "Removal and Installation".

NO >> Repair or replace harness.

# 4. CHECK GROUND CIRCUIT

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

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



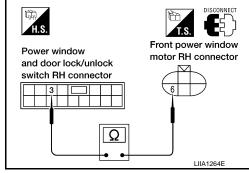
# Is the inspection result normal?

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

# 5. CHECK HARNESS CONTINUITY 2

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

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



### Is the inspection result normal?

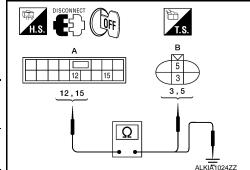
YES >> Replace power window and door lock/unlock switch RH. Refer to <a href="https://example.com/PWC-138">PWC-138</a>, "Removal and Installation".

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
D103 (A)	15	D104 (B)	5	168



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

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

### **ENCODER CIRCUIT CHECK FRONT (CREW CAB)**

### < COMPONENT DIAGNOSIS >

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

NO >> Repair or replace harness.

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### < COMPONENT DIAGNOSIS >

### **ENCODER CIRCUIT CHECK FRONT (KING CAB)**

**DRIVER SIDE** 

**DRIVER SIDE: Description** 

INFOID:0000000005385652

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:0000000005385653

### 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

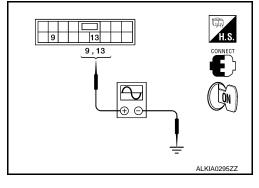
INFOID:0000000005385654

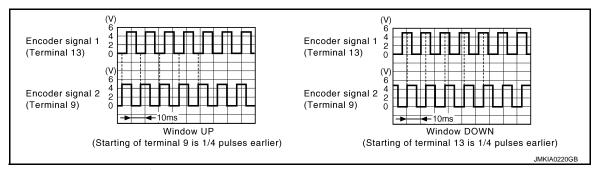
Regarding Wiring Diagram information, refer to PWC-93, "Wiring Diagram (King Cab)".

### 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.

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





### Is the inspection result normal?

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

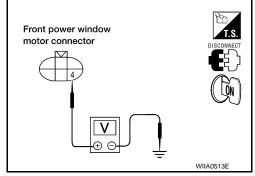
NO >> GO TO 2

### 2. CHECK FRONT POWER WINDOW MOTOR LH POWER SUPPLY

### < COMPONENT DIAGNOSIS >

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

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



### Is the measurement value within the specification?

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

### 3. CHECK HARNESS CONTINUITY 1

- Turn ignition switch OFF.
- 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)	5	D9 (B)	4	Yes

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

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

# LIIA2287E

### Is the inspection result normal?

YES >> Replace main power window and door lock/unlock switch. Refer to PWC-137, "Removal and Installation".

NO >> Repair or replace harness.

### 4. CHECK GROUND CIRCUIT

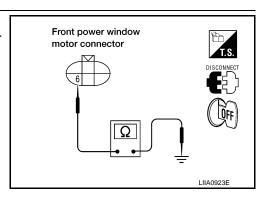
- Turn ignition switch OFF.
- Check continuity between front power window motor LH connector and ground.

Front power window motor LH connector	Ierminai		Continuity	
D9	6		Yes	

### Is the inspection result normal?

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

### ${f 5.}$ CHECK HARNESS CONTINUITY 2



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### < COMPONENT DIAGNOSIS >

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

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

# Main power window and door lock/unlock switch connector Ω MIA0510E

### Is the inspection result normal?

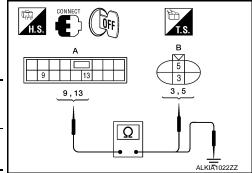
YES >> Replace main power window and door lock/unlock switch. Refer to <a href="PWC-137">PWC-137</a>, "Removal and Installation".

NO >> Repair or replace harness.

### CHECK HARNESS CONTINUITY 3

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

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



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

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

### Is the inspection result normal?

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

NO >> Repair or replace harness.

### PASSENGER SIDE

### PASSENGER SIDE: Description

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

### PASSENGER SIDE : Component Function Check

### 1. CHECK ENCODER OPERATION

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

### Is the inspection result normal?

YES >> Encoder operation is OK.

NO >> Refer to PWC-40, "PASSENGER SIDE : Diagnosis Procedure".

### PASSENGER SIDE: Diagnosis Procedure

Regarding Wiring Diagram information, refer to PWC-93, "Wiring Diagram (King Cab)".

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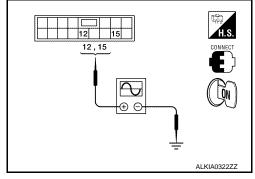
Revision: August 2009 PWC-40 2010 Titan

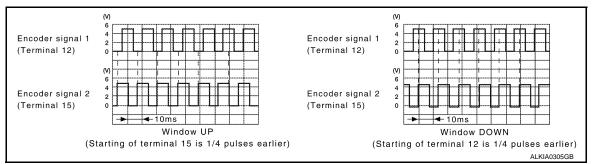
### < COMPONENT DIAGNOSIS >

### 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.

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





### Is the inspection result normal?

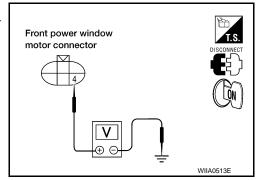
YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".

NO >> GO TO 2

### 2. CHECK FRONT POWER WINDOW MOTOR RH POWER SUPPLY

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

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



### Is the measurement value within the specification?

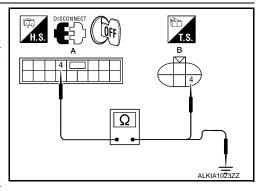
YES >> GO TO 4 NO >> GO TO 3

### 3. CHECK HARNESS CONTINUITY 1

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

Power window and door lock/unlock switch RH connector	Terminal	Front power window motor RH connector	Terminal	Continuity
D105 (A)	4	D104 (B)	4	Yes
4 01 1 11 1	. 1 .		1 1	1 1/ 1

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



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Revision: August 2009 PWC-41 2010 Titan

### < COMPONENT DIAGNOSIS >

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

### Is the inspection result normal?

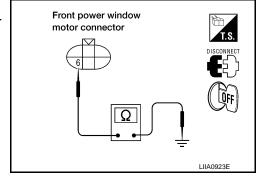
YES >> Replace power window and door lock/unlock switch RH. Refer to <a href="https://example.com/PWC-138">PWC-138</a>, "Removal and Installation".

NO >> Repair or replace harness.

### 4. CHECK GROUND CIRCUIT

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

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



### Is the inspection result normal?

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

### 5. CHECK HARNESS CONTINUITY 2

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

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

# Power window and door lock/unlock switch RH connector

### Is the inspection result normal?

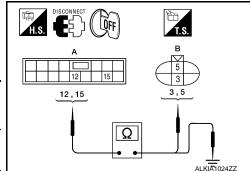
YES >> Replace power window and door lock/unlock switch RH. Refer to <a href="https://example.com/PWC-138">PWC-138</a>, "Removal and Installation".

NO >> Repair or replace harness.

### 6. CHECK HARNESS CONTINUITY 3

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

Power window and door lock/unlock switch RH connector	Terminal	Front power window motor RH connector	Terminal	Continuity
D105 (A)	12	D104 (B)	3	Yes
D103 (A)	15	D 104 (B)	5	163



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

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

### < COMPONENT DIAGNOSIS >

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

NO >> Repair or replace harness.

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**Description** 

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

### Component Function Check

INFOID:0000000005385659

### 1. CHECK FRONT DOOR SWITCH INPUT SIGNAL

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

Monitor item		Condition	
DOOR SW-DR	OPEN	: ON	
DOOK SW-DK	CLOSE	: OFF	
DOOR SW-AS	OPEN	: ON	
DOON SWIAG	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)

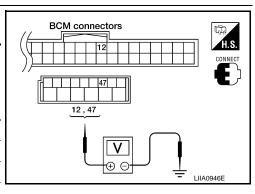
INFOID:0000000005385660

Regarding Wiring Diagram information, refer to PWC-82, "Wiring Diagram (Crew Cab)".

### 1. CHECK FRONT DOOR SWITCH

Check voltage between BCM connector and ground.

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



### Is the measurement value within the specification?

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

NO >> GO TO 2

### 2. CHECK HARNESS CONTINUITY

### < COMPONENT DIAGNOSIS >

- 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	2	162

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

Front door switch connector	Terminal	0	Continuity
B8 (LH)	2	Ground	No
B108 (RH)	2		NO

Is the inspection result normal?

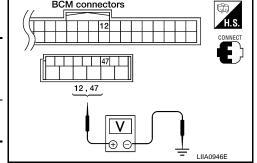
YES >> GO TO 3

NO >> Repair or replace harness.

### 3. CHECK BCM OUTPUT SIGNAL

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

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



Is the measurement value within the specification?

YES >> GO TO 4

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

### 4. CHECK FRONT DOOR SWITCH

Check front door switch.

Refer to PWC-46, "Component Inspection (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)

Regarding Wiring Diagram information, refer to PWC-93, "Wiring Diagram (King Cab)".

### 1. CHECK FRONT DOOR SWITCH

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Front door switch connector

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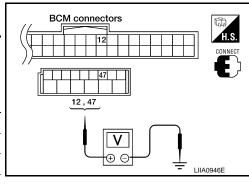
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### < COMPONENT DIAGNOSIS >

Check voltage between BCM connector and ground.

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



### Is the measurement value within the specification?

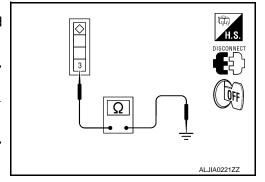
YES >> Replace BCM. Refer to BCS-53, "Removal and Installation".

NO >> GO TO 2

### 2. CHECK FRONT DOOR SWITCH GROUND CIRCUIT

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

Front door switch connector	Terminal	01	Continuity
B8 (LH)	3	Ground	Yes
B108 (RH)	3		162



### Is the inspection result normal?

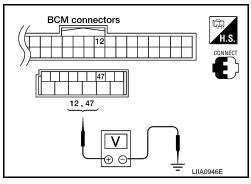
YES >> GO TO 3

NO >> Repair or replace harness.

### $3.\,$ CHECK BCM OUTPUT SIGNAL

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

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



### Is the measurement value within the specification?

YES >> GO TO 4

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

### CHECK FRONT DOOR SWITCH

Check front door switch.

Refer to PWC-47, "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)

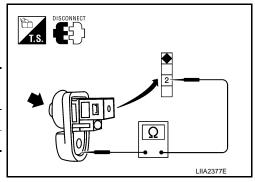
INFOID:0000000005385662

### 1. CHECK FRONT DOOR SWITCH

### < COMPONENT DIAGNOSIS >

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

Terminal		Condition		Continuity
Fron	t door switch	Condition	/I I	Continuity
2	Ground part of	Front door switch	Pushed	No
	door switch	Tioni door switch	Released	Yes



### Is the inspection result normal?

YES >> Inspection End.

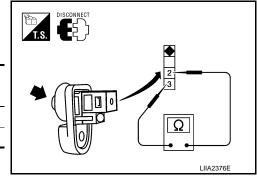
NO >> Replace front door switch.

### Component Inspection (King Cab)

### 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 do	or switch	Condition	,,,,	Continuity
2	3	Front door switch	Pushed	No
	3	Tront door switch	Released	Yes



### Is the inspection result normal?

YES >> Inspection End.

NO >> Replace front door switch.

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Revision: August 2009 PWC-47 2010 Titan

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

### < COMPONENT DIAGNOSIS >

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

Description INFOID:00000000538566

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:0000000005385665

### ${f 1}$ . CHECK DOOR KEY CYLINDER SWITCH INPUT SIGNAL

Check ("KEY CYL LK-SW", "KEY CYL UN-SW") in "DATA MONITOR" mode for "POWER DOOR LOCK SYSTEM" with CONSULT-III. Refer to <u>BCS-16</u>, "DOOR LOCK: CONSULT-III Function (BCM - DOOR LOCK)".

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

### Is the inspection result normal?

YES >> Key cylinder switch is OK.

NO >> Refer to <a href="PWC-48">PWC-48</a>, "Diagnosis Procedure".

### Diagnosis Procedure

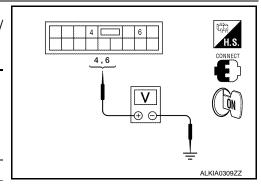
INFOID:0000000005385666

Regarding Wiring Diagram information, refer to PWC-82, "Wiring Diagram (Crew Cab)".

### 1. CHECK DOOR KEY CYLINDER SWITCH INPUT SIGNAL

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

To	erminals			
(+)				Voltage (V)
Main power window and door lock/unlock switch connector	Terminal	(-)	Key position	(Approx.)
	4		Lock	0
D7	4	Ground	Neutral/Unlock	0 5
U	6	Giodila	Unlock	0
	O		Neutral/Lock	5



Is the measurement value within the specification?

YES >> Replace main power window and door lock/unlock switch.

NO >> GO TO 2

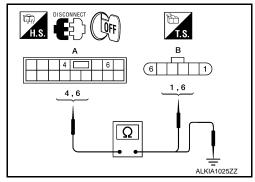
### 2. CHECK DOOR KEY CYLINDER SIGNAL CIRCUIT

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

### < COMPONENT DIAGNOSIS >

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

Main power window and door lock/unlock switch connector	Terminal	Front door lock as- sembly LH (key cylin- der switch) connector		Continuity
D7 (A)	4	D14 (B)	1	Yes
D7 (A)	6	D14 (B)	6	162



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	01	Continuity
D7 (A)	4	Ground	No
	6		INO

### Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace harness.

### 3. CHECK DOOR KEY CYLINDER SWITCH GROUND CIRCUIT

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

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

# 

### Is the inspection result normal?

YES >> GO TO 4

NO >> Repair or replace harness.

### 4. CHECK DOOR KEY CYLINDER SWITCH

Check door key cylinder switch.

Refer to PWC-49, "Component Inspection".

### Is the inspection result normal?

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

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

### Component Inspection

### COMPONENT INSPECTION

### 1. CHECK DOOR KEY CYLINDER SWITCH

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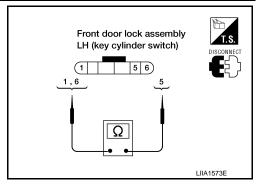
Revision: August 2009 PWC-49 2010 Titan

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

### < COMPONENT DIAGNOSIS >

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

Terminal			
Front door lock (key cylinder sw	,	Key position	Continuity
6	5	Unlock	Yes
O		Neutral/Lock	No
1		Lock	Yes
1		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)

### < COMPONENT DIAGNOSIS >

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

**Description** 

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

### Component Function Check

### 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	Co	ndition	
KEY CYL LK-SW	Lock	: ON	
RET CTE LR-SW	Neutral / Unlock	: OFF	
KEY CYL UN-SW	Unlock	: ON	
KET CTL UN-SW	Neutral / Lock	: OFF	

### Is the inspection result normal?

YES >> Key cylinder switch is OK.

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

### Diagnosis Procedure

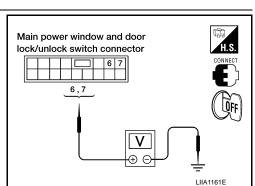
Regarding Wiring Diagram information, refer to PWC-93, "Wiring Diagram (King Cab)".

### 1. CHECK DOOR KEY CYLINDER SWITCH INPUT SIGNAL

1. Turn ignition switch ON.

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

Terminals					
(+)				Voltage (V)	
Main power window and door lock/unlock switch connector	Terminal	(–)	Key position	(Approx.)	
	6		Lock	0	
D15	O	Ground	Neutral/Unlock	0 5 0	
D13	7	Ground	Unlock	0	
	,		Neutral/Lock	5	



Is the measurement value within the specification?

YES >> Replace main power window and door lock/unlock switch.

NO >> GO TO 2

### $2.\,$ CHECK DOOR KEY CYLINDER SIGNAL CIRCUIT

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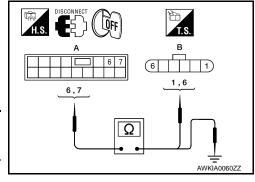
Revision: August 2009 PWC-51 2010 Titan

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

### < COMPONENT DIAGNOSIS >

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

Main power window and door lock/unlock switch connector	Terminal	Front door lock as- sembly LH (key cylin- der switch) connector		Continuity
D15 (A)	6	D14 (B)	1	Yes
D13 (A)	7	D14 (B)	6	162



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

Main power window and door lock/unlock switch connector	Terminal		Continuity
D15 (A)	6	Ground	No
D13 (A)	7		NO

### Is the inspection result normal?

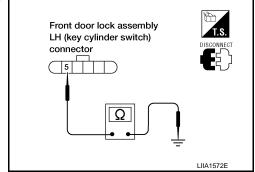
YES >> GO TO 3

NO >> Repair or replace harness.

### 3. CHECK DOOR KEY CYLINDER SWITCH GROUND CIRCUIT

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

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



### 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:0000000005385671

### COMPONENT INSPECTION

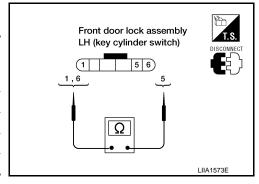
### 1. CHECK DOOR KEY CYLINDER SWITCH

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

### < COMPONENT DIAGNOSIS >

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

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



### Is the inspection result normal?

YES >> Key cylinder switch is OK.

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

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### < COMPONENT DIAGNOSIS >

# POWER WINDOW SERIAL LINK POWER WINDOW MAIN SWITCH

### POWER WINDOW MAIN SWITCH: Description

INFOID:0000000005385672

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:0000000005385673

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

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

Monitor item	Condition		
CDL LOCK SW	LOCK	: ON	
CDL LOCK SW	UNLOCK	: OFF	
CDL UNLOCK SW	LOCK	: OFF	
ODL UNLOCK SW	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".

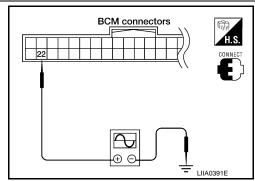
### POWER WINDOW MAIN SWITCH: Diagnosis Procedure

INFOID:0000000005385674

Regarding Wiring Diagram information, refer to <u>PWC-82</u>, "Wiring <u>Diagram (Crew Cab)"</u> or <u>PWC-93</u>, "Wiring <u>Diagram (King Cab)"</u>.

### 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".



### < COMPONENT DIAGNOSIS >

Terminal			<u>.</u>	
(+)		(-)	Signal (Reference value)	
BCM connector	Terminal	(–)	( 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
M18	22	Ground	(V) 15 10 5 0	

### Is the inspection result normal?

YES >> Power window serial link is OK.

NO >> GO TO 2

### 2. CHECK POWER WINDOW SERIAL LINK CIRCUIT

1. Turn ignition switch OFF.

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

BCM connector	Terminal	Main power window and door lock/unlock switch connector	Terminal	Continuity
M18 (A)	22	D7 (B)	14	Yes
WITO (A)	22	D15 (C)	12	163

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

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

### Is the inspection result normal?

YES >> Replace main power window and door lock/unlock switch. Refer to PWC-137, "Removal and Installation".

NO >> Repair or replace harness.

### FRONT POWER WINDOW SWITCH

### FRONT POWER WINDOW SWITCH: Description

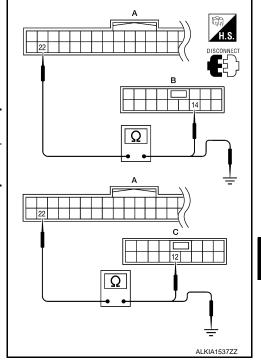
Main power window and door lock/unlock switch, power window and door lock/unlock switch RH and BCM transmit and receive the signal by power window serial link.

The signal mentioned below is transmitted from BCM to main power window and door lock/unlock switch and power window and door lock/unlock switch RH

Keyless power window down signal

The signal mentioned below is transmitted from main power window and door lock/unlock switch to power window and door lock/unlock switch RH

- Front door window RH operation signal
- Power window control by key cylinder switch signal
- Retained power operation signal
- Power window lock switch signal



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Revision: August 2009 PWC-55 2010 Titan

### < COMPONENT DIAGNOSIS >

### FRONT POWER WINDOW SWITCH : Component Function Check

INFOID:0000000005385676

### ${f 1}$ . CHECK POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH OUTPUT SIGNAL

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

Monitor item		Condition	
CDL LOCK SW	LOCK	: ON	
GDE EOOK SW	UNLOCK	: OFF	
CDL UNLOCK SW	LOCK	: OFF	
ODE DIVEOUR SW	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

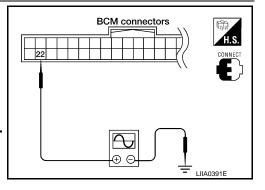
INFOID:0000000005385677

Regarding Wiring Diagram information, refer to PWC-82, "Wiring Diagram (Crew Cab)" or PWC-93, "Wiring Diagram (King Cab)".

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

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

	Terminal		Q
(+)		(_)	Signal (Reference value)
BCM connector	Terminal	(-)	,
M18	22	Ground	(V) 15 10 5 0 10 10 10 10 10 10 10 10 10 10 10 10 1



### Is the inspection result normal?

YES >> Power window serial link is OK.

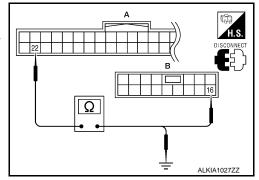
NO >> GO TO 2

2. CHECK POWER WINDOW SERIAL LINK CIRCUIT

### < COMPONENT DIAGNOSIS >

- 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	Ground	No

### Is the inspection result normal?

YES >> Replace main power window and door lock/unlock switch. Refer to <a href="PWC-137">PWC-137</a>, "Removal and Installation".

NO >> Repair or replace harness.

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### POWER WINDOW LOCK SWITCH

### < COMPONENT DIAGNOSIS >

### POWER WINDOW LOCK SWITCH

Description INFOID:0000000005385678

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:0000000005385679

### 1. CHECK POWER WINDOW LOCK SIGNAL

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

- YES >> Replace main power window and door lock/unlock switch. Refer to <a href="PWC-137">PWC-137</a>, "Removal and Installation".
- NO >> Check condition of harness and connector.

### REAR POWER DROP GLASS CIRCUIT CHECK

### < COMPONENT DIAGNOSIS >

### REAR POWER DROP GLASS CIRCUIT CHECK

### Rear Power Drop Glass Circuit Inspection

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Regarding Wiring Diagram information, refer to <a href="PWC-82">PWC-82</a>, "Wiring Diagram (Crew Cab)".

### 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 <a href="PWC-139">PWC-139</a>, "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?

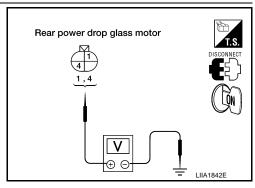
YES >> GO TO 3

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	Term	inals	Condition	Voltage (V) (Approx.)	
Connector	(+)	(-)	Condition		
	1		Up	Battery voltage	
B80		Ground	Down	0	
B00 -	4	Oround	Up	0	
	4		Down	Battery voltage	



Is the inspection result normal?

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

NO >> Repair or replace harness.

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### REAR POWER DROP GLASS DOWN RELAY CHECK

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### REAR POWER DROP GLASS DOWN RELAY CHECK

### Rear Power Drop Glass Down Relay Check

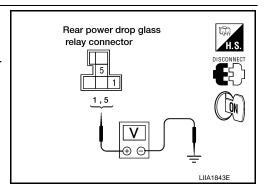
INFOID:0000000005385681

Regarding Wiring Diagram information, refer to <a href="PWC-82">PWC-82</a>, "Wiring Diagram (Crew Cab)".

### 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.
- Check voltage between rear power drop glass down relay connector and ground.

Connector	Term	ninals	Voltage (V)	
Connector	(+)	(-)	(Approx.)	
M155	1	Ground	Battery voltage	
W 133	5	Ground	Dattery Voltage	



### Is the inspection result normal?

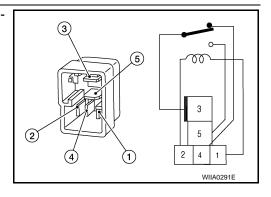
YES >> GO TO 2

NO >> Repair or replace harness.

### 2. CHECK REAR POWER DROP GLASS DOWN RELAY

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

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



### Is the inspection result normal?

YES >> GO TO 3

NO >> Replace rear power drop glass down relay.

### 3. CHECK REAR POWER DROP GLASS DOWN RELAY GROUND CIRCUIT

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

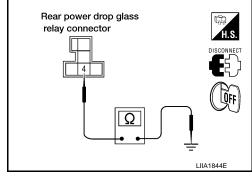
### 4 - Ground

: Continuity should exist.

### Is the inspection result normal?

YES >> GO TO 4

NO >> Repair or replace harness.



### 4. CHECK REAR POWER DROP GLASS DOWN RELAY CIRCUIT

### REAR POWER DROP GLASS DOWN RELAY CHECK

### < COMPONENT DIAGNOSIS >

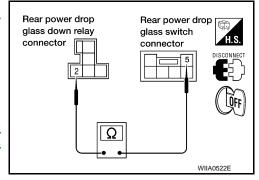
- 1. Disconnect rear power drop glass switch.
- Check continuity between rear power drop glass down relay connector M155 terminal 2 and rear power drop glass switch connector R103 terminal 5.

### 2 - 5

### : Continuity should exist.

### Is the inspection result normal?

- YES >> Replace rear power drop glass switch. Refer to <a href="PWC-139">PWC-139</a>. "Removal and Installation Power Drop Glass Switch".
- NO >> Repair or replace harness.



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### REAR POWER DROP GLASS UP RELAY CHECK

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### REAR POWER DROP GLASS UP RELAY CHECK

### Rear Power Drop Glass Up Relay Check

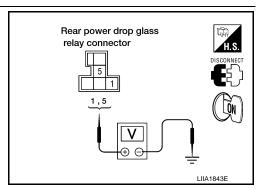
INFOID:0000000005385682

Regarding Wiring Diagram information, refer to <a href="PWC-82">PWC-82</a>, "Wiring Diagram (Crew Cab)".

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

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

Connector	Term	ninals	Voltage (V)	
Connector	(+)	(-)	(Approx.)	
M154	1	Ground	Battery voltage	
WITS4	5	Ground	Dattery voltage	



### Is the inspection result normal?

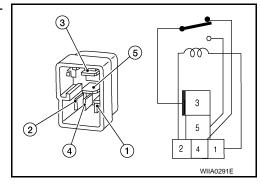
YES >> GO TO 2

NO >> Repair or replace harness.

### 2. CHECK REAR POWER DROP GLASS UP RELAY

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

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



### Is the inspection result normal?

YES >> GO TO 3

NO >> Replace rear power drop glass up relay.

### $3.\,$ CHECK REAR POWER DROP GLASS UP RELAY GROUND CIRCUIT

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

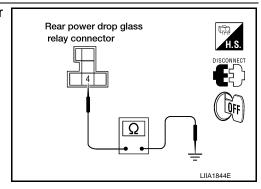
### 4 - Ground

: Continuity should exist.

### Is the inspection result normal?

YES >> GO TO 4

NO >> Repair or replace harness.



### 4. CHECK REAR POWER DROP GLASS UP RELAY CIRCUIT

### REAR POWER DROP GLASS UP RELAY CHECK

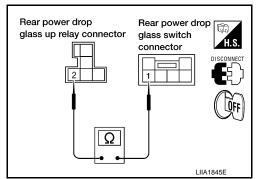
### < COMPONENT DIAGNOSIS >

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

### 2 - 1 : Continuity should exist.

### Is the inspection result normal?

- YES >> Replace rear power drop glass switch. Refer to <a href="PWC-139">PWC-139</a>, "Removal and Installation Power Drop Glass Switch".
- NO >> Repair or replace harness.



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### < ECU DIAGNOSIS >

## **ECU DIAGNOSIS**

## BCM (BODY CONTROL MODULE)

Reference Value

### VALUES ON THE DIAGNOSIS TOOL

AIR COND SW         A/C switch OFF         OFF           AUT LIGHT SYS         Outside of the room is dark         OFF           AUTO LIGHT SW         Lighting switch OFF         OFF           AUTO LIGHT SW         Lighting switch OFF         OFF           Lighting switch OFF         OFF         OFF           Lighting switch AUTO         ON         ON           CDL LOCK SW         Press door lock/unlock switch does not operate         OFF           CDL UNLOCK SW         Door lock/unlock switch to the LOCK side         ON           DOOR SW-AS         Front door Extract switch to the UNLOCK side         ON           DOOR SW-AS         Front door LH closed         OFF           Front door LH closed         OFF           DOOR SW-RD         Rear door LH closed         OFF           DOOR SW-RD         Rear door LH closed         OFF           Rear door LH closed         OFF         OFF           Rear door RH closed         OFF         OFF           DOOR SW-RD         Rear door RH closed         OFF           Rear door RH closed         OFF         OFF           Rear door RH closed         OFF         OFF           Rear door RH closed         OFF         OFF           Rear door RH clo	Monitor Item	Condition	Value/Status
AC switch ON Outside of the room is dark Outside of the room is bright Outside of the room is bright OUTSIDE OFF AUTO LIGHT SW AUTO LIGHT SW AUTO LIGHT SW CDL LOCK SW Door lock/unlock switch does not operate OFF Press door lock/unlock switch to the LOCK side ON ON ODOR SW-AS Front door RH closed Front door RH closed OFF Press door lock/unlock switch to the UNLOCK side ON ON  DOOR SW-AS Front door RH closed OFF Press door lock/unlock switch to the UNLOCK side ON ON  DOOR SW-AS Front door RH closed OFF Press door lock/unlock switch to the UNLOCK side ON ON ON ON  DOOR SW-RL Pront door LH opened ON ON ON OFF Pront door LH closed OFF Press door LH opened ON ON ON OFF Rear door LH opened ON OFF Rear door LH opened ON OFF Rear door RH closed OFF Rear door RH closed OFF Rear door RH opened ON ON OFF Pront Tog lamp switch OFF Front tog lamp switch OFF Front tog lamp switch OFF Front wiper sw	AIR COND SW	A/C switch OFF	OFF
AUTO LIGHT SYS	AIR COND 3W	A/C switch ON	ON
AUTO LIGHT SW	ALIT LICHT SVS	Outside of the room is dark	OFF
Lighting switch AUTO	AUI LIGHT STS	Outside of the room is bright	ON
Lighting switch AUTO	ALITO LICHT SW	Lighting switch OFF	OFF
CDL LOCK SW         Press door lock/unlock switch to the LOCK side         ON           CDL UNLOCK SW         Door lock/unlock switch does not operate         OFF           Press door lock/unlock switch does not operate         OFF           Press door lock/unlock switch to the UNLOCK side         ON           DOOR SW-AS         Front door RH closed         OFF           Front door LH closed         OFF           DOOR SW-DR         Rear door LH closed         OFF           Rear door LH opened         ON         ON           DOOR SW-RR         Rear door RH closed         OFF           Rear door RH opened         ON         ON           ENGINE RUN         Engine stopped         OFF           Engine running         ON         ON           FR FOG SW         Front fog lamp switch OFF         OFF           Front fog lamp switch OFF         OFF           Front washer switch OFF         OFF           Front washer switch OFF         OFF           Front wiper switch OF	AUTO LIGHT SW	Lighting switch AUTO	ON
CDL UNLOCK SW         Press door lock/unlock switch to be LOCK side         ON           CDL UNLOCK SW         Door lock/unlock switch to be unloCK side         ON           DOOR SW-AS         Front door RH closed         OFF           Front door LH closed         OFF           Front door LH closed         OFF           DOOR SW-DR         Front door LH closed         OFF           Rear door LH closed         OFF           Rear door HH closed         OFF           Rear door RH opened         ON           Broad TH closed         OFF           Front wiper switch OFF         OFF           Front fog lamp switch OFF         OFF           Front fog lamp switch OFF         OFF           Front wiper switch OFF         OFF           Front wiper switch OFF         OFF           Front wiper switch OFF         OFF	CDL LOCK SW	Door lock/unlock switch does not operate	OFF
CDL UNLOCK SW         Press door lock/unlock switch to the UNLOCK side         ON           DOOR SW-AS         Front door RH closed         OFF           Front door LH opened         ON           DOOR SW-DR         Front door LH closed         OFF           Front door LH opened         ON           DOOR SW-RL         Rear door LH closed         OFF           Rear door H closed         OFF           Rear door RH closed         OFF           Rear door RH opened         ON           ENGINE RUN         Engine stopped         OFF           Engine stopped         OFF           Engine running         ON           FR FOG SW         Front fog lamp switch OFF         OFF           Front fog lamp switch OFF         OFF           Front washer switch OFF         OFF           Front washer switch OFF         OFF           Front wiper switch OFF	CDL LOCK SW	Press door lock/unlock switch to the LOCK side	ON
DOOR SW-AS         Front door RH closed         OFF           DOOR SW-DR         Front door RH opened         ON           DOOR SW-DR         Front door LH closed         OFF           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 sylich OFF         OFF           Front washer switch OFF         OFF           Front washer switch OFF         OFF           Front wiper switch OFF <td>CDL LINI OCK CW</td> <td>Door lock/unlock switch does not operate</td> <td>OFF</td>	CDL LINI OCK CW	Door lock/unlock switch does not operate	OFF
DOOR SW-AS         Front door LH closed         OFF           DOOR SW-DR         Front door LH closed         OFF           BOOR SW-RL         Rear door LH closed         OFF           DOOR SW-RL         Rear door LH closed         OFF           DOOR SW-RR         Rear door RH closed         OFF           Rear door RH opened         ON         ON           ENGINE RUN         Engine stopped         OFF           Engine stopped         OFF         OFF           Front fog lamp switch OFF         OFF           Front fog lamp switch OFF         OFF           Front washer switch OFF         OFF           Front washer switch OFF         OFF           Front wiper switch OFF         OFF <t< td=""><td>CDL UNLOCK SW</td><td>Press door lock/unlock switch to the UNLOCK side</td><td>ON</td></t<>	CDL UNLOCK SW	Press door lock/unlock switch to the UNLOCK side	ON
Front door RH opened	DOOD OW AC	Front door RH closed	OFF
Front door LH opened	DOOR SW-AS	Front door RH opened	ON
Front door LH opened	DOOD OW DD	Front door LH closed	OFF
DOOR SW-RL         Rear door LH opened         ON           DOOR SW-RR         Rear door RH closed         OFF           Rear door RH opened         ON           ENGINE RUN         Engine stopped         OFF           Engine running         ON           FR FOG SW         Front fog lamp switch OFF         OFF           Front fog lamp switch ON         ON           FR WASHER SW         Front washer switch OFF         OFF           Front washer switch 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 OFF         OFF           LIGHT SW 1ST         Lighting switch OFF         OFF           Lighting switch OFF         OFF           HEAD LAMP SW 1         Headlamp switch OFF         OFF	DOOK SW-DK	Front door LH opened	ON
Rear door LH opened   ON	DOOD OW DI	Rear door LH closed	OFF
DOOR SW-RR         Rear door RH opened         ON           ENGINE RUN         Engine stopped         OFF           Engine running         ON           FR FOG SW         Front fog lamp switch OFF         OFF           Front fog lamp switch ON         ON           FR WASHER SW         Front washer switch OFF         OFF           Front washer switch OF         OFF           Front wiper switch OFF         OFF           Front wiper switch INT         ON           Any position other than front wiper stop position         OFF           Front wiper stop position         ON           HAZARD SW         When hazard switch is not pressed         OFF           Uighting switch OFF         OFF           Lighting switch OFF         OFF	DOOK SW-KL	Rear door LH opened	ON
Rear door RH opened	DOOD OW DD	Rear door RH closed	OFF
ENGINE RUN         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 INT         ON           FR WIPER STOP         Any position other than front wiper stop position         OFF           HAZARD SW         When hazard switch is not pressed         OFF           LIGHT SW 1ST         Lighting switch OFF         OFF           Lighting switch OFF         OFF           Lighting switch OFF         OFF           Lighting switch OFF         OFF	DOOK SW-KK	Rear door RH opened	ON
Engine running	ENCINE DUN	Engine stopped	OFF
Front fog lamp switch ON	ENGINE RUN	Engine running	ON
Front fog lamp switch ON	ED EOC CM	Front fog lamp switch OFF	OFF
FR WASHER SW Front washer switch ON ON FR WIPER LOW Front wiper switch OFF Front wiper switch LO ON FR WIPER HI Front wiper switch OFF Front wiper switch HI ON FR WIPER INT Front wiper switch OFF Front wiper switch OFF Front wiper switch INT ON Any position other than front wiper stop position Front wiper stop position ON When hazard switch is not pressed When hazard switch is pressed ON LIGHT SW 1ST Lighting switch OFF Lighting switch OFF Headlamp switch OFF OFF Lighting switch OFF OFF OFF OFF OFF OFF	FR FOG SW	Front fog lamp switch ON	ON
Front washer switch ON	ED WACHED CW	Front washer switch OFF	OFF
FR WIPER LOW Front wiper switch LO  Front wiper switch OFF Front wiper switch OFF Front wiper switch HI  ON  FR WIPER INT Front wiper switch OFF Front wiper switch INT ON  Any position other than front wiper stop position Front wiper stop position ON  HAZARD SW When hazard switch is not pressed When hazard switch is pressed ON  LIGHT SW 1ST Lighting switch 1st HEAD LAMP SW 1  Front wiper switch OFF OFF OFF OFF ON  Headlamp switch OFF OFF	FR WASHER SW	Front washer switch ON	ON
Front wiper switch LO	ED WIDED LOW	Front wiper switch OFF	OFF
FR WIPER INT Front wiper switch HI  Front wiper switch OFF OFF Front wiper switch INT ON  Any position other than front wiper stop position FR WIPER STOP Any position other than front wiper stop position Front wiper stop position ON  When hazard switch is not pressed OFF When hazard switch is pressed ON  Lighting switch OFF Lighting switch 1st ON  Headlamp switch OFF OFF	FR WIPER LOW	Front wiper switch LO	ON
Front wiper switch HI ON  FR WIPER INT  Front wiper switch OFF Front wiper switch INT ON  Any position other than front wiper stop position  FR WIPER STOP  Any position other than front wiper stop position ON  When hazard switch is not pressed OFF When hazard switch is pressed ON  LIGHT SW 1ST  Lighting switch OFF Lighting switch OFF  Headlamp switch OFF OFF	ED WIDED HI	Front wiper switch OFF	OFF
FR WIPER INT Front wiper switch INT ON  Any position other than front wiper stop position Front wiper stop position ON  HAZARD SW When hazard switch is not pressed When hazard switch is pressed ON  LIGHT SW 1ST Lighting switch OFF Lighting switch OFF  HEAD LAMP SW 1  Front wiper switch INT ON  OFF  Front wiper switch is not pressed ON  OFF  When hazard switch is pressed ON  OFF  Lighting switch OFF OFF  OFF	FR WIPER III	Front wiper switch HI	ON
Front wiper switch INT ON  Any position other than front wiper stop position OFF  Front wiper stop position ON  HAZARD SW When hazard switch is not pressed OFF  When hazard switch is pressed ON  Lighting switch OFF  Lighting switch 1st ON  Headlamp switch OFF  OFF	ED WIDED INT	Front wiper switch OFF	OFF
FR WIPER STOP Front wiper stop position  When hazard switch is not pressed OFF When hazard switch is pressed ON  Lighting switch OFF Lighting switch 1st ON  Headlamp switch OFF OFF	FR WIPER IIVI	Front wiper switch INT	ON
Front wiper stop position ON  When hazard switch is not pressed OFF  When hazard switch is pressed ON  LIGHT SW 1ST  Lighting switch OFF  Lighting switch 1st ON  Headlamp switch OFF  OFF	ED WIDER STOR	Any position other than front wiper stop position	OFF
HAZARD SW  When hazard switch is pressed  ON  Lighting switch OFF  Lighting switch 1st  ON  Headlamp switch OFF  OFF	FR WIPER STOP	Front wiper stop position	ON
When hazard switch is pressed ON  Lighting switch OFF OFF  Lighting switch 1st ON  Headlamp switch OFF OFF	LIAZADD CM	When hazard switch is not pressed	OFF
Light SW 1ST  Lighting switch 1st  ON  Headlamp switch OFF  OFF	HAZAKU ƏVV	When hazard switch is pressed	ON
Lighting switch 1st ON  Headlamp switch OFF  OFF  OFF	LICHT SW 4ST	Lighting switch OFF	OFF
HEAD LAMP SW 1	LIGHT SW 191	Lighting switch 1st	ON
Headlamp switch 1st ON	HEAD LAMP ON 4	Headlamp switch OFF	OFF
	HEAD LAIVIP SVV T	Headlamp switch 1st	ON

### < ECU DIAGNOSIS >

Monitor Item	Condition	Value/Status	
LIEAD LAMD CW 2	Headlamp switch OFF	OFF	_ A
HEAD LAMP SW 2	Headlamp switch 1st	ON	
HI BEAM SW	High beam switch OFF	OFF	В
HI BEAIN SW	High beam switch HI	ON	_
IGN ON SW	Ignition switch OFF or ACC	OFF	_
IGIN ON SW	Ignition switch ON	ON	С
IGN SW CAN	Ignition switch OFF or ACC	OFF	
IGN SW CAN	Ignition switch ON	ON	D
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	1 - 7	
KEY ON SW	Key is removed from key cylinder	OFF	
RET ON SW	Key is inserted to key cylinder	ON	Е
KEYLESS LOCK	LOCK button of key fob is not pressed	OFF	_
RETLESS LOCK	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	G
	Ignition switch ON	ON	<del></del>
DACCING CW	Other than lighting switch PASS	OFF	Н
PASSING SW	Lighting switch PASS	ON	
REAR DEF SW	Rear window defogger switch OFF	OFF	
REAR DEF SW	Rear window defogger switch ON	ON	_
TAIL LAMD CVV	Lighting switch OFF	OFF	
TAIL LAMP SW	Lighting switch 1ST	ON	J
TURN SIGNAL L	Turn signal switch OFF	OFF	
TURIN SIGNAL L	Turn signal switch LH	ON	D)4
TUDN CIONAL D	Turn signal switch OFF	OFF	PW
TURN SIGNAL R	Turn signal switch RH	ON	
VEHICLE SPEED	While driving	Equivalent to speedometer reading	

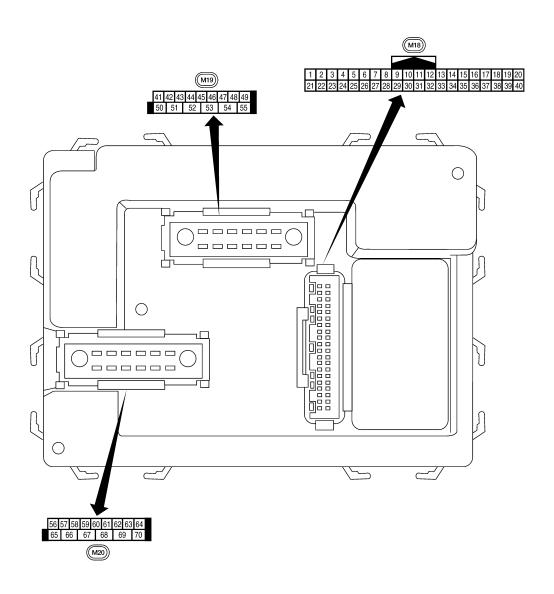
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Terminal Layout



LIIA2443E

Physical Values

### < ECU DIAGNOSIS >

	10/:		Signal		Measuring condition	Deference value or wavefar
Terminal	Wire color	Signal name	input/ output	Ignition switch	Operation or condition	Reference value or waveform (Approx.)
1	BR/W	Ignition keyhole illumi-	Output	OFF	Door is locked (SW OFF)	Battery voltage
ļ	DR/W	nation	Output	OFF	Door is unlocked (SW OFF)	OV
2	SB	Combination switch input 5	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 ***5ms
3	G/Y	Combination switch input 4	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 4 2 0 ++5ms SKIA5292E
4	Υ	Combination switch input 3	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 + +5ms SKIA5291E
5	G/B	Combination switch input 2				(V)
6	V	Combination switch input 1	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	5ms SKIA5292E
		Doorwindow defeaser			Rear window defogger switch ON	0V
9	Y/B	Rear window defogger switch (Crew Cab)	Input	ON	Rear window defogger switch OFF	5V
11	0	Ignition switch (ACC or ON)	Input	ACC or ON	Ignition switch ACC or ON	Battery voltage
12	R/L	Front door switch RH (All)  Rear door switch lower RH (King Cab)	Input	OFF	ON (open)	0V
		Rear door switch up- per RH (King Cab)			OFF (closed)	Battery voltage
13	GR	Rear door switch RH	Innut	OFF	ON (open)	0V
13	GK	(Crew Cab)	Input	OFF	OFF (closed)	Battery voltage
15	L/W	Tire pressure warning check connector	Input	OFF	_	5V

### < ECU DIAGNOSIS >

	Wire		Signal		Measuring condition	Reference value or waveform
Terminal	color	Signal name	input/ output	Ignition switch	Operation or condition	(Approx.)
18	Р	Remote keyless entry receiver and optical sensor (ground)	Output	OFF	_	0V
19	V/W	Remote keyless entry receiver (power sup- ply)	Output	OFF	Ignition switch OFF	(V) 6 4 2 0 ***-50 ms
20	G/W	Remote keyless entry	Input	OFF	Stand-by (keyfob buttons released)	(V) 6 4 2 0 +-50 ms LIIA1894E
20	3,11	receiver (signal)		5.1	When remote keyless entry receiver receives signal from keyfob (keyfob buttons pressed)	(V) 6 4 2 0 + *50 ms
21	G	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF → ON)	Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, ther return to battery voltage.
22	G	BUS	_	_	Ignition switch ON or power window timer operates	(V) 15 10 5 0 200 ms
23	G/O	Security indicator lamp	Output	OFF	Goes OFF $\rightarrow$ illuminates (Every 2.4 seconds)	Battery voltage → 0V
25	BR	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF $\rightarrow$ ON)	Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage.
27	W/R	Compressor ON signal	Input	ON	A/C switch OFF  A/C switch ON	5V 0V
28	L/R	Front blower monitor	Input	ON	Front blower motor OFF Front blower motor ON	Battery voltage 0V
29	W/B	Hazard switch	Input	OFF	ON OFF	0V 5V
31	P/L	Cargo lamp switch	Input	OFF	Cargo lamp switch ON Cargo lamp switch OFF	0  Battery voltage

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

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			Signal		Measuring con-	dition			
Terminal	Wire color	Signal name	input/ output	Ignition switch		or condition	Reference value or waveform (Approx.)		
51	G/Y	Trailer turn signal (right)	Output	ON	Turn right ON		(V) 15 10 500 ms 500 ms		
52	G/B	Trailer turn signal (left)	Output	ON	Turn left ON		(V) 15 10 50 500 ms SKIA3009J		
56	R/G	Battery saver output	Output	OFF	30 minutes aft switch is turne		0V		
				ON	_		Battery voltage		
57	Y/R	Battery power supply	Input	OFF	_		Battery voltage		
58	W/R	Optical sensor	Input	ON	ON When optical sensor is illuminated  When optical sensor is not illuminated		3.1V or more		
30	VV/IX	Optical Selisor	прис	ON			0.6V or less		
		Front door lock as-	_		OFF (neutral) ON (unlock)		0V		
59	G	sembly LH actuator (unlock)	Output	OFF			Battery voltage		
60	G/B	Turn signal (left)	Output	ON	Turn left ON		(V) 15 10 5 0 500 ms		
61	G/Y	Turn signal (right)	Output	ON	Turn right ON		(V) 15 10 5 0 500 ms SKIA3009J		
62	R/W	Step lamp LH and RH	Output	OFF	ON (any door	open)	0V		
	11/11/	Otep lamp Li i anu Kn	Output	OH	OFF (all doors	closed)	Battery voltage		
63	L	Interior room/map lamp	Output	OFF	Any door switch	ON (open) OFF (closed)	0V Battery voltage		
		All door lock actuators			OFF (neutral)		0V		
65	V	(lock)	Output	OFF	ON (lock)		Battery voltage		
		Front door lock actua-		OFF (neutral)			0V		
66	G/Y	tor RH and rear door lock actuators LH/RH (unlock)	Output	OFF	ON (unlock)		Battery voltage		

### < ECU DIAGNOSIS >

Terminal	Wire color	Signal name	Signal input/ output	Measuring condition		Reference value or waveform
				Ignition switch	Operation or condition	(Approx.)
67	В	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 ig- nition switch OFF	0V
					When front door LH or RH is open or power window timer operates	0V
69	W/R	Power window power supply	Output	_	_	Battery voltage
70	W/B	Battery power supply	Input	OFF	_	Battery voltage

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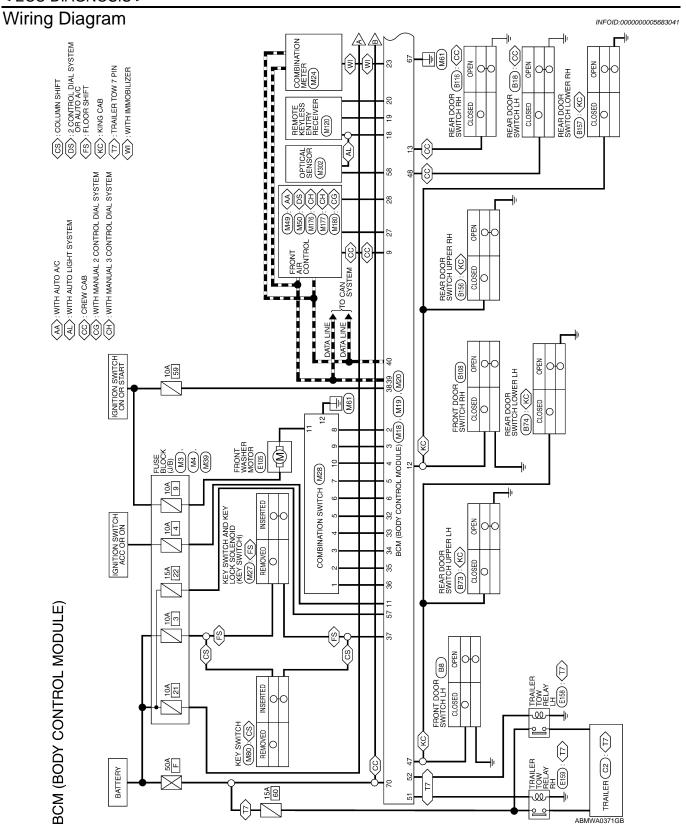
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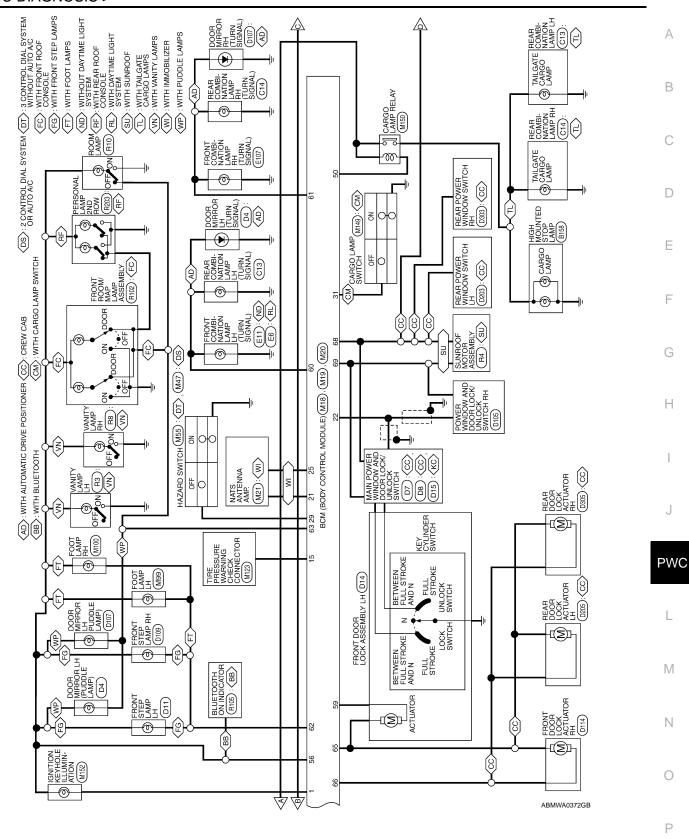
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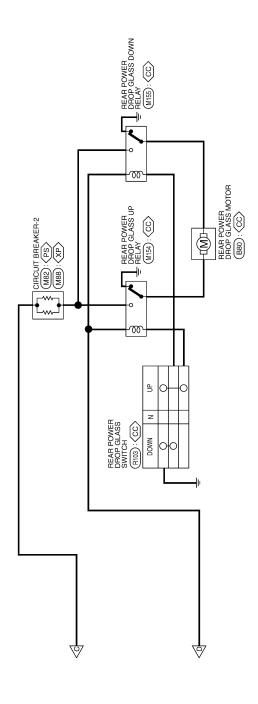
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30DY CONTROL MODULE) CONNECTORS	
<b>3DY CONTROL MODULE) CONNECTOR</b>	
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Marine   BCM   MHO   M	Connector No.		
minal No. Color of Wire 43 44 45 46 48 49 50 - 51 G/B 55 51 G/B 55 55 - 55 55 - 55 55 55 - 55 - 55 55 - 55	Connector Na		M (BODY CONTROL DULE)
Minal No. Color of 43	Connector Co		ПЕ
Minat No. Wire 44	£	1	[ <u>-</u>
Color of Wire Wire Sab RAY	H.S.	50 51	72
SB S	Terminal No.		Signal Name
	41	ı	1
G/P G/P	42	ı	1
S B B C C C C C C C C C C C C C C C C C	43	1	1
SB SB	44	1	_
- SB SB	45	-	_
SB	94	ı	_
B/Y G/Y G/Y	47	SB	DOOR SW (DR)
G/Y G/A	48	R/Y	DOOR SW (RL)
G/Y G/B	49	-	_
G/8 G/8	50	R/Υ	CARGO LAMP OUTPUT
(G/B	51	G/Y	TRAILER FLASHER OUTPUT (RIGHT)
53	25	G/B	TRAILER FLASHER OUTPUT (LEFT)
54 - 55	23	_	-
- 25	54	_	_
	55	1	1

Signal Name	I	ı	KEYLESS AND AUTO LIGHT SENSOR GND	KEYLESS TUNER POWER SUPPLY OUTPUT	KEYLESS TUNER SIGNAL	IMMOBILIZER ANTENNA SIGNAL (CLOCK)	ANTI-PINCH SERIAL LINK (RX,TX)	SECURITY INDICATOR OUTPUT	ı	IMMOBILIZER ANTENNA SIGNAL (RX, TX)	ı	AIRCON SW	BLOWER FAN SW	HAZARD SW	_	CARGO LAMP SW	OUTPUT 5	OUTPUT 4	OUTPUT 3	OUTPUT 2	OUTPUT 1	KEY SW	IGN SW	CAN-H	CAN-L
Color of Wire	1	1	۵	W//	G/W	g	g	0/9	1	BB	ı	W/R	L/R	W/B	_	P/L	R/G	R/Υ	٦	O/B	R/W	B/R	M/L	_	Д
Terminal No.	16	17	18	19	20	21	22	23	24	25	26	22	58	58	90	31	32	33	34	35	98	37	38	39	40

) )					19 20 39 40																
() -)) .		BCM (BODY CONTROL MODULE)	ITE		9 10 11 12 13 14 15 16 17 18 29 30 31 32 33 34 35 36 37 38	Signal Name	KEY RING OUTPUT	INPUT 5	INPUT 4	8 TUPUT 3	INPUT 2	INPUT 1	-	ı	REAR DEFOGGER SW	_	ACC SW	DOOR SW (AS)	DOOR SW (RR)	1	TPMS MODE TRIGGER SW
)	M18		or WHITE		6 7 8 20 22 28 2	Color of Wire	BR/W	SB	G/Y	Υ	G/B	^	ı	ı	Y/B	1	0	B/L	GR	ı	$\mathbb{N}$
. 1) 1/.	Connector No.	Connector Name	Connector Color	明.S.H	3 4 5	Terminal No.	1	2	3	4	5	9	7	8	6	10	11	12	13	14	15

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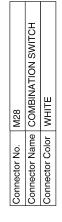
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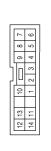
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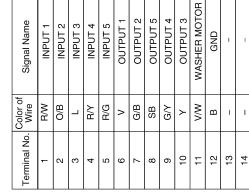
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Signal Name	BATTERY SAVER OUTPUT	BAT (FUSE)	AUTO LIGHT SENSOR INPUT 2	DOOR UNLOCK OUTPUT (DR)	FLASHER OUTPUT (LEFT)	FLASHER OUTPUT (RIGHT)	STEP LAMP OUTPUT	ROOM LAMP OUTPUT	1	DOOR LOCK OUTPUT (ALL)	DOOR UNLOCK OUTPUT (OTHER)	GND (POWER)	POWER WINDOW POWER SUPPLY (LINKED TO RAP)	POWER WINDOW POWER SUPPLY (BAT)	BAT (F/L)
Color of Wire	R/G	Y/R	W/R	g	G/B	G/Y	B/W	٦	ı	^	G/Y	В	M/L	W/R	M/B
Terminal No.	56	22	58	59	09	61	62	63	64	65	99	29	89	69	70

ABMIA1058GB

INFOID:0000000005683042

### Fail-safe index

Fail Safe

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

# **BCM (BODY CONTROL MODULE)**

### < ECU DIAGNOSIS >

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

# DTC Inspection Priority Chart

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

Priority	DTC
1	U1000: CAN COMM CIRCUIT
2	B2190: NATS ANTENNA AMP B2191: DIFFERENCE OF KEY B2192: ID DISCORD BCM-ECM B2193: CHAIN OF BCM-ECM
3	C1729: VHCL SPEED SIG ERR     C1735: IGNITION SIGNAL
4	<ul> <li>C1704: LOW PRESSURE FL</li> <li>C1705: LOW PRESSURE FR</li> <li>C1706: LOW PRESSURE RR</li> <li>C1707: LOW PRESSURE RL</li> <li>C1708: [NO DATA] FL</li> <li>C1709: [NO DATA] FR</li> <li>C1710: [NO DATA] RR</li> <li>C1711: [NO DATA] RR</li> <li>C1711: [NO DATA] RR</li> <li>C1712: [CHECKSUM ERR] FL</li> <li>C1713: [CHECKSUM ERR] FR</li> <li>C1714: [CHECKSUM ERR] RR</li> <li>C1715: [CHECKSUM ERR] RR</li> <li>C1716: [PRESSDATA ERR] FL</li> <li>C1717: [PRESSDATA ERR] FR</li> <li>C1718: [PRESSDATA ERR] FR</li> <li>C1718: [PRESSDATA ERR] RR</li> <li>C1719: [CODE ERR] RR</li> <li>C1720: [CODE ERR] FR</li> <li>C1721: [CODE ERR] RR</li> <li>C1721: [CODE ERR] RR</li> <li>C1722: [CODE ERR] RR</li> <li>C1723: [CODE ERR] RR</li> <li>C1724: [BATT VOLT LOW] FR</li> <li>C1725: [BATT VOLT LOW] FR</li> <li>C1726: [BATT VOLT LOW] RR</li> <li>C1727: [BATT VOLT LOW] RR</li> <li>C1727: [BATT VOLT LOW] RR</li> </ul>

DTC Index

### NOTE:

Details of time display

CRNT: Displays when there is a malfunction now or after returning to the normal condition until turning ignition switch OFF → ON again.

1 - 39: Displayed if any previous malfunction is present when current condition is normal. It increases like 1  $\rightarrow$  2  $\rightarrow$  3...38  $\rightarrow$  39 after returning to the normal condition whenever ignition switch OFF  $\rightarrow$  ON. The counter remains at 39 even if the number of cycles exceeds it. It is counted from 1 again when turning ignition switch OFF  $\rightarrow$  ON after returning to the normal condition if the malfunction is detected again.

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

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# **BCM (BODY CONTROL MODULE)**

# < ECU DIAGNOSIS >

CONSULT display	Fail-safe	Tire pressure monitor warning lamp ON	Reference page
B2190: NATS ANTTENA AMP	_	_	SEC-18
B2191: DIFFERENCE OF KEY	_	_	SEC-21
B2192: ID DISCORD BCM-ECM	_	_	SEC-22
B2193: CHAIN OF BCM-ECM	_	_	SEC-24
C1708: [NO DATA] FL	_	_	<u>WT-14</u>
C1709: [NO DATA] FR	_	_	<u>WT-14</u>
C1710: [NO DATA] RR	_	_	<u>WT-14</u>
C1711: [NO DATA] RL	_	_	<u>WT-14</u>
C1712: [CHECKSUM ERR] FL	_	_	<u>WT-16</u>
C1713: [CHECKSUM ERR] FR	_	_	<u>WT-16</u>
C1714: [CHECKSUM ERR] RR	_	_	<u>WT-16</u>
C1715: [CHECKSUM ERR] RL	_	_	<u>WT-16</u>
C1716: [PRESSDATA ERR] FL	_	_	<u>WT-18</u>
C1717: [PRESSDATA ERR] FR	_	_	<u>WT-18</u>
C1718: [PRESSDATA ERR] RR	_	_	<u>WT-18</u>
C1719: [PRESSDATA ERR] RL	_	_	<u>WT-18</u>
C1720: [CODE ERR] FL	_	_	<u>WT-16</u>
C1721: [CODE ERR] FR	_	_	<u>WT-16</u>
C1722: [CODE ERR] RR	_	_	<u>WT-16</u>
C1723: [CODE ERR] RL	_	_	<u>WT-16</u>
C1724: [BATT VOLT LOW] FL	_	_	<u>WT-16</u>
C1725: [BATT VOLT LOW] FR	_	_	<u>WT-16</u>
C1726: [BATT VOLT LOW] RR	_	_	<u>WT-16</u>
C1727: [BATT VOLT LOW] RL	_	_	<u>WT-16</u>
C1729: VHCL SPEED SIG ERR	_	_	<u>WT-19</u>
C1735: IGNITION SIGNAL	_	_	<u>WT-20</u>

## < ECU DIAGNOSIS >

# POWER WINDOW MAIN SWITCH

Reference Value (Crew Cab)

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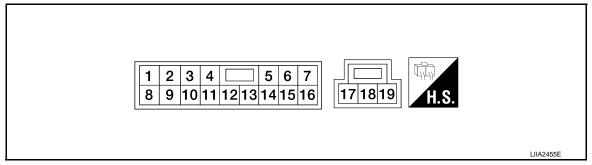
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## **TERMINAL LAYOUT**



## PHYSICAL VALUES

### MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH

Termin (Wire		Description		Condition	Voltage [V]
+	_	Signal name	Input/ Output	Condition	(Approx.)
1 (R/Y)	Ground	Rear power window motor LH UP signal	Output	When rear LH switch in power window main switch is operated UP.	Battery voltage
2 (W/B)	Ground	Encoder ground	_	_	0
3 (R/B)	Ground	Rear power window motor LH DOWN signal	Output	When rear LH switch in power window main switch is operated DOWN.	Battery voltage
4 (L)	Ground	Door key cylinder switch LH LOCK signal	Input	Key position (Neutral → Locked)	5 → 0
5 (L)	Ground	Rear power window motor RH DOWN signal	Output	When rear RH switch in power window main switch is operated DOWN.	Battery voltage
6 (R)	Ground	Door key cylinder switch LH UNLOCK signal	Input	Key position (Neutral → Unlocked)	5 → 0
7 (R)	Ground	Rear power window motor RH UP signal	Output	When rear RH switch in power window main switch is operated UP.	Battery voltage
8 (G/R)	11	Front door power window motor LH UP signal	Output	When front LH switch in power window main switch is operated UP.	Battery voltage
9 (O)	2	Encoder pulse signal 2	Input	When power window motor operates.	(V) 6 4 2 0 10 ms

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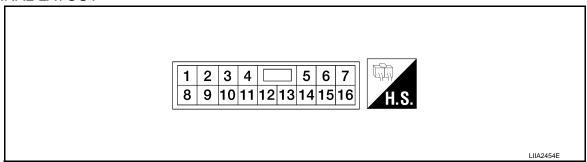
## < ECU DIAGNOSIS >

Termina (Wire o		Description		Condition	Voltage [V]
+	_	Signal name	Input/ Output	Condition	(Approx.)
				IGN SW ON	Battery voltage
10 (W/L)	Ground	RAP signal	Input	Within 45 second after ignition switch is turned to OFF.	Battery voltage
				When front LH or RH door is opened during retained power operation.	0
11 (G/W)	8	Front door power window motor LH DOWN signal	Output	When front LH switch in power window main switch is operated DOWN.	Battery voltage
13 (G/Y)	2	Encoder pulse signal 1	Input	When power window motor operates.	(V) 6 4 2 0 10 ms  JMKIA0070GB
14 (LG/W)	Ground	Power window serial link	Input/ Output	IGN SW ON or power window timer operating.	(V) 15 10 5 0 10 ms 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:0000000005385688

# **TERMINAL LAYOUT**



PHYSICAL VALUES

MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH

# < ECU DIAGNOSIS >

	nal No. e color)	Description		0 155	Voltage [V]
+	_	Signal name	Input/ Output	Condition	(Approx.)
1 (W/R)	Ground	Battery power supply	Input	_	Battery voltage
5 (BR)	Ground	Encoder power supply	Output	When ignition switch ON or power window timer operates	10
6 (L)	Ground	Door key cylinder switch LH LOCK signal	Input	Key position (Neutral → Locked)	5 → 0
7 (R)	Ground	Door key cylinder switch LH UNLOCK signal	Input	Key position (Neutral → Unlocked)	5 → 0
8 (G/R)	11	Front door power window motor LH UP signal	Output	When front LH switch in power window main switch is operated UP.	Battery voltage
9 (O)	3	Encoder pulse signal 2	Input	When power window motor operates.	(V) 6 4 2 0 10 ms JMKIA0070GB
-				IGN SW ON	Battery voltage
10	Ground	RAP signal	Input	Within 45 second after ignition switch is turned to OFF.	Battery voltage
(W/L)	O.Ounu			When front LH or RH door is opened during retained power operation.	0
11 (G/W)	8	Front door power window motor LH DOWN signal	Output	When front LH switch in power window main switch is operated DOWN.	Battery voltage
12 (LG/W)	Ground	Power window serial link	Input/ Output	IGN SW ON or power window timer operating.	(V) 15 10 5 0 10 ms JPMIA0013GB
13 (G/Y)	3	Encoder pulse signal 1	Input	When power window motor operates.	(V) 6 4 2 0 10 ms JMKIA0070GB
14 (W/B)	Ground	Encoder ground	_	_	0
15 (B)	Ground	Ground	_	_	0

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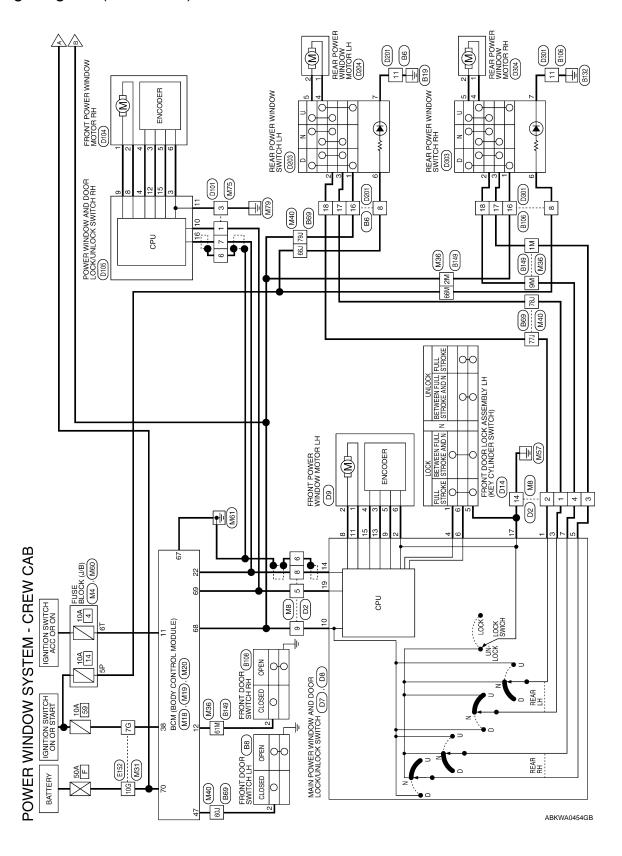
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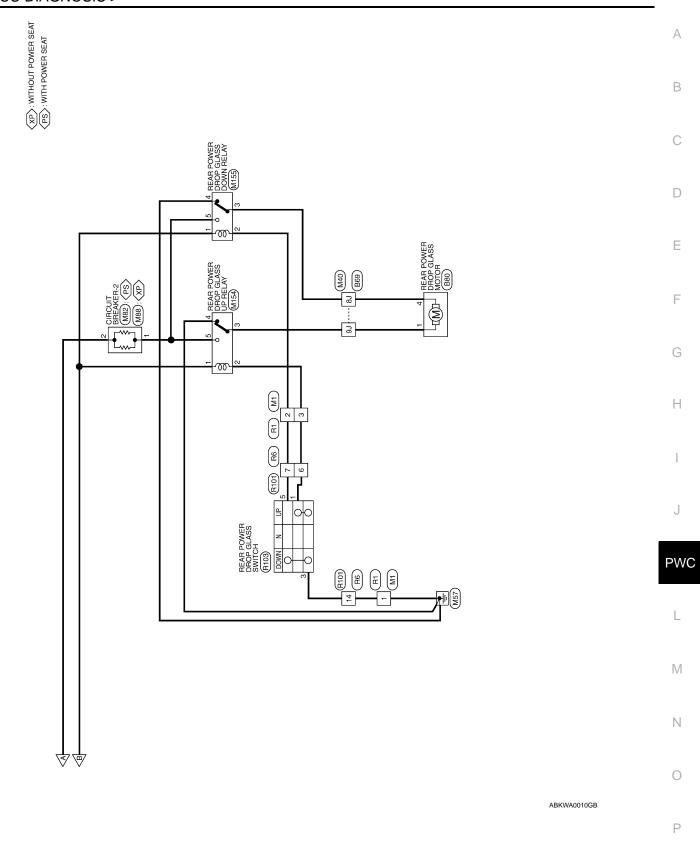
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Wiring Diagram (Crew Cab)

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# POWER WINDOW SYSTEM CONNECTORS - CREW CAB

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

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

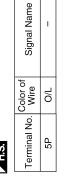


7 6 5 4	Signal Name	1	_	1
7 6 5 16 15 14	Color of Wire	В	M/T	C
H.S.	Terminal No.	-	2	c

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

Connector Name | WIRE TO WIRE

Connector No.



11TE 4   12   1   10   9   8   11   10   10   9   8   11   10   10   10   10   10   10	ı	1	ı	1
Single S	SHIELD	g	M/L	В
Connector Color	9	8	6	14

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







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

Connector No.	. M19		
Connector Na	me BCN MOI	Connector Name BCM (BODY CONTROL MODULE)	
Connector Color	lor WHITE	TE	
原列 H.S.	41 42 43 44 48	42   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)	

205	لظا		H.S.	
	Solo	ctor (	Connector Color	ŏ
Φ	Vam	ctor I	Connector Name	ŏ

Connector Name BCM (BODY CONTROL MODULE) WHITE

Connector Color

M18

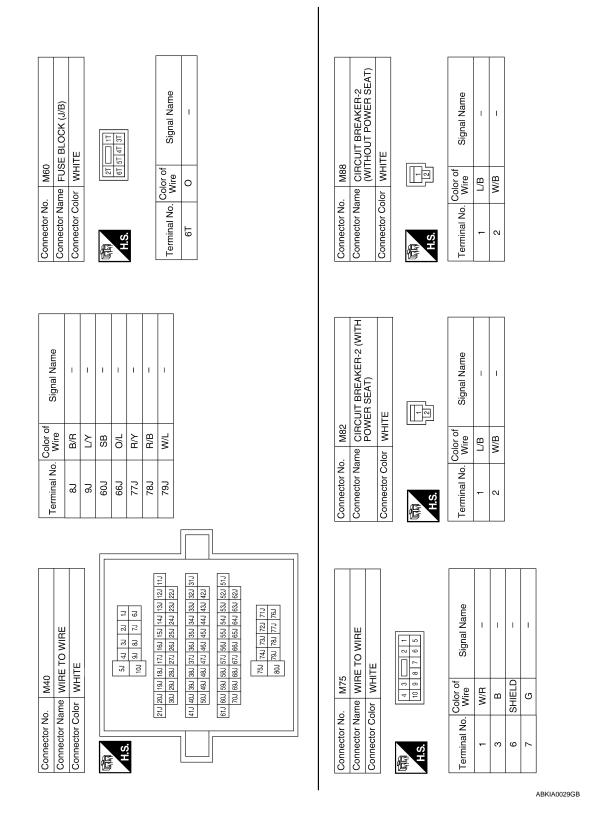
Connector No.

Term	Ferminal No.	Color of Wire	Signal Na
	47	SB	DOOR SI

Signal Name	ACC SW	DOOR SW (AS)	ANTI-PINCH SERIAL LINK (RX, TX)	MS N9I
Color of Wire	0	R/L	g	M/L
Terminal No. Wire	=	12	22	38

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														В
														С
														D
														Е
														F
о Е					am.									G
Signal Name					Signal Name		1   1	1 1						Н
Color of Wire	W/L W/B				Color of Wire	٦ ///	۳ ا	B/L O/L						I
Terminal No.	7G				Terminal No.	M1 Mc	W6	61M 66M						J
		[6]	[2]						[E]		[5]			PWC
		26 16 76 66 66 149 138 128 116 56 149 138 226 56 149 138 22 316	56 646 636 626 516 56 646 636 626 716 776 766					ZM 1M 7M 6M	W 14M 13M 12M 11N	VI 34M 33M 32M 31N	M 54M 53M 52M 51N	72M 71M		L
	Connector Name WIRE TO WIRE Connector Color WHITE	56   46   36   26   16   10   10   10   10   10   10   1	756   746   776		Connector No. M36 Connector Name wide TO wide	WHITE		5M 4M 3M 2M 1M 10M 9M 8M 7M 6M		41M 40M 39M 38M 37M 38M 35M 34M 33M 32M 31M 50M 49M 49M 47M 46M 45M 45M 43M 42M	61 M   60M   59M   58M   57M   56M   55M   54M   59M   57M   61M   70M   69M   68M   67M   66M   65M   64M   63M   62M	75M 74M 73M 72M 71M 80M 79M 78M 77M 76M		M
r No.	r Name   WIF	216 206 1	100 010		or No. M36	r Color WH			21M20M19 30M29	41M 40M 39 50M 49	61M 60M 59 70M 69			Ν
Connector No.	Connector Name	E Si			Connector No.	Connector Color	1	H.S.					_	0
				I								AAKIA0117GB		Р



Revision: August 2009 PWC-86 2010 Titan

Connector Name WIRE TO WIRE  Connector Color WHITE	H.S. 16 26 36 46 56 86 76 166	11G   12G   13G   14G   15G   16G   17G   18G   19G   20G   21G   22G   23G   24G   25G   27G   28G   29G   29G	316 226 336 346 346 356 36 375 386 386 406 416 426 436 446 456 466 476 486 486 506	516 520 530 540 556 566 579 588 599 800 816	1/02   1/03   1/04   1/05	766 776 786 796 806	Color of Signal Name Signal Name	10G W/B –										
Connector No. M155 Connector Name REAR POWER DROP GLASS DOWN RELAY Connector Color BLACK	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	Terminal No. Wire Signal Name		B/R	5 LB -				Connector No. B8	Connector Color WHITE	(京) Line (1975)	Terminal No. Wire Signal Name	2 SB –					
M154  REAR POWER DROP GLASS UP RELAY  BLACK	S	Color of Signal Name W/L -	- 5 ×	B I	L/B				Be	Connector Color WHITE	10 9 8 7 6	Color of Signal Name	O/L –	ı	M/L	R/B –	R/Y –	
Connector No. Connector Name Connector Color	顾 H.S.	al No.	2	ω 4	25				Connector No.	Connector Color	H.S.	Terminal No.	80	-	16	17	18	

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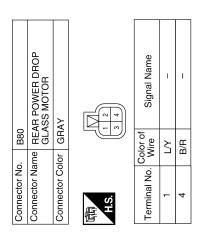
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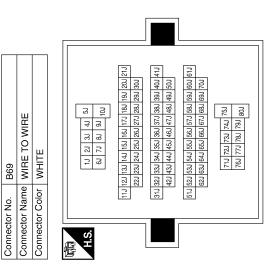
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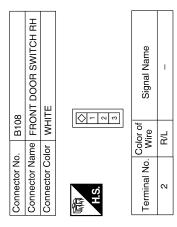
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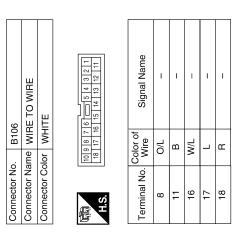
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Signal Name	1	ı	I	ı	ı	ı	_
Color of Wire	B/R	₹	SB	O/L	R/Y	R/B	M/L
Terminal No.	88	6	600	66J	L27	787	79.1







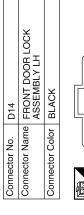
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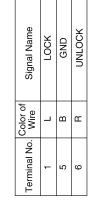
# < ECU DIAGNOSIS >

		А
2) WIRE	R103 REAR POWER DROP GLASS SWITCH WHITE	В
	REAR POW GLASS SW WHITE	С
		D
Connector No. Connector Color Terminal No. Color Te	Connector No.  Connector Name Connector Color  Terminal No.  3  5  LS.	Е
		F
Signal Name	Signal Name	G
Signs		Н
Color of Wire Nine R/L R/L O/L	R101   R101	I
Terminal No. 1M 2M 9M 61M 66M	Connector No. Connector Name Connector Color Terminal No. Will 7 L/ 14 E	J
		PWC
B149	R6	L
WHITE		M
Name   W   Name   W   Name   W   Name   Na	No.   R6   Name   WIF   Name   WIF   Name   WIF   No.   Wire   G   G   B   B   B   B   B   B   B   B	Ν
Connector No. Connector Name Connector Color IIIMI	Connector No.   R6	0
	ABKIA1343GB	
		Р

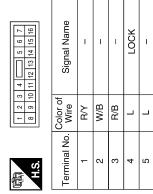
Revision: August 2009 PWC-89 2010 Titan

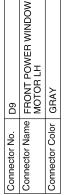
Signal Name	UNLOCK	ı	ı	ı	ı	ı	1	-	ANTI PINICH SERIAL LINK	1	I
Color of Wire	œ	Œ	G/R	0	M/L	G/W	1	G/Y	LG/W	BR	ı
Terminal No.	9	7	8	6	10	11	12	13	14	15	16



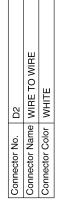


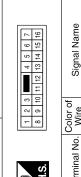
D7	Connector Name AND DOOR LOCK/UNLOCK SWITCH (CREW CAB)	WHITE	
Connector No.	Connector Name	Connector Color WHITE	





Signal Name	ı	ı	ı	ı	I	ı
Color of Wire	G/W	G/R	G/Y	BR	0	M/B
Terminal No.	1	2	င	4	2	9

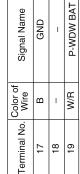




Signal Name	ı	_	1	I	I	ı	I	1	I
Color of Wire	B/B	R/Y	Т	œ	W/R	SHIELD	LG/W	M/L	В
Terminal No. Wire	1	7	ε	4	2	9	8	6	14

	8Q	Connector Name AND DOOR LOCK/UNLOCK SWITCH (CREW CAB)	WHITE
	Connector No.	Connector Name	Connector Color WHITE





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			l								
_	WIRE TO WIRE	<u>I</u> E		4 5 <b>6</b> 7 8 9 10		Signal Name	ı	I	1	-	I
. D201		lor WHITE		1 2 3 4		Color of Wire	O/L	В	M/L	R/B	R/Υ
onnector No.	onnector Name	onnector Color			Ε. Vi	erminal No.	8	11	16	17	18

11	WIRE TO WIRE	WHITE		4 5 6 7 8 9 10	01 01 /-		Signal Name	ı	-	I	_	
D201				1 2 3	2		Color of Wire	0/L	В	M/L	B/B	1
Connector No.	Connector Name	Connector Color			H.S.		Terminal No.	8	11	16	17	
			- '			,						

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



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

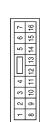
Signal Name	1	-	1 1	GND	I	1	1	I	ANTI PINCH SEPRIAL LINK
Color of Wire	Г	В	W/R	В	G/Y	ī	ı	G/W	LG/W
Terminal No. Wire	80	6	10	11	12	13	14	15	16

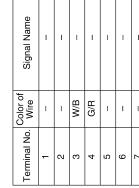
D101	Connector Name WIRE TO WIRE	WHITE	
Sonnector No.	Sonnector Name	Connector Color WHITE	



6 7 8 9 10	Signal Name	1	ı	ı	ı
2 6	Color of Wire	W/R	В	SHIELD	W.G.
H.S.	Ferminal No.	-	က	9	7

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





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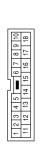
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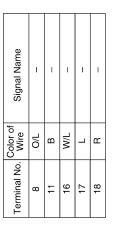
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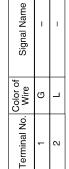






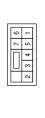






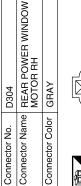


Connector No.	D203
Connector Name	Connector Name REAR POWER WINDOW SWITCH LH
Connector Color WHITE	WHITE





Signal Name	BAT	UP	DOWN	DOWN	UP	I	1
0	M/L	R/Υ	B/B	5	Г	O/L	В
Terminal No.	-	2	3	4	5	9	







Signal Name

Color of Wire KB KB

Terminal No.

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ш	7	2
⊢	ШП	4
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REAR POWER WINDOW SWITCH RH

D303

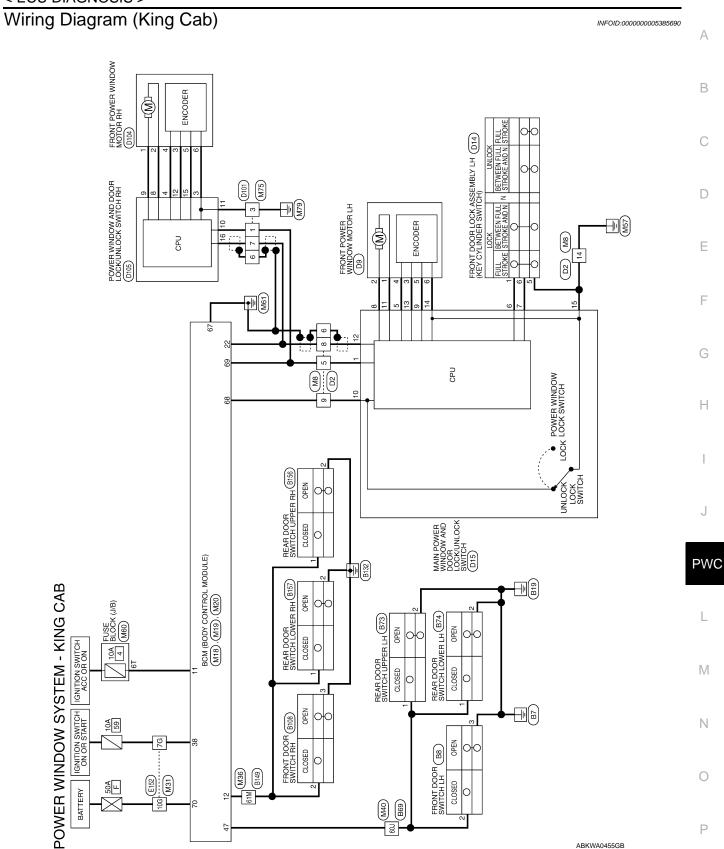
Connector No.

Connector Name Connector Color



$\overline{}$							
Signal Name	BAT	UP	DOWN	DOWN	UP	_	1
	M/L	В	Т	Y/B	BR	O/L	В
Terminal No.	-	2	3	4	5	9	7

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ANTI-PINCH SERIAL LINK (RX, TX)

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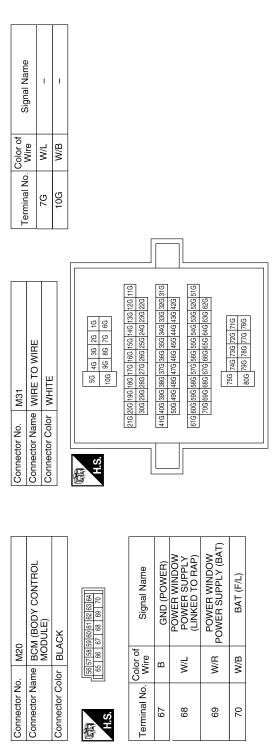
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# POWER WINDOW SYSTEM CONNECTORS - KING CAB

Connector No. M19	Connector Name BCM (BODY CONTROL	MODULE)	Connector Color WHITE		5 2			Terminal No. Wire Signal Name	(BU) WS BOOOL SW (DB)	3			
. M18	Connector Name BCM (BODY CONTROL	MODULE)	lor WHITE			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 00 31 32 33 34 35 36 37 38 39 40		Color of Signal Name		WS JJV		R/L DOOR SW (AS)	
Connector No. M18	Connector Na		Connector Color WHITE		H.S.	1 2 3 4 5 21 22 23 24 25		Terminal No. Wire		+	-	12	
			7									T	_
	RE TO WIRE	HTE	·	5 5 4		Signal Name	ı	ı	ı	ı	ı		
). M8	ame WIF	olor WHI		7 6 16 15		Color of Wire	H/M	SHIELD	ď	5	I/M		۵
Connector No.	Connector Name WIRE	Connector Color		SH SH		Terminal No. Wire	5	9	٥	0	σ:	)	7



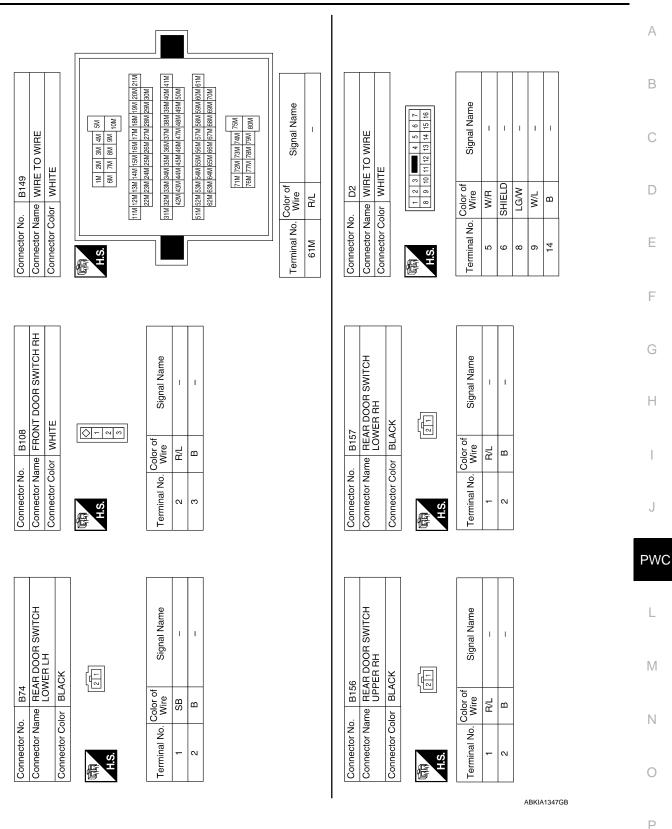
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OCK (J/B) Signal Name		A B
or Name FUSE BL or Color WHITE al No. Wire O O O O O O O O O O O O O O O O O O O		D
Connect Connec		E F
M40    M40    M40    M1RE TO WIRE		G H
nector N ninal No.		I
		PWC
M36   WIRE TO WIRE	Signal Name	L
Connector No.   M36	Terminal No. Wire W/R 3 B B 6 SHIELD 7 G	N
	AAKIA0120GB	Р

Revision: August 2009 PWC-95 2010 Titan

Connector Name         FRONT DOOR SWITCH LH           Connector Color         WHITE           A.S.         Color of Wire         Signal Name           2         SB         -           3         B         -	Connector No. B73 Connector Name REAR DOOR SWITCH UPPER LH Connector Color BLACK  Terminal No. Wire Signal Name  1 SB - 2 B -
Signal Name	Signal Name
Color of Wire L/W W/B	Color of Wire SB
7G 10G	60J
or No. E152  r Name WIRE TO WIRE  or Color WHITE  116 26 36 46 56  66 76 86 96 106  226 226 226 246 256 266 276 286 396 306  126 226 236 246 556 266 276 286 386 306  1276 328 348 446 456 466 476 486 486 506  516 226 356 346 556 566 577 686 586 506 616  516 226 356 346 556 566 577 686 586 576  716 726 736 736 736 736 736 736  766 777 776 786 736 80	Connector No.   B69
Connector No. Connector Name Connector Color [116][1] [2] [316][3] [4] [4]	Connector No. Connector Name Connector Color  11.1. 11.1.
	ABKIA1346GB

### < ECU DIAGNOSIS >



Revision: August 2009 PWC-97 2010 Titan

					_			ı
	WIRE TO WIRE	WHITE	2	Signal Name	I	I	I	1
. D101			<u>- n</u>	Color of Wire	W/R	В	SHIELD	LG/W
Connector No.	Connector Name	Connector Color	H.S.	Terminal No.	-	က	9	7

			1				
	FRONT DOOR LOCK ASSEMBLY LH	BLACK	3 4 5 6	Signal Name	LOCK	GND	UNLOCK
D14		_	-	Color of Wire	_	В	œ
Connector No.	Connector Name	Connector Color	所 H.S.	Terminal No.	-	2	9

Signal Name	LOCK	UNLOCK	ı	I	ı	I	ANTI PINCH SERIAL LINK	I	I	GND	I
Color of Wire	7	Œ	G/R	0	M/L	G/W	LG/W	G/Y	M/B	В	ı
Terminal No.	9	7	8	6	10	11	12	13	14	15	16

	FRONT POWER WINDOW MOTOR LH	АУ	4 2 5 1	Signal Name	ı	ı	ı	ı	ı	1
60		lor GRAY		Color of Wire	G/W	G/R	G/≺	BR	0	M/B
Connector No.	Connector Name	Connector Color	是 H.S.	Terminal No.	-	2	က	4	2	9

Connector No.	, D15	
Connector Name		MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH (KING CAB)
Connector Color	-	WHITE
咸南 H.S.	8 9 10	3 4 6 7 10 11 12 13 14 15 16
Terminal No.	Color of Wire	Signal Name
-	M/R	ı
2	ı	ı
က	ı	ı
4	1	ı
5	BB	ı

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Signal Name	1	1	GND	1	1	1	1	LG/W ANTIPINCH SERIAL LINK
Color of Wire	G	W/R	В	G/Y	ı	ı	G/W	LG/W
Terminal No.	6	10	1	12	13	14	15	16

Connector No.	D105	
Connector Name	POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH	0
Connector Color WHITE	WHITE	
赋 H.S.	1 2 3 4 6 7 8 9 10 11 12 13 14 15 16 16	
Terminal No. Wire	Color of Signal Name	

Connector No.	). D104	14
Connector Name		FRONT POWER WINDOW MOTOR RH
Connector Color	olor GRAY	АУ
原 H.S.		2 2 4 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Terminal No.	Color of Wire	Signal Name
-	ග	ı
2	_	ı
3	G/Y	_

Signal Name	ı	_	I	1	_	I	ı	_	
Color of Wire	1	_	M/B	G/R	-	1	1	٦	
Color of Wire	-	2	3	4	5	9	7	8	

G/W G/W

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Fail Safe

## **FAIL-SAFE CONTROL**

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

### < ECU DIAGNOSIS >

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

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

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

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

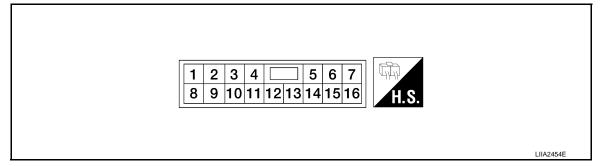
# FRONT POWER WINDOW SWITCH

## < ECU DIAGNOSIS >

# FRONT POWER WINDOW SWITCH

Reference Value

# **TERMINAL LAYOUT**



## PHYSICAL VALUES

### POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH

	nal No. e color)	Description		Condition	Voltage [V]
+	_	Signal name	(Approx.)		
3 (W/B)	Ground	Encoder ground	_	_	0
4 (G/R)	Ground	Encoder power supply	Output	When ignition switch ON or power window timer operates	10
8 (L)	9	Power window motor UP signal	Output	When power window motor is UP at operated.	Battery voltage
9 (G)	8	Power window motor DOWN signal	Output	When power window motor is DOWN at operated.	Battery voltage
10 (W/R)	Ground	Battery power supply	Input	_	Battery voltage
11 (B)	Ground	Ground	_	_	0
12 (G/Y)	3	Encoder pulse signal 1	Input	When power window motor operates.	(V) 6 4 2 0 10 ms JMKIA0070GB

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# FRONT POWER WINDOW SWITCH

# < ECU DIAGNOSIS >

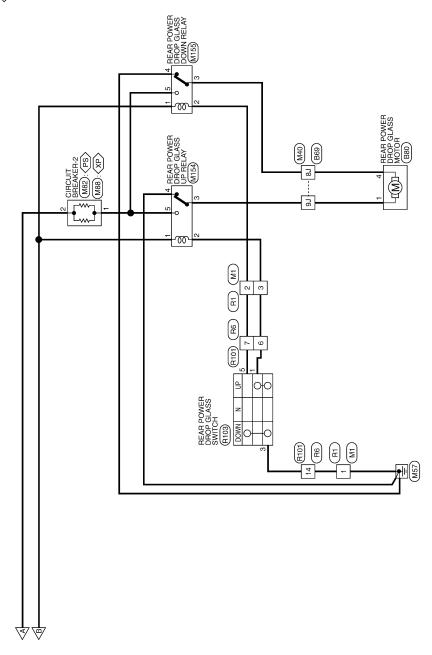
	nal No. e color)	LIGCCIDTION		Condition	Voltage [V]
+	_	Signal name	Input/ Output	Condition	(Approx.)
15 (G/W)	3	Encoder pulse signal 2	Input	When power window motor operates.	(V) 6 4 2 0 10 ms JMKIA0070GB
16 (LG/W)	Ground	Power window serial link	Input/ Output	IGN SW ON or power window timer operating.	(V) 15 10 5 0 10 ms JPMIA0013GB

Wiring Diagram (Crew Cab) INFOID:0000000005683032 Α FRONT POWER WINDOW MOTOR RH В SWITCH RH
(D303) ENCODER REAR POWER WINDOW SWITCH LH C D POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH (D105) M40 B69 @100 Е CPU M36 B149 (M36) F 787 (M40) G Н FRONT DOOR LOCK ASSEMBLY LH (KEY CYLINDER SWITCH)

(D14) FRONT POWER WINDOW MOTOR LH (D9) ENCODER \$ W W W J PWC POWER WINDOW SYSTEM - CREW CAB L CPU IGNITION SWITCH ACC OR ON [2] 10A BCM (BODY CONTROL MODULE) (M18), (M19), (M20) M FRONT DOOR 8108 MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH (D7), (D8) CLOSED Ν IGNITION SWITCH ON OR START 76 FRONT DOOR B8 OPEN 0 REAR 10G E152 BATTERY CLOSED Р

ABKWA0454GB

⟨XP⟩: WITHOUT POWER SEAT
⟨PS⟩: WITH POWER SEAT



ABKWA0010GB

# POWER WINDOW SYSTEM CONNECTORS - CREW CAB

	M4	Connector Name FUSE BLOCK (J/B)	WHITE	7P 6P 5P 4P (	of Signal Name			
		Name	Color	7P 6P 5P 4P 16P 15P 14P 13P	No. Color	1/O		
	Connector No.	Connector	Connector Color WHITE	南 H.S.	Terminal No. Wire	5P		
						ı		ı
		Connector Name WIRE TO WIRE	ІТЕ	7 6 5 4 2 2 1	Signal Name	I	ı	1
	). M1	ame WIF	Connector Color WHITE	7 6 5 16 15 14	Terminal No. Wire	В	N/	ŋ
	Connector No.	ctor Na	ector Co	H.S.	nal No.		2	6

	WIRE TO WIRE	WHITE	13 12 11 10 9 8	Signal Name	1	1	1	1	1	-	ı	-	_
. M8			7 6 5 16 15 14	Color of Wire	B/B	Ρ/Υ	٦	æ	W/R	SHIELD	g	M/L	В
Connector No.	Connector Name	Connector Color	H.S.	Terminal No.	-	2	8	4	2	9	8	6	14

ı		0	Connector Name   PAN / PONTEON
מ		M20	a
4		Connector No.	Connector Name

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

Signal Name	GND (POWER)	POWER WINDOW POWER SUPPLY (LINKED TO RAP)	POWER WINDOW POWER SUPPLY (BAT)	BAT (F/I)
Color of Wire	В	W/L	W/R	W/B
Terminal No. Wire	29	89	69	02

_					_
	BCM (BODY CONTROL MODULE)	ΠE	41   42   43   44   45   46   47   48   49         50   51   52   53   54   55	Signal Name	(מת) WS מססם
. M19	me BCI MO	lor WHITE	41 42 43	Color of Wire	a
Connector No.	Connector Name	Connector Color	O II	Terminal No.	17

	BCM (BODY C MODULE)	WHITE	41   42   43   44   45   46   47   48	f Signa	DOOF
-		_	50 51	Color of Wire	SB
	Connector Name	Connector Color	H.S.	Terminal No.	47

Connector Name | BCM (BODY CONTROL MODULE)

M18

Connector No.

WHITE

Connector Color

	19 20 39 40					
	9 10 11 12 13 14 15 16 17 18 19 29 30 31 32 33 34 35 36 37 38 39	Signal Name	ACC SW	DOOR SW (AS)	ANTI-PINCH SERIAL LINK (RX, TX)	IGN SW
	7 8 27 28	Color of Wire	0	R/L	g	M/L
H.S.	1 2 3 4 5 6 21 22 23 24 25 26	Terminal No.	Ξ	12	52	38

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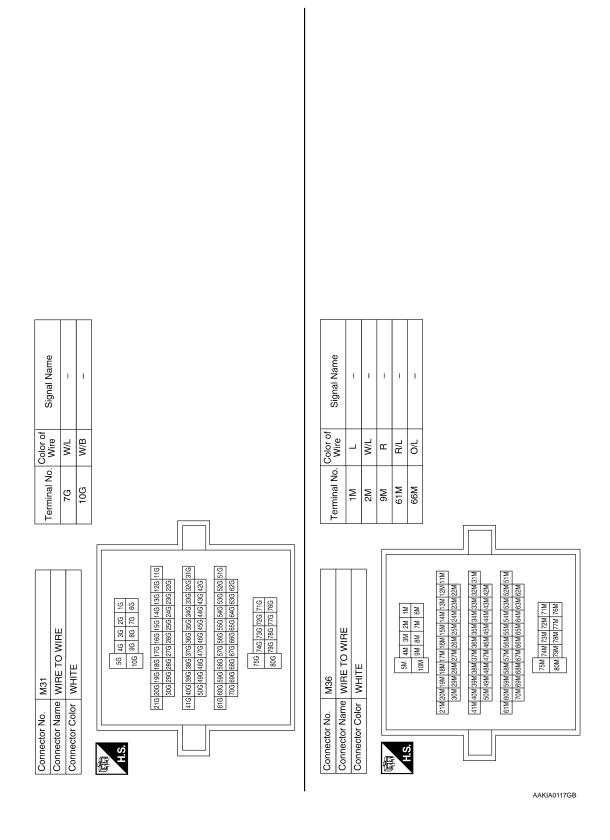
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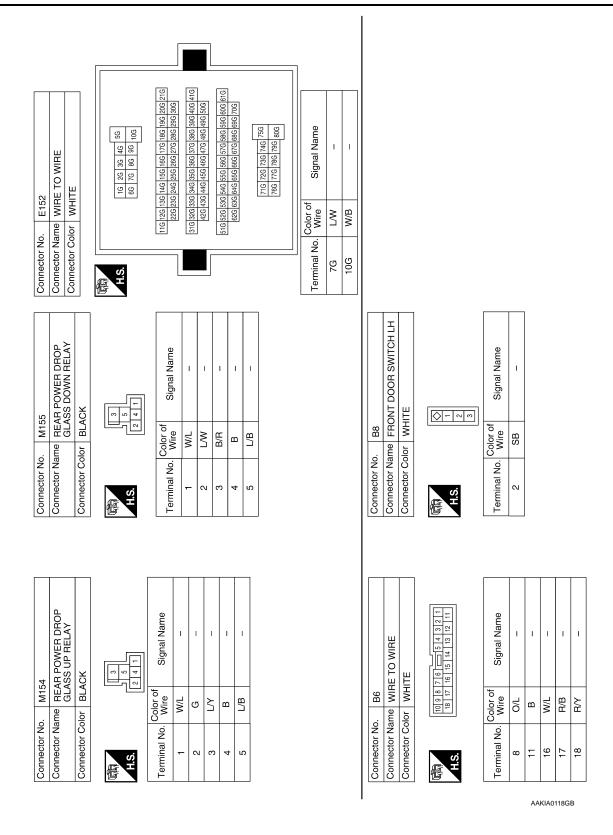


# FRONT POWER WINDOW SWITCH

# < ECU DIAGNOSIS >

Connector No. M60		-		67 57 47			Terminal No. Wire Signal Name	- О 19			Connector No. M88	Connector Name CIRCUIT BREAKER-2 (WITHOUT POWER SEAT)	Connector Color WHITE		H.S.	Color of Signal Name Wire	1 L/B –	2 W/B –					A B C D
		1	<u> </u>									_			Г								F
Signal Name	1	1	ı	1	1	ı	1					CIRCUIT BREAKER-2 (WITH POWER SEAT)				Signal Name	ı	ı					G
											M82	IRCUIT BRE OWER SEA	WHITE										Н
Color of Wire	B/B	S	SB	O/L	R/Υ	R/B	M/L						_			Color of Wire	L/B	M/B					I
Terminal No.	8	6	600	P99	L77	787	L6Z				Connector No.	Connector Name	Connector Color		H.S.	Terminal No.	-	7					J
		7	Г										_		ſ								PW
Lawro	ם ביי			50 41 33 21 11	2		21.1 20.1 19.1 18.1 17.1 16.1 15.1 14.1 13.1 12.1 11.1 30.1 29.1 28.1 27.1 26.1 25.1 24.1 23.1 22.1	(41)   (40)   (39)   (39)   (31)   (39)   (31)				O WIRE		6 5 1		Signal Name	ı	I	I	1			L
Connector No. M40	WHITE	_		্র	35		20J 19J 18J 17 30J 29J 28J 27	50J 49J 48J 48J 55 50J 59J 58J 55 50J 59J 58J 55	800		M75	Connector Name WIRE TO WIRE Connector Color WHITE		10 9 8 7		Color of Wire	W/R	В	SHIELD	5			171
Connector No.	Connector Color						247	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			Connector No.	Connector Name				al No.							Ν
Connec	Connec		E		Ó						Connec	Connec		语 H.S.		Terminal No.	_	8	9	7			0
										ı										AE	BKIA002	9GB	Р

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## FRONT POWER WINDOW SWITCH

# < ECU DIAGNOSIS >

Connector No. B80 Connector Name RFAR POWER DROP	GLASS MOTOR	Connector Color GRAY			-	4 8	Color of Signal Name	Wire	4 B/B -										
Signal Name	1	1	ı	ı	ı	1	1					FRONT DOOR SWITCH RH WHITE			Signal Name	ı			
Color of Wire	B/B	5	SB	O/L	ΡΛ	B/B	M/L				o. B108			- 0 6	Color of Wire	B/L			
Terminal No.	87	6	P09	66J	L77	787	79J				Connector No.	Connector Name	E	H.S.	Terminal No.	2			
Connector No. B69 Connector Name WIRE TO WIRE	Connector Color WHITE	_		11 21 31 41 51	60 77 80 90		11   12   13   14   15   16   17   18   19   20   21   	31   321   321   341   352   351   351   351   351   413	42J 43J 44J 45J 46J 47J 48J 49J 50J	51.4  52.4  53.4  55.4	Connector No.   B106	Connector Name WIRE TO WIRE Connector Color WHITE		10 9 8 7 6 15 14 18 12 11 H.S.	Terminal No. Wire Signal Name	8 O/L –	 16 W/L -	17 L – –	18 R –

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Signal Name Terminal No. Wire Signal Name Terminal No. Wire
6 6 - 1
L/W - 3 B

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# FRONT POWER WINDOW SWITCH

Signal Name	UNLOCK	ı	1	ı	ı	1	1	1	ANTI PINICH SERIAL LINK	1	1
Color of Wire	۳	œ	G/R	0	M/L	G/W	1	G/Y	LG/W	BB	1
Terminal No.	9	7	8	6	10	11	12	13	14	15	16

	MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH (CREW CAB)	ITE 3	2 3 4 5 6 7 9 10 11 12 13 14 15 16	Signal Name	ı	ı
. D2		lor WH	8 9 10	Color of Wire	R/Y	M/B
Connector No.	Connector Name	Connector Color WHITE	向为 H.S.	Terminal No.	-	2

LOCK

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B/B

	WIRE TO WIRE	ITE	3	Signal Name	ı	ı	I	I	I	ı	I	I	I	
D2		lor WHITE	1 2 3 8 9 10	Color of Wire	B/B	₽/A	_	۳	W/B	SHIELD	LG/W	M/L	В	
Connector No.	Connector Name	Connector Color	H.S.	Terminal No.	-	2	က	4	2	9	ω	6	41	

UNLOCK	œ	9
GND	В	2
LOCK	_	-
Signal Name	Color of Wire	Terminal No.
4 O	2 8	H.S.
ACK	olor BLACK	Connector Color
FRONT DOOR LOCK ASSEMBLY LH		Connector Name
	). D14	Connector No.

	FRONT POWER WINDOW MOTOR LH	AY	2 2 4 8 6 1	Signal Name
6 <u>0</u>		lor GRAY		Color of Wire
Connector No.	Connector Name	Connector Color	雨 H.S.	Terminal No.

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

1	17 18 19	Signal Name	GND	ı	TAR WOW-PAT
		Color of Wire	М	1	W/R
	航 H.S.	Terminal No.	17	18	19

G/W G/R G/Y O O W/B

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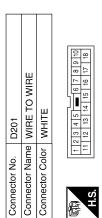
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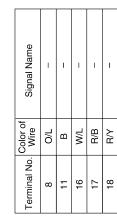
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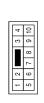
D104	Connector Name FRONT POWER WINDOW MOTOR RH	GRAY	
Connector No.	Connector Name	Connector Color GRAY	



Signal Name	ı	ı	I	I	-	1
Color of Wire	5	٦	G/Y	G/R	G/W	M/B
Terminal No.	-	2	8	4	5	9

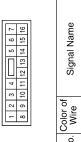
Signal Name	1	I	I	GND	-	I	_	1	ANTI PINCH SEPRIAL LINK
Color of Wire	Г	9	W/R	В	G/Y	I	-	G/W	LG/W
Terminal No.	8	6	10	11	12	13	14	15	16

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



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

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



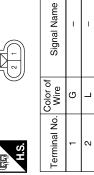
Signal Name	I	ı	1	1	-	I	I
Color of Wire	I	ı	M/B	G/R	_	_	_
Terminal No. Wire	-	2	င	4	2	9	7

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Connector No.		D301
Connector Na	ame M	Connector Name WIRE TO WIRE
Connector Color WHITE	N N	VHITE
H.S.	11 2 3	12 3 4 5 6 6 7 8 9 10
Terminal No. Wire	Color Wire	of Signal Name

Signal Name	1	1	ı	1	_
Color of Wire	O/L	В	M/L	٦	В
Terminal No. Wire	8	11	16	17	18

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



13	REAR POWER WINDOW SWITCH LH	WHITE	3 4 7 1 6 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Signal Name	BAT	٩n	NMOQ	NMOG	d۸	_	_	
. D203			2 3	Color of Wire	M/L	R∕	B/B	G	٦	O/L	В	
onnector No.	onnector Name	onnector Color	H.S.	erminal No.	1	2	က	4	5	9	7	

D304	Connector Name REAR POWER WIND	GRAY	
Connector No.	Connector Name	Connector Color   GRAY	



1	BB	"		٥
	Y/B	>		-
	Solor of Wire	Col	No.	Terminal No.
				酮 H.S.
GRAY	GF	olor	or Cc	Connector Color
REAR MOTO	MS MS	ame	or N	Connector Name

Signal Name ı

Connector No.	D303
Connector Name	REAR POWER WINDOW SWITCH RH
Connector Color WHITE	WHITE
原 H.S.	2 3 4 5 1



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

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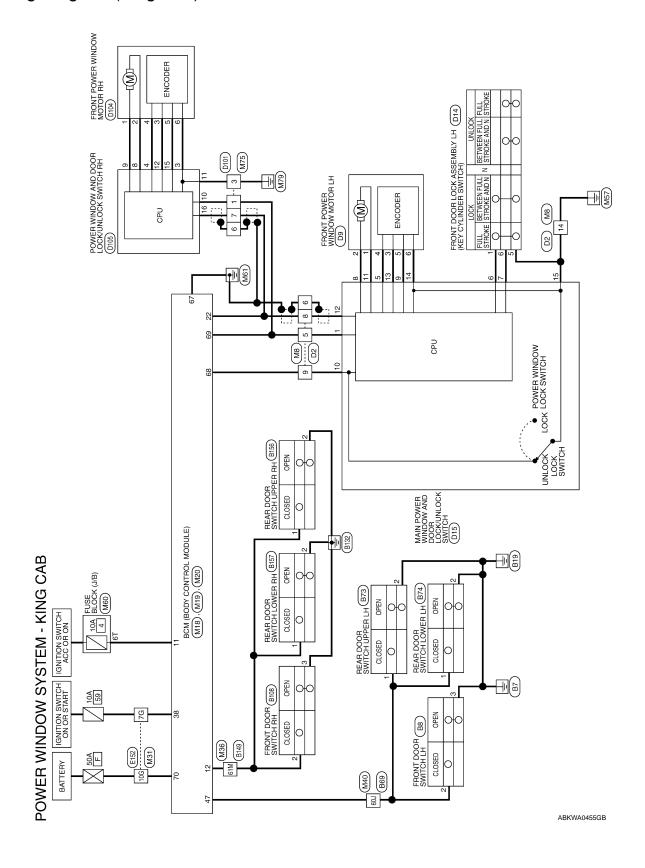
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Wiring Diagram (King Cab)

INFOID:0000000005683033



# POWER WINDOW SYSTEM CONNECTORS - KING CAB

Connector No.	Jo.		Connector No.		M18	Connector No.	M19	
Connector N	lame WIF	Connector Name WIRE TO WIRE	Connecto	r Name E	Connector Name BCM (BODY CONTROL MODIII F)	Connector Name	Connector Name BCM (BODY CONTROL MODILIE)	
Connector Color	Joior WHITE		Connecto	Connector Color WHITE	VHITE	Connector Color WHITE	WHITE	Τ
H.S.	7 6 15 15	6 5 4 3 2 1 15 14 13 12 11 10 9 8	原 H.S.			F. H.S.	41 42 43 44 45 46 47 48 49   8	]
Terminal No. Wire	Color of Wire	Signal Name	1 2 3 4	1 2 3 4 5 6 7 8 9 10 11 12 23 24 25 26 27 28 29 30 31	8 9 10 11 12 13 14 15 16 17 18 19 20 28 29 30 31 32 33 34 35 36 37 38 39 40	<b> </b>		
2	M/R	ı		-     -     -				
9	SHIELD	ı	Terminal	Color of Terminal No.	of Signal Name	Terminal No. Wire	Wire Signal Name	
80	G	ı	]	) A		47	SB DOOR SW (DR)	
σ	I/W			0	ACC SW			1
0	۸۸/۲		12	- R	DOOR SW (AS)			
14	В	_			L			
			22	ڻ ص	ANTI-PINCH SERIAL LINK (RX, TX)			
			38	//M	IGN SW			

		1	]						
Signal Name		ı							
Color of	wire W/L	M/B							
Terminal No	76	10G							
Connector No.   M31	Connector Name WIRE TO WIRE	Connector Color WHITE	56 46 36 26 16 106 96 86 76 66	21G 20G 19G 18G 17G 18G 15G 14G 13G 12G 11G 30G 29G 28G 27G 28G 25G 24G 23G 22G	416 406 396 386 376 366 356 346 336 326 316	50G 49G 48G 47G 46G 45G 44G 43G 42G   10G 60G 53G 53G 53G 53G 53G 53G 53G 53G 53G 53	70G 69G 67G 66G 65G 64G 63G 62G	736 736 776 716	5008
Ö	ပြီ ပြီ	3	T T	L					
	Connector Name BCM (BODY CONTROL MODULE)	, OK	56   57   58   59   60   61   62   63   64	Signal Name	GND (POWER)	POWER WINDOW POWER SUPPLY (LINKED TO RAP)	POWER WINDOW POWER SUPPLY (BAT)	BAT (F/L)	
o. M20	ame BCI	olor BLACK	56 57 58 5	Color of Wire	В	M/L	W/R	M/B	
Connector No.	Connector N	Connector Color	H.S.	Terminal No. Wire	29	89	69	70	

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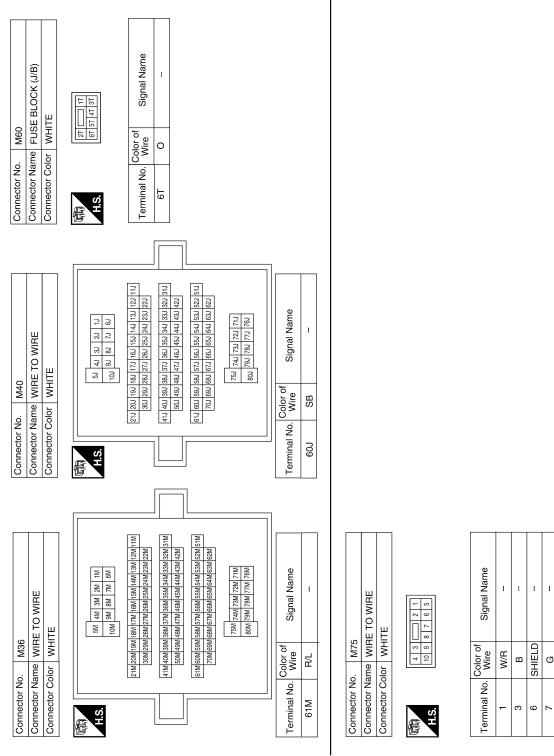
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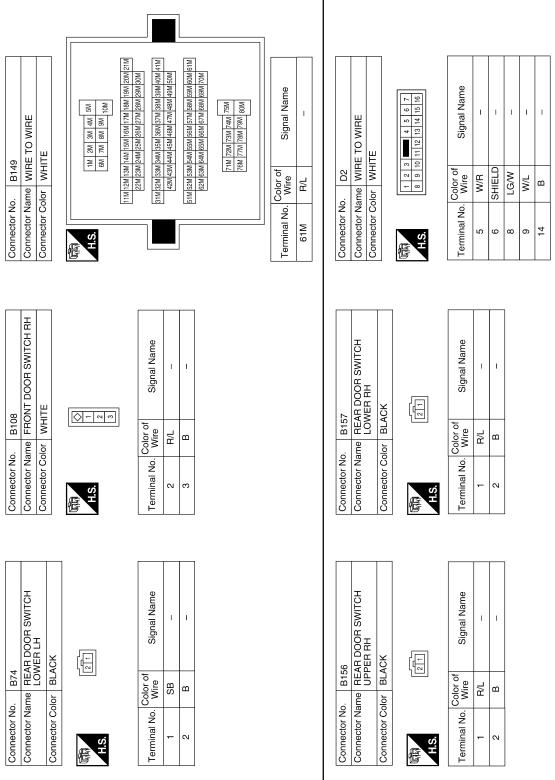
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# FRONT POWER WINDOW SWITCH

Connector No. B8 Connector Name FRONT DOOR SWITCH LH	Connector Color WHITE	H.S.	Terminal No. Wire Signal Name  2 SB 3 B		Connector No. B73 Connector Name REAR DOOR SWITCH UPPER LH Connector Color BLACK	H.S.	Terminal No. Wire Signal Name			A B C D	
me					ame					G	
Signa	1 1				Signal Name					Н	
O	W/B				Color of Wire SB					I	
Terminal No.	10G				Terminal No. 60J					J	
										PW	/C
ш		96 106	776 [186 [196 [206 [216]] 776 [286 [296 [306]] 776 [386 [396]] 776 [386 [396]] 777 [386 [396]] 777 [386 [396]] 778 [386]] 778 [386 [396]] 778 [386]] 778 [386]] 778 [386]] 778 [386]] 778 [386]] 778 [386]] 77	74G 75G 79G 80G	ш	10 To	73 183 193 203 213 73 283 293 303 73 383 393 403 413	7.7 58J 59J 60J 61J	75.7	L	
Connector No. E152 Connector Name WIRE TO WIRE	WHITE	16 26 36 4	11G   12G   13G   14G   15G	71G 72G 73G 74G 75G 76G 77G 78G 79G 80G	Connector No. B69 Connector Name WIRE TO WIRE Connector Color WHITE	1.1 2.1 3.1 4.1 6.1 7.1 8.1 9.1	11.1   12.1   13.1   14.1   15.1   16.1   17.1   18.1   19.1	1424   1434	71) 72) 73) 74) 75) 75) 75) 75) 75) 75) 75) 75) 75) 75	M	
or No. or Name	Connector Color		31G 22 22 31G 32 51G 52 629		or No. or Name or Color		31.3	217		N	
Connector No.	Connect	H.S.			Connector No. Connector Name Connector Color	南 H.S.				0	
									ABKIA1346GB	_	
										Р	

Revision: August 2009 PWC-117 2010 Titan

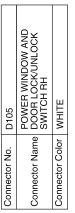
## FRONT POWER WINDOW SWITCH



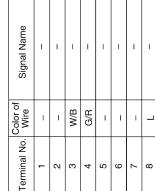
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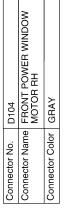
																Γ						l	
										O WIRE			7 8 9 10				Signal Name	ı	1	-	1		
									r No. D101	Connector Name   WIRE TO WIRE	_	1115	5 6 7			-	No. Wire	W/R	В	SHIELD	LG/W		
									Connector No.	Connector Name		£		Ć.			Terminal No.	-	က	9	7		
																		Τ					
FRONT DOOR LOCK ASSEMBLY LH BLACK	4 5 6	Signal Name	LOCK	GND	UNLOCK				Signal Name	LOCK	INI	1	ı	ı	ı	ANTI PINCH		1	GND	1			
	1 2 3	Color of Wire	_	В	Œ				Color of Wire	7	α	G/R	0	M/L	G/W	LG/W	7/5	W/B	В	ı			
Connector Name	H.S.	Terminal No.	-	5	9				Terminal No.	9	7	∞	6	10	7	12	13	14	15	16			
×							<u> </u>	]		<u></u>													
FRONT POWER WINDOW MOTOR LH	2 4 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Signal Name	1	1	ı	1	ı			MAIN POWER WINDOW AND DOOR LOCK/UNLOCK	CH (KING CAB)			2 3 4 5 5 6 7	01 01 +1 01 71		Signal Name	_	ı	1	ı	1	
<del> </del>	<u> </u>	Color of Wire	g/W	G/R	G/Y	BB	0					olor WHITE		1 2 3 4	2 8	1000	Wire	M/R	ı	ı	ı	BB	
Connector Name	H.S.	Terminal No.	-	2	က	4	22		Connector No.	Connector Name		Connector Color	4	E	H.S.		Terminal No.	1	2	ဗ	4	വ	
Connector Nan				<u> </u>				1					Ľ	<u> </u>									

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			_	_		
Signal Name	ı	I	I	ı	I	I
Color of Wire	g	7	G/Y	G/R	G/W	M/B
Terminal No.	-	2	3	4	5	9

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Fail Safe INFOID:0000000005385695

## **FAIL-SAFE CONTROL**

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

## FRONT POWER WINDOW SWITCH

## < ECU DIAGNOSIS >

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

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

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

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

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**PWC-121** Revision: August 2009 2010 Titan В

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## NONE OF THE POWER WINDOWS CAN BE OPERATED USING ANY SWITCH

< SYMPTOM DIAGNOSIS >

# SYMPTOM DIAGNOSIS

# NONE OF THE POWER WINDOWS CAN BE OPERATED USING ANY SWITCH

## Diagnosis Procedure

INFOID:0000000005385696

# 1. CHECK BCM POWER SUPPLY AND GROUND CIRCUIT

Check BCM power supply and ground circuit.

Refer to BCS-30, "Diagnosis Procedure".

## Is the inspection result normal?

YES >> GO TO 2

NO >> Repair or replace the malfunctioning parts.

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

Check power window switch main power supply and ground circuit.

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

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

YES >> GO TO 3

NO >> Repair or replace the malfunctioning parts.

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

Check main power window and door lock/unlock switch serial circuit.

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

## Is the inspection result normal?

YES >> GO TO 4

NO >> Repair or replace the malfunctioning parts.

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

Check main power window and door lock/unlock switch.

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

# < SYMPTOM DIAGNOSIS > DRIVER SIDE POWER WINDOW ALONE DOES NOT OPERATE Α **Diagnosis Procedure** INFOID:0000000005385697 1. CHECK FRONT POWER WINDOW MOTOR LH В Check front power window motor LH. Refer to PWC-25, "DRIVER SIDE: Component Function Check". C Is the inspection result normal? YES >> Inspection End. NO >> Check intermittent incident. Refer to GI-38, "Intermittent Incident". D Е F Н J L

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## FRONT PASSENGER SIDE POWER WINDOW ALONE DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

# FRONT PASSENGER SIDE POWER WINDOW ALONE DOES NOT OPERATE

## Diagnosis Procedure

INFOID:0000000005385698

# 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.

# ${f 3.}$ 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

# < SYMPTOM DIAGNOSIS > REAR LH SIDE POWER WINDOW ALONE DOES NOT OPERATE Α Diagnosis Procedure INFOID:0000000005385699 1. CHECK REAR POWER WINDOW SWITCH LH В Check rear power window switch LH. Refer to PWC-18, "REAR POWER WINDOW SWITCH: Component Function Check". C Is the inspection result normal? YES >> GO TO 2 NO >> Repair or replace the malfunctioning parts. D 2. CHECK REAR POWER WINDOW MOTOR LH Check rear power window motor LH. Refer to PWC-28, "REAR LH: Component Function Check". Е Is the inspection result normal? YES >> Inspection End. >> Check intermittent incident. Refer to GI-38, "Intermittent Incident". NO F Н J **PWC** L M Ν

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## REAR RH SIDE POWER WINDOW ALONE DOES NOT OPERATE

## < SYMPTOM DIAGNOSIS >

# REAR RH SIDE POWER WINDOW ALONE DOES NOT OPERATE

# Diagnosis Procedure

INFOID:0000000005385700

# 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 <a href="GI-38">GI-38</a>, "Intermittent Incident".

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

< SYMPTOM DIAGNOSIS >

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

# Diagnosis Procedure

INFOID:0000000005385701

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# 1. CHECK DOOR WINDOW SLIDING PART

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

## Is the inspection result normal?

YES >> GO TO 2

NO >> Repair or replace the malfunctioning parts.

# 2. CHECK ENCODER CIRCUIT

## Check encoder circuit.

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

## Is the inspection result normal?

YES >> Inspection End.

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

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

## < SYMPTOM DIAGNOSIS >

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

## Diagnosis Procedure

INFOID:0000000005385702

# 1. CHECK DOOR WINDOW SLIDING PART

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

## Is the inspection result normal?

YES >> GO TO 2

NO >> Repair or replace the malfunctioning parts.

# 2. CHECK ENCODER CIRCUIT

## Check encoder circuit.

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

## Is the inspection result normal?

YES >> Inspection End.

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

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

## < SYMPTOM DIAGNOSIS >

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

# Diagnosis Procedure

# 1. CHECK ENCODER

Check encoder.

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

## Is the inspection result normal?

YES >> Inspection End.

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

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

## < SYMPTOM DIAGNOSIS >

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

# Diagnosis Procedure

INFOID:0000000005385704

# 1. CHECK ENCODER

Check encoder.

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

## Is the inspection result normal?

YES >> Inspection End.

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

# POWER WINDOW RETAINED POWER OPERATION DOES NOT OPERATE PROPERLY

## < SYMPTOM DIAGNOSIS >

# POWER WINDOW RETAINED POWER OPERATION DOES NOT OPER-ATE PROPERLY

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**Diagnosis Procedure** 

INFOID:0000000005385705

# 1. CHECK FRONT DOOR SWITCH

Check front door switch.

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

## Is the inspection result normal?

YES >> Inspection End.

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

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## DOES NOT OPERATE BY KEY CYLINDER SWITCH

## < SYMPTOM DIAGNOSIS >

# DOES NOT OPERATE BY KEY CYLINDER SWITCH

# Diagnosis Procedure

INFOID:0000000005385706

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

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

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

## Is the inspection result normal?

YES >> Inspection End.

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

## **KEYLESS POWER WINDOW DOWN DOES NOT OPERATE**

## < SYMPTOM DIAGNOSIS >

# KEYLESS POWER WINDOW DOWN DOES NOT OPERATE

# Diagnosis Procedure

INFOID:0000000005385707

# 1. CHECK KEYFOB FUNCTION

Check keyfob function.

Refer to <u>BCS-19</u>, "<u>MULTIREMOTE ENT</u>: <u>CONSULT-III Function (BCM - MULTIREMOTE ENT)"</u> with remote keyless entry system.

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Is the inspection result normal?

YES >> Check intermittent incident. Refer to <u>GI-38, "Intermittent Incident".</u>
NO >> Replace BCM. Refer to <u>BCS-53, "Removal and Installation"</u>.

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## POWER WINDOW LOCK SWITCH DOES NOT FUNCTION

## < SYMPTOM DIAGNOSIS >

# POWER WINDOW LOCK SWITCH DOES NOT FUNCTION

# Diagnosis Procedure

INFOID:0000000005385708

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

Replace main power window and door lock/unlock switch.

Refer to PWC-137, "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**

< SYMPTOM DIAGNOSIS >	
REAR POWER DROP GLASS DOES NOT OPERATE	А
Diagnosis Procedure	A
1. CHECK BCM POWER SUPPLY AND GROUND CIRCUIT	В
Check BCM power supply and ground circuit. Refer to BCS-30, "Diagnosis Procedure".	
Is the inspection result normal?	С
YES >> GO TO 2 NO >> Repair or replace the malfunctioning parts.	
2. CHECK REAR POWER DROP GLASS SWITCH	D
Check rear power drop glass switch.	
Refer to PWC-59, "Rear Power Drop Glass Circuit Inspection".  Is the inspection result normal?	Е
YES >> GO TO 3	
NO >> Repair or replace the malfunctioning parts.	F
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".	G
Is the inspection result normal?	O
YES >> GO TO 4	
NO >> Repair or replace the malfunctioning parts.	Н
4. CHECK REAR POWER DROP GLASS RELAYS	
Check rear power drop glass relays.  Refer to <a href="PWC-60">PWC-60</a> , "Rear Power Drop Glass Down Relay Check" and <a href="PWC-62">PWC-62</a> , "Rear Power Drop Glass Up Relay Check".	I
Is the inspection result normal?	.1
YES >> Inspection End.	0
NO >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".	
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## **PRECAUTIONS**

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# **PRECAUTION**

## **PRECAUTIONS**

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

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

#### **WARNING:**

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

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

## **WARNING:**

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

## **POWER WINDOW MAIN SWITCH**

## < ON-VEHICLE REPAIR >

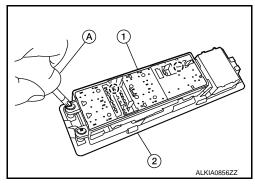
# **ON-VEHICLE REPAIR**

# POWER WINDOW MAIN SWITCH

## Removal and Installation

## **REMOVAL**

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



## **INSTALLATION**

Installation is in the reverse order of removal.

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## FRONT POWER WINDOW SWITCH

## < ON-VEHICLE REPAIR >

# FRONT POWER WINDOW SWITCH

## Removal and Installation

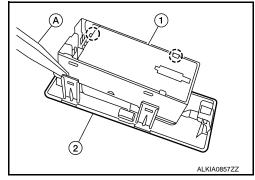
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## **REMOVAL**

- Remove the power window and door lock/unlock switch finisher
   from the front door finisher RH. Refer to <a href="INT-10">INT-10</a>, "Removal and Installation".
  - ( ): Pawl
- 2. Remove the power window and door lock/unlock switch (1) from the power window and door lock/unlock 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**

## < ON-VEHICLE REPAIR >

## REAR POWER WINDOW SWITCH

## Removal and Installation - Rear Door Switch

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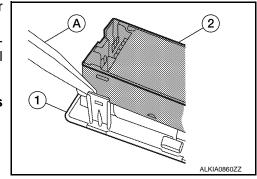
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## **REMOVAL**

- 1. Remove the rear power window switch finisher (1) from the rear door finisher. Refer to <a href="INT-10">INT-10</a>, "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

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## **REMOVAL**

- 1. Remove the instrument lower panel LH, refer to IP-16, "Removal and Installation".
- Using a suitable tool, release the upper and lower tabs, then remove the power drop glass switch from the finisher.

### **CAUTION:**

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

## **INSTALLATION**

Installation is in the reverse order of removal.

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