

CONTENTS

BASIC INSPECTION	4
DIAGNOSIS AND REPAIR WORKFLOW	
FUNCTION DIAGNOSIS	5
POWER WINDOW SYSTEM System Diagram System Description Component Parts Location Component Description	5 5 8
DIAGNOSIS SYSTEM (BCM)1	0
COMMON ITEM1 COMMON ITEM : CONSULT-III Function (BCM - COMMON ITEM)	
RETAINED PWR	
COMPONENT DIAGNOSIS1	2
POWER SUPPLY AND GROUND CIRCUIT1	2
POWER WINDOW MAIN SWITCH	2
FRONT POWER WINDOW SWITCH	3
REAR POWER WINDOW SWITCH1	5

REAR POWER WINDOW SWITCH: Description. REAR POWER WINDOW SWITCH: Component Function Check REAR POWER WINDOW SWITCH: Diagnosis Procedure REAR POWER WINDOW SWITCH: Component Inspection	15
POWER WINDOW MOTOR	17
DRIVER SIDE DRIVER SIDE : Description DRIVER SIDE : Component Function Check DRIVER SIDE : Diagnosis Procedure DRIVER SIDE : Component Inspection	17 17 17
PASSENGER SIDE PASSENGER SIDE : Description PASSENGER SIDE : Component Function Check	
PASSENGER SIDE : Diagnosis Procedure PASSENGER SIDE : Component Inspection	18
REAR LH REAR LH: Description REAR LH: Component Function Check REAR LH: Diagnosis Procedure REAR LH: Component Inspection	20 20 20
REAR RH REAR RH : Description REAR RH : Component Function Check REAR RH : Diagnosis Procedure REAR RH : Component Inspection	21 21 21
ENCODER	23
DRIVER SIDE DRIVER SIDE : Description DRIVER SIDE : Component Function Check DRIVER SIDE : Diagnosis Procedure	23 23
PASSENGER SIDE	25

 D

Е

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0

PASSENGER SIDE : Description	. 25	REAR POWER VENT WINDOW MOTOR RH	
PASSENGER SIDE : Component Function Check		CIRCUIT CHECK	46
	. 25	Description	. 46
PASSENGER SIDE : Diagnosis Procedure	. 25	Diagnosis Procedure	
REAR LH	. 28	REAR POWER VENT WINDOW RELAY	
REAR LH : Description	. 28	(OPEN) CHECK	47
REAR LH: Component Function Check		Description	
REAR LH : Diagnosis Procedure		Diagnosis Procedure	
REAR RH	30	-	
REAR RH : Description		REAR POWER VENT WINDOW RELAY	
REAR RH : Component Function Check		(CLOSE) CHECK	
REAR RH : Diagnosis Procedure		Description	
-		Diagnosis Procedure	. 49
DOOR SWITCH		ECU DIAGNOSIS	51
Description			
Component Function Check		BCM (BODY CONTROL MODULE)	51
Diagnosis Procedure		Reference Value	
Component Inspection	. 35	Terminal Layout	. 53
DOOR KEY CYLINDER SWITCH	26	Physical Values	. 53
		Wiring Diagram	
Description		Fail Safe	
Component Function Check		DTC Inspection Priority Chart	
Diagnosis Procedure		DTC Index	
Component Inspection	. 37		
POWER WINDOW SERIAL LINK	. 39	POWER WINDOW MAIN SWITCH	
		Reference Value	
POWER WINDOW MAIN SWITCH		Wiring Diagram	
POWER WINDOW MAIN SWITCH: Description	. 39	Fail Safe	. 78
POWER WINDOW MAIN SWITCH : Component		FRONT ROWER WINDOW CWITCH	
Function Check	. 39	FRONT POWER WINDOW SWITCH	
POWER WINDOW MAIN SWITCH: Diagnosis		Reference Value	
Procedure	. 39	Wiring Diagram	
FRONT POWER WINDOW SWITCH	40	Fail Safe	. 93
	. 40	SYMPTOM DIAGNOSIS	95
FRONT POWER WINDOW SWITCH : Descrip-	40		50
tion	. 40	NONE OF THE POWER WINDOWS CAN BE	
FRONT POWER WINDOW SWITCH : Compo-		OPERATED USING ANY SWITCH	95
nent Function Check	. 40	Diagnosis Procedure	
FRONT POWER WINDOW SWITCH : Diagnosis		Diagnosis i rocedure	. 33
Procedure	. 41	DRIVER SIDE POWER WINDOW ALONE	
REAR POWER WINDOW SWITCH	. 42	DOES NOT OPERATE	96
REAR POWER WINDOW SWITCH: Power Win-		Diagnosis Procedure	. 96
dow Serial Link Check Rear LH or RH	. 42	FRONT PASSENGER SIDE POWER WIN-	
POWER WINDOW LOCK SWITCH	. 43	DOW ALONE DOES NOT OPERATE	
Description	. 43	Diagnosis Procedure	. 97
Component Function Check	. 43	REAR LH SIDE POWER WINDOW ALONE	
REAR POWER VENT WINDOW SWITCH		DOES NOT OPERATE	Q۵
CIRCUIT CHECK	44	Diagnosis Procedure	
		Diagnosis Frocedure	. 90
Description		REAR RH SIDE POWER WINDOW ALONE	
Diagnosis Procedure	. 44	DOES NOT OPERATE	99
REAR POWER VENT WINDOW MOTOR LH		Diagnosis Procedure	
CIRCUIT CHECK	. 45	ANTI BINIGII OVOTELI BORGINO CONTRA	
Description	. 45	ANTI-PINCH SYSTEM DOES NOT OPERATE	
Diagnosis Procedure		NORMALLY (DRIVER SIDE)1	
- G - 2-2-2 - 2-2-2-2	. •	Diagnosis Procedure1	100

ANTI-PINCH SYSTEM DOES NOT OPERATE NORMALLY (PASSENGER SIDE)101 Diagnosis Procedure101	DOES NOT OPERATE BY KEY CYLINDER SWITCH
ANTI-PINCH SYSTEM DOES NOT OPERATE NORMALLY (REAR LH SIDE)102 Diagnosis Procedure102	KEYLESS POWER WINDOW DOWN DOES NOT OPERATE
ANTI-PINCH SYSTEM DOES NOT OPERATE NORMALLY (REAR RH SIDE)103 Diagnosis Procedure103	POWER WINDOW LOCK SWITCH DOES NOT FUNCTION
AUTO OPERATION DOES NOT OPERATE BUT MANUAL OPERATES NORMALLY (DRIVER SIDE)104 Diagnosis Procedure104	REAR POWER VENT WINDOWS DO NOT OPERATE112 Diagnosis Procedure112
AUTO OPERATION DOES NOT OPERATE BUT MANUAL OPERATES NORMALLY (PASSENGER SIDE)	PRECAUTION
AUTO OPERATION DOES NOT OPERATE BUT MANUAL OPERATES NORMALLY	Precaution Necessary for Steering Wheel Rotation After Battery Disconnect
(REAR LH SIDE)106 Diagnosis Procedure106	ON-VEHICLE REPAIR 115
AUTO OPERATION DOES NOT OPERATE BUT MANUAL OPERATES NORMALLY	POWER WINDOW MAIN SWITCH 115 Removal and Installation
(REAR RH SIDE)107 Diagnosis Procedure107	FRONT POWER WINDOW SWITCH 116 Removal and Installation
POWER WINDOW RETAINED POWER OP- ERATION DOES NOT OPERATE PROPERLY	REAR POWER WINDOW SWITCH 117 Removal and Installation
108 Diagnosis Procedure108	REAR POWER VENT WINDOW SWITCH 118 Removal and Installation

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow (INFOID:000000001735643

DETAILED FLOW

1. OBTAIN INFORMATION ABOUT SYMPTOM

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

>> GO TO 2

2. REPRODUCE THE MALFUNCTION INFORMATION

Check the malfunction on the vehicle that the customer describes. Inspect the relation of the symptoms and the condition when the symptoms occur.

>> GO TO 3

$oldsymbol{3}.$ IDENTIFY THE MALFUNCTIONING SYSTEM WITH "SYMPTOM DIAGNOSIS"

Use "Symptom diagnosis" from the symptom inspection result in step 2 and then identify where to start performing the diagnosis based on possible causes and symptoms.

>> GO TO 4

4. IDENTIFY THE MALFUNCTIONING PARTS WITH "COMPONENT DIAGNOSIS"

Perform the diagnosis with "Component diagnosis" of the applicable system.

>> GO TO 5

REPAIR OR REPLACE THE MALFUNCTIONING PARTS

Repair or replace the specified malfunctioning parts.

>> GO TO 6

6. FINAL CHECK

Check that malfunctions are not reproduced when obtaining the malfunction information from the customer, referring to the symptom inspection result in step 2.

Are the malfunctions corrected?

YES >> INSPECTION END

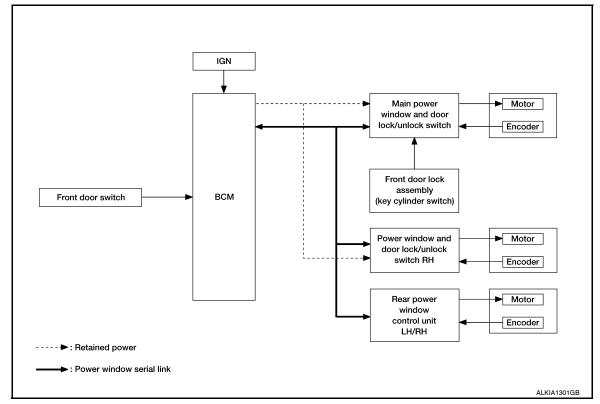
NO >> Refer to GI-38, "Intermittent Incident".

FUNCTION DIAGNOSIS

POWER WINDOW SYSTEM

System Diagram INFOID:0000000001735644 В

POWER WINDOW ANTI-PINCH SYSTEM



System Description

INFOID:0000000001735645

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)	K signal (more than 1.5	
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		
BCM	RAP signal		
Rear power window control unit	Rear power window motor UP/DOWN signal		Rear power window motor

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

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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			

REAR POWER WINDOW CONTROL INPUT/OUTPUT SIGNAL CHART

Item	Input signal to front power window switch	Front power window switch function	Actuator
Main power window and door lock/un- lock switch	Rear power window motor LH/RH UP/ DOWN signal		
Rear power window switch LH/RH	Rear power window motor LH/RH UP/ DOWN signal	Power window control	Rear power window motor LH/RH
Rear power window control unit LH/RH	Rear power window motor control LH RH UP/DOWN signal		·
Encoder	Encoder pulse signal		
ВСМ	Power window serial link signal		

POWER WINDOW OPERATION

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

REAR POWER VENT WINDOW OPERATION

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

POWER WINDOW AUTO-OPERATION

- AUTO UP/DOWN operation can be performed when main power window and door lock/unlock switch or power window and door lock/unlock switch RH turns to AUTO.
- Main power window and door lock/unlock switch controls rear power window LH/RH auto-operation.
- Encoder continues detecting the movement of power window motor and transmits to front power window switch LH/RH or rear power window control unit LH/RH as the encoder pulse signal while power window motor is operating.
- Front power window switch LH/RH or rear power window control unit LH/RH 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

The power window lock is designed to lock operation of all windows except for front door window LH. When in the lock position, the power window lock signal is transmitted to power window and door lock/unlock switch RH and rear power window control unit LH/RH by power window serial link. This prevents the power window motor from operating.

POWER WINDOW SYSTEM

< FUNCTION DIAGNOSIS >

ANTI-PINCH OPERATION

- 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.
- Front power window switch LH/RH and rear power window control unit LH/RH controls to lower the window glass for 150 mm (5.91 in) or 2 seconds after it detects encoder pulse signal frequency change.

OPERATION CONDITION

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

NOTE:

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

KEY CYLINDER SWITCH OPERATION

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

OPERATION CONDITION

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

KEYLESS POWER WINDOW DOWN OPERATION

Front power windows open when the unlock button on Intelligent Key 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 is activated, 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 SEC-22, "CONSULT-III Function (INTELLIGENT KEY)".

NOTE:

Use CONSULT-III to change settings.

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

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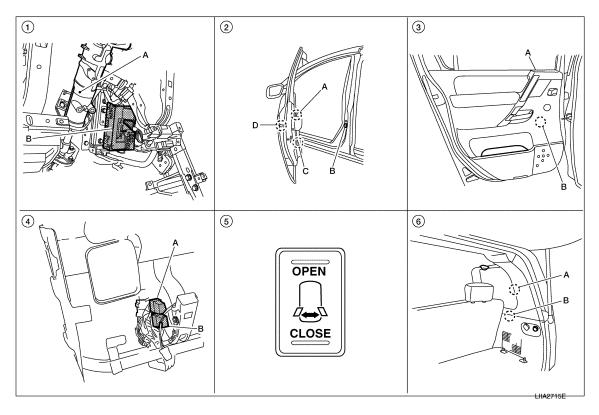
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Revision: March 2010 PWC-7 2008 QX56

Component Parts Location

INFOID:0000000001735646



- A. Steering column
 B. BCM M18, M19, M20 (view with instrument panel removed)
- A. Main power window and door lock/unlock switch D7, D8 Power window and door lock/unlock switch RH D105 B. Front door switch LH B8, RH B108
 - C. Front power window motor LH D9, RH D104
 D. Front door lock actuator LH (key
- A. Rear power vent window relay (CLOSE) M89
 B. Rear power vent window relay (OPEN) M87
- cylinder switch)5. Rear power vent window switch M95 6.
- A. Rear power window switch LH D203, RH D303 Rear power window control unit LH D209, RH D309 B. Rear power window motor LH D204, RH D304
 - A. Rear power vent window motor LH B52, RH B150 B. Condenser-3 B119 Condenser-4 B120

Component Description

INFOID:0000000001735647

POWER WINDOW ANTI-PINCH SYSTEM

Component	Function
BCM	Supplies power supply to power window switch. Controls retained power.
Main power window and door lock/unlock switch	Directly controls all power window motor of all doors. Controls anti-pinch operation of front power window LH.
Power window and door lock/unlock switch RH	Controls front power window motor RH. Controls anti-pinch operation of front power window RH.
Rear power window switch	Controls rear power window control units LH and RH.
Rear power window control unit	Controls rear power window motors LH and RH. Controls anti-pinch operation of rear power window LH/RH.

POWER WINDOW SYSTEM

< FUNCTION DIAGNOSIS >

Component	Function
Front power window motor LH	 Integrates the ENCODER POWER and WINDOW MOTOR. Starts operating with signals from main power window and door lock/unlock switch. Transmits power window motor rotation as a pulse signal to main power window and door lock/unlock switch.
Front power window motor RH	Starts operating with signals from main power window and door lock/unlock switch & power window and door lock/unlock switch RH.
Rear power window motor	Starts operating with signals from main power window and door lock/unlock switch & rear power window switch.
Front door lock assembly LH (key cylinder switch)	Transmits operation condition of key cylinder switch to power window main switch.
Front door switch LH or RH	Detects door open/close condition and transmits to BCM.

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DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

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

INFOID:0000000004874941

APPLICATION ITEM

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

Diagnosis mode	Function Description
WORK SUPPORT	Changes the setting for each system function.
SELF-DIAG RESULTS	Displays the diagnosis results judged by BCM. Refer to BCS-50, "DTC Index".
CAN DIAG SUPPORT MNTR	Monitors the reception status of CAN communication viewed from BCM.
DATA MONITOR	The BCM input/output signals are displayed.
ACTIVE TEST	The signals used to activate each device are forcibly supplied from BCM.
ECU IDENTIFICATION	The BCM part number is displayed.
CONFIGURATION	 Enables to read and save the vehicle specification. Enables to write the vehicle specification when replacing BCM.

SYSTEM APPLICATION

BCM can perform the following functions for each system.

NOTE:

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

System	Sub system selection item	Diagnosis mode		
System	Sub system selection item	WORK SUPPORT	DATA MONITOR	ACTIVE TEST
BCM	BCM	×		
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	
Warning chime	BUZZER		×	×
Interior room lamp timer	INT LAMP	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER		×	×
Air conditioner	AIR CONDITONER		×	
Intelligent Key system	INTELLIGENT KEY		×	
Combination switch	COMB SW		×	
Immobilizer	IMMU		×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Back door open	TRUNK		×	×
RAP (retained accessory power)	RETAINED PWR	×	×	×
Signal buffer system	SIGNAL BUFFER		×	×
TPMS (tire pressure monitoring system)	AIR PRESSURE MONITOR	×	×	×
Vehicle security system	PANIC ALARM			×

RETAINED PWR

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

INFOID:0000000004874944

Data monitor

DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

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

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< COMPONENT DIAGNOSIS >

COMPONENT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT 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? <u>Is the inspection result normal?</u>

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

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

POWER WINDOW MAIN SWITCH: Diagnosis Procedure

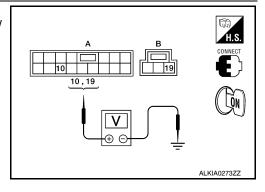
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Main Power Window And Door Lock/Unlock Switch Power Supply Circuit Check

$oldsymbol{1}$. CHECK POWER SUPPLY CIRCUIT

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

(+)			Voltage (V)
Main power window and door lock/unlock switch connector	Terminal	(-)	(Approx.)
D7 (A)	10	Ground	Battery voltage
D8 (B)	19	Giodila	Dattery 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 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
WZO (A)	69	D8 (C)	19	163

68, 69

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

< COMPONENT DIAGNOSIS >

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

Is the inspection result normal?

>> GO TO 4 YES

NO >> Repair or replace harness.

3. CHECK GROUND CIRCUIT

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

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

Is the inspection result normal?

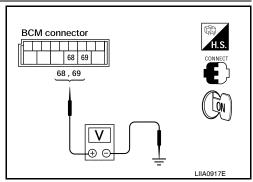
YES >> Replace main power window and door lock/unlock switch. Refer to PWC-115, "Removal and Installation".

NO >> Repair or replace harness.

CHECK BCM OUTPUT SIGNAL

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

(+)	Voltage (V) (Approx.)	
BCM connector Terminal	([-]/	
M20 68 Ground	Battery voltage	
69	Battery voltage	



Is the measurement value within the specification?

YES >> Replace BCM. Refer to BCS-55, "Removal and Installation".

NO >> Repair or replace harness.

FRONT POWER WINDOW SWITCH

FRONT POWER WINDOW SWITCH: Description

BCM supplies power.

Revision: March 2010

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

FRONT POWER WINDOW SWITCH: Component Function Check

Power Window And Door Lock/Unlock Switch RH

1. CHECK FRONT POWER WINDOW MOTOR RH FUNCTION

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

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

>> Refer to PWC-13, "FRONT POWER WINDOW SWITCH: Diagnosis Procedure". NO

FRONT POWER WINDOW SWITCH: Diagnosis Procedure

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

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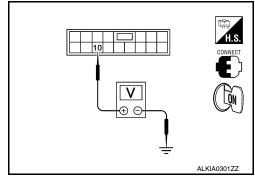
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< COMPONENT DIAGNOSIS >

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 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.
- 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

A B B LIIA2364E

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.
- 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 PWC-116, "Removal and Installation".

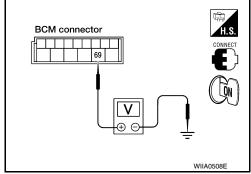
NO >> Repair or replace harness.

4. CHECK BCM OUTPUT SIGNAL

< COMPONENT DIAGNOSIS >

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

	V 11 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 PWC-116, "Removal and Installation".

NO >> Replace BCM. Refer to BCS-55, "Removal and Installation".

REAR POWER WINDOW SWITCH

REAR POWER WINDOW SWITCH: Description

BCM supplies power.

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

REAR POWER WINDOW SWITCH: Component Function Check

Rear Power Window Switch

1. CHECK REAR POWER WINDOW MOTOR FUNCTION

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

Is the inspection result normal?

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

NO >> Refer to PWC-15, "REAR POWER WINDOW SWITCH: Diagnosis Procedure".

REAR POWER WINDOW SWITCH: Diagnosis Procedure

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Rear Power Window Switch Power Supply Circuit Check

1. CHECK POWER WINDOW POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect rear power window switch LH or RH.
- Turn ignition switch ON.
- 4. Check voltage between rear power window switch LH or RH connector D203 (LH), D303 (RH) terminals 2, 3 and ground.

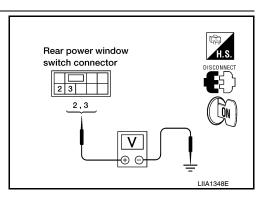
2 - Ground : Battery voltage 3 - Ground : Battery voltage

OK or NG

OK >> GO TO 2

NG >> Repair or replace harness.

2. CHECK POWER WINDOW GROUND CIRCUIT



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< COMPONENT DIAGNOSIS >

- 1. Turn ignition switch OFF.
- Disconnect rear power window switch LH or RH.
- 3. Check continuity between rear power window switch LH or RH connector D203 (LH), D303 (RH) terminals 1, 7 and ground.

1 - Ground : Continuity should exist.7 - Ground : Continuity should exist.

OK or NG

OK >> GO TO 3

NG >> Repair or replace harness.

3. CHECK REAR POWER WINDOW SWITCH

Check rear power window switch.

Refer to PWC-16, "REAR POWER WINDOW SWITCH: Component Inspection".

Is the inspection result normal?

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

NO >> Replace rear power window switch. Refer to PWC-117, "Removal and Installation".

REAR POWER WINDOW SWITCH: Component Inspection

INFOID:0000000001735660

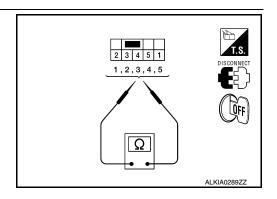
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COMPONENT INSPECTION

1. CHECK REAR POWER WINDOW SWITCH

Check rear power window switch.

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



Rear power window switch connector

Is the inspection result normal?

YES >> Rear power window switch is OK.

NO >> Replace rear power window switch. Refer to PWC-117, "Removal and Installation".

Revision: March 2010 **PWC-16** 2008 QX56

< COMPONENT DIAGNOSIS >

POWER WINDOW MOTOR

DRIVER SIDE

DRIVER SIDE: Description

INFOID:0000000001735661

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

DRIVER SIDE: Component Function Check

INFOID:0000000001735662

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-17, "DRIVER SIDE : Diagnosis Procedure".

DRIVER SIDE : Diagnosis Procedure

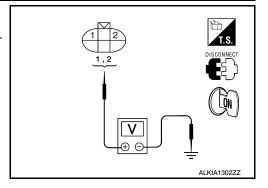
INFOID:0000000001735663

Front Power Window Motor LH Circuit Check

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

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

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



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Is the measurement value within the specification?

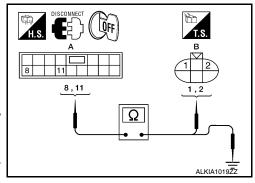
YES >> GO TO 2

NO >> Replace main power window and door lock/unlock switch. Refer to PWC-115, "Removal and Installation".

2. CHECK HARNESS CONTINUITY

- Turn ignition switch OFF.
- Disconnect main power window and door lock/unlock switch and front power window motor LH.
- 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)	8	D9 (B)	2	Yes
DI (A)	11	D3 (D)	1	163



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

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< COMPONENT DIAGNOSIS >

Main power window and door lock/unlock switch connector	Terminal	0	Continuity	
D7 (A)	8	Ground	No	
DI (A)	11	1	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-18, "DRIVER SIDE: Component Inspection".

Is the inspection result normal?

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

NO >> Replace power window motor LH. Refer to <u>GW-9</u>, "Removal and Installation".

DRIVER SIDE: Component Inspection

INFOID:0000000001735664

COMPONENT INSPECTION

1. CHECK FRONT POWER WINDOW MOTOR LH

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

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

Is the inspection result normal?

YES >> Front power window motor LH is OK.

NO >> Replace front power window motor LH. Refer to <u>GW-9</u>, "Removal and Installation".

PASSENGER SIDE

PASSENGER SIDE : Description

INFOID:0000000001735665

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:0000000001735666

CHECK POWER WINDOW MOTOR CIRCIUT

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

Is the inspection result normal?

YES >> Front power window motor RH is OK.

NO >> Refer to PWC-18, "PASSENGER SIDE : Diagnosis Procedure".

PASSENGER SIDE : Diagnosis Procedure

INFOID:0000000001735667

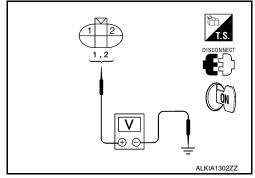
Front Power Window Motor RH Circuit Check

1. CHECK FRONT POWER WINDOW SWITCH RH OUTPUT SIGNAL

< COMPONENT DIAGNOSIS >

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

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



Is the measurement value within the specification?

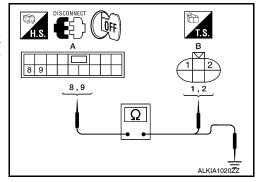
YES >> GO TO 2

NO >> Replace power window and door lock/unlock switch RH. Refer to PWC-116, "Removal and Installation".

2. CHECK HARNESS CONTINUITY

- 1. 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
D105 (A)	9	D104 (В)	1	165



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

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

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace harness.

3. CHECK FRONT POWER WINDOW MOTOR RH

Check front power window motor RH.

Refer to PWC-19, "PASSENGER SIDE: Component Inspection".

Is the inspection result normal?

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

NO >> Replace front power window motor RH. Refer to <u>GW-9. "Removal and Installation"</u>.

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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INFOID:0000000001735668

< 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-9</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-20, "REAR LH: Diagnosis Procedure"

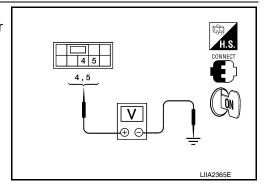
REAR LH: Diagnosis Procedure

Power Window Motor Circuit Check

1. CHECK REAR POWER WINDOW SWITCH LH OUTPUT SIGNAL

- 1. Turn ignition switch ON.
- 2. Check voltage between rear power window switch LH connector D203 terminals 4, 5 and ground.

Connector	Terminals		Condition	Voltage (V)
Connector	(+)	(+) (-)		(Approx.)
	4	Ground	Closing	0
D203 5	4		Opening	Battery voltage
	Ground	Closing	Battery voltage	
	5		Opening	0



INFOID:0000000001735669

INFOID:0000000001735670

INFOID:0000000001735671

OK or NG

OK >> Replace rear power window switch LH. Refer to PWC-117, "Removal and Installation".

NG >> GO TO 2

$oldsymbol{2}$. CHECK REAR POWER WINDOW SWITCH LH CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect rear power window switch LH and rear power window control unit LH.
- Check continuity between rear power window switch LH connector D203 terminals 4, 5 and rear power window control unit LH connector D209 terminals 9, 10.

4 - 9 : Continuity should exist.

5 - 10 : Continuity should exist.

OK or NG

Revision: March 2010 PWC-20 2008 QX56

< COMPONENT DIAGNOSIS >

OK >> GO TO 3

NG >> Repair or replace harness.

3. CHECK REAR POWER WINDOW MOTOR LH

Check rear power window motor LH.

Refer to PWC-21, "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-13, "Removal and Installation". NO

REAR LH: Component Inspection

INFOID:0000000001735672

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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	
(+)	(–)	- Wiotor 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-13, "Removal and Installation".

REAR RH

REAR RH: Description

INFOID:0000000001735673

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

REAR RH: Component Function Check

INFOID:0000000001735674

${f 1}$. CHECK REAR POWER WINDOW MOTOR RH CIRCUIT

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

Is the inspection result normal?

YES >> Rear power window motor RH is OK.

>> Refer to PWC-21, "REAR RH: Diagnosis Procedure".

REAR RH: Diagnosis Procedure

INFOID:0000000001735675

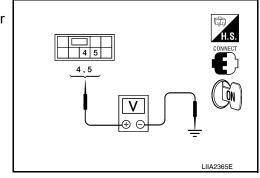
Rear Power Window Motor RH Circuit Check

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

Turn ignition switch ON.

Check voltage between rear power window switch RH connector D303 terminals 4, 5 and ground.

Connector		ninals	Condition	Voltage (V) (Approx.)
Comicolor	(+)		Condition	
	4	4 Ground	Closing	0
D303	4		Opening	Battery voltage
	F		Closing	Battery voltage
	5		Opening	0



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< COMPONENT DIAGNOSIS >

OK or NG

OK >> Replace rear power window switch RH. Refer to PWC-117, "Removal and Installation".

NG >> GO TO 2

2. CHECK REAR POWER WINDOW SWITCH RH CIRCUIT

1. Turn ignition switch OFF.

Disconnect rear power window switch RH and rear power window control unit RH.

3. Check continuity between rear power window switch RH connector D303 terminals 4, 5 and rear power window control unit RH connector D309 terminals 9, 10.

4 - 9 : Continuity should exist.5 - 10 : Continuity should exist.

Rear power window switch connector 4,5 9,10 Bear power window control unit connector Unit connector LIIA1379E

OK or NG

OK >> GO TO 3

NG >> Repair or replace harness.

 $oldsymbol{3}$. CHECK REAR POWER WINDOW MOTOR RH

Check rear power window motor RH.

Refer to PWC-22, "REAR RH: Component Inspection".

Is the inspection result normal?

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

NO >> Replace rear power window motor RH. Refer to GW-13, "Removal and Installation".

REAR RH: Component Inspection

INFOID:0000000001735676

COMPONENT INSPECTION

1. CHECK REAR POWER WINDOW MOTOR RH

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

Terminal		Motor condition	
(+)	(-)	- 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 GW-13, "Removal and Installation".

DRIVER SIDE

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DRIVER SIDE : Description

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:0000000001735678

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-23, "DRIVER SIDE : Diagnosis Procedure"

DRIVER SIDE: Diagnosis Procedure

INFOID:0000000001735679

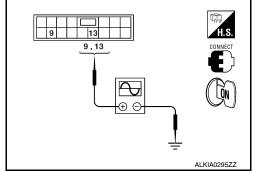
Encoder Circuit Check

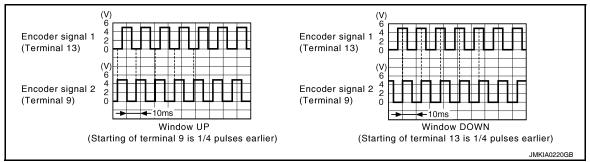
1. CHECK ENCODER OPERATION

1. Turn ignition switch ON.

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

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





PWC-23

Is the inspection result normal?

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

NO >> GO TO 2

Revision: March 2010

2. CHECK FRONT POWER WINDOW MOTOR LH POWER SUPPLY

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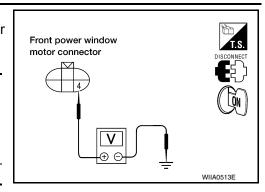
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2008 QX56

< COMPONENT DIAGNOSIS >

- Turn ignition switch ON.
- 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?

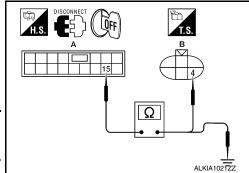
YES >> GO TO 4 NO >> GO TO 3

3. CHECK HARNESS CONTINUITY 1

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 LH connector (B).

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



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

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

Is the inspection result normal?

- YES >> Replace main power window and door lock/unlock switch. Refer to PWC-115, "Removal and lnstallation".
- NO >> Repair or replace harness.

4. CHECK GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect front power window motor LH.
- 3. 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 FINAL PROPERTY OF THE PROPERTY

Is the inspection result normal?

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

$oldsymbol{5}$. CHECK HARNESS CONTINUITY 2

< 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 Ω LIIA0924E

Is the inspection result normal?

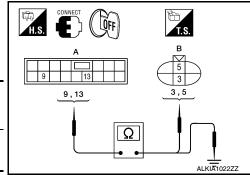
YES >> Replace main power window and door lock/unlock switch. Refer to PWC-115, "Removal and Installation".

NO >> Repair or replace harness.

6. CHECK HARNESS CONTINUITY 3

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

Main power window and door lock/unlock switch connector	Terminal	Front power window motor LH connector	Terminal	Continuity
D7 (A)	9	D9 (B)	5	Yes
<i>D1</i> (A)	13	Б9 (Б)	3	163



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

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

Is the inspection result normal?

YES >> Replace front power window motor LH. Refer to GW-9, "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-25, "PASSENGER SIDE : Diagnosis Procedure".

PASSENGER SIDE: Diagnosis Procedure

1. CHECK ENCODER SIGNAL

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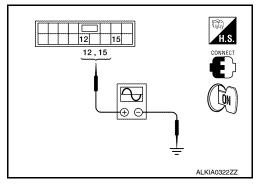
INFOID:0000000001735682

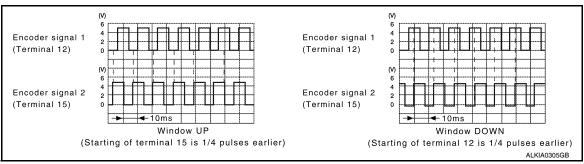
INFOID:0000000001735680

< COMPONENT DIAGNOSIS >

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

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





Is the inspection result normal?

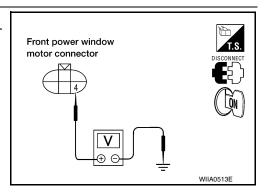
YES >> Check intermittent incident. Refer to GI-38, "Intermittent Incident".

NO >> GO TO 2

2. CHECK FRONT POWER WINDOW MOTOR RH POWER SUPPLY

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

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



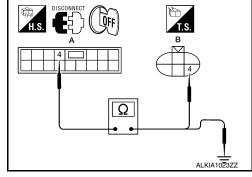
Is the measurement value within the specification?

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

3. CHECK HARNESS CONTINUITY 1

- Turn ignition switch OFF.
- 2. Disconnect power window and door lock/unlock switch RH and front power window motor 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.

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

Is the inspection result normal?

YES >> Replace power window and door lock/unlock switch RH. Refer to PWC-116, "Removal and Installation".

NO >> Repair or replace harness.

4. CHECK GROUND CIRCUIT

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

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

Front power window motor connector DISCONNECT OFF LIIA0923E

Is the inspection result normal?

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

5. CHECK HARNESS CONTINUITY 2

1. Disconnect power window and door lock/unlock switch RH.

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

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

Power window and door lock/unlock switch RH connector

Is the inspection result normal?

YES >> Replace power window and door lock/unlock switch RH. Refer to PWC-116, "Removal and Installation".

NO >> Repair or replace harness.

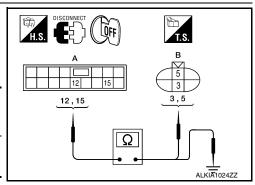
6. CHECK HARNESS CONTINUITY 3

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
	15	D 104 (B)	5	169

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



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Revision: March 2010 **PWC-27** 2008 QX56

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

Is the inspection result normal?

YES >> Replace front power window motor RH. Refer to <u>GW-9</u>, "Removal and Installation".

NO >> Repair or replace harness.

REAR LH

REAR LH: Description

INFOID:0000000001806212

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

REAR LH: Component Function Check

INFOID:0000000001806213

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-31, "REAR RH : Diagnosis Procedure"

REAR LH: Diagnosis Procedure

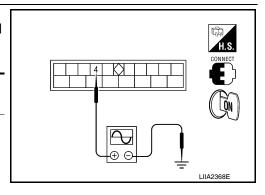
INFOID:0000000001806214

Encoder Circuit Check

1. CHECK ENCODER SIGNAL

- 1. Turn ignition switch ON.
- Check the signal between rear power window control unit LH connector D209 terminal 4 and ground with oscilloscope.

Connec-	Term	Terminals		Cianal	
tor	(+)	(-)	Condition	Signal	
D209	4	Ground	Opening	(V) 6 4 2 0 	



OK or NG

OK >> GO TO 2

NG >> Replace rear power window control unit LH.

$oldsymbol{2}$. CHECK HARNESS CONTINUITY

< COMPONENT DIAGNOSIS >

- Turn ignition switch OFF.
- Disconnect rear power window control unit LH and rear power window motor LH.
- Check continuity between rear power window control unit LH or RH connector D209 terminal 4 and rear power window motor LH connector D204 terminal 3.



OK or NG

OK >> GO TO 3

NG >> Repair or replace harness.

3. CHECK REAR POWER WINDOW MOTOR LH POWER SUPPLY

- 1. Turn ignition switch OFF.
- Disconnect rear power window motor LH or RH.
- Turn ignition switch ON.
- 4. Check voltage between rear power window motor LH connector D204 terminal 4 and ground.



OK or NG

OK >> GO TO 5 NG >> GO TO 4

4. CHECK HARNESS CONTINUITY

- Turn ignition switch OFF.
- 2. Disconnect rear power window motor LH and rear power window control unit LH.
- 3. Check continuity between rear power window motor LH connector D204 (B) terminal 4 and rear power window control unit LH connector D209 (A) terminal 5.

4 - 5 : Continuity should exist.

OK or NG

OK >> Replace rear power window switch LH. Refer to PWC-117, "Removal and Installation".

NG >> Repair or replace harness.

${f 5.}$ CHECK ENCODER GROUND

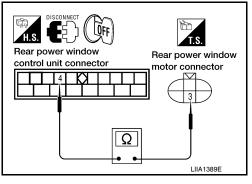
- Disconnect rear power window motor LH.
- Check continuity between rear power window motor LH connector D204 terminal 6 and ground.

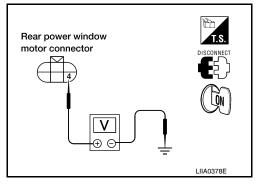
6 - Ground

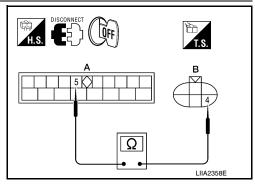
OK or NG

OK >> GO TO 7 NG >> GO TO 6

: Continuity should exist.







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Rear power window motor connector LIIA0380E

6. CHECK ENCODER GROUND CIRCUIT

PWC-29 2008 QX56 Revision: March 2010

< COMPONENT DIAGNOSIS >

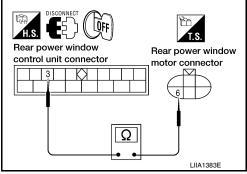
- 1. Disconnect rear power window control unit LH.
- Check continuity between rear power window motor LH connector D204 terminal 6 and rear power window control unit LH connector D209 terminal 3.



OK or NG

OK >> Replace rear power window control unit LH.

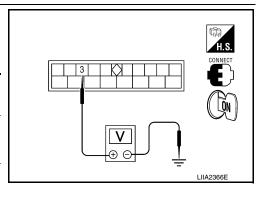
NG >> Repair or replace harness.



7. CHECK REAR POWER WINDOW MOTOR LH LIMIT SWITCH SIGNAL

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

Connector		Condition	Voltage (V)	
Connector	(+)	(-)	Condition	(Approx.)
			Rear power window LH is be- tween fully-open and just be- fore fully-closed position (ON)	0
D209	3	Ground	Rear power window LH is be- tween just before fully-closed position and fully-closed posi- tion (OFF)	5



OK or NG

OK >> Limit switch circuit is OK.

NG >> GO TO 8

8. CHECK REAR POWER WINDOW SWITCH LH OUTPUT SIGNAL

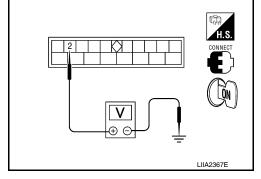
- 1. Turn ignition switch ON.
- Check voltage between rear power window control unit LH harness connector D209 terminal 2 and ground.

2 - Ground : Approx. 5V

OK or NG

OK >> GO TO 9

NG >> Replace rear power window control unit LH.



9. CHECK HARNESS CONTINUITY

- 1. Turn ignition switch OFF.
- 2. Disconnect rear power window control unit LH.
- 3. Check continuity between rear power window control unit LH connector D209 terminal 2 and rear power window motor LH connector D204 terminal 5.

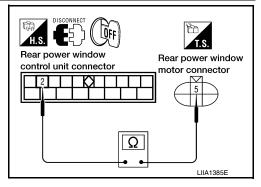
2 - 5 : Continuity should exist.

OK or NG

OK >> Replace rear power window motor LH. Refer to <u>GW-13</u>. <u>"Removal and Installation"</u>.

NG >> Repair or replace harness.

REAR RH



REAR RH: Description

INFOID:0000000001806215

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

REAR RH: Component Function Check

INFOID:000000001806217

1. CHECK ENCODER OPERATION

Does front door glass RH 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-31, "REAR RH : Diagnosis Procedure"

REAR RH: Diagnosis Procedure

INFOID:000000001806218

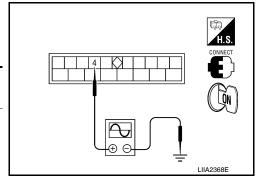
Encoder Circuit Check

1. CHECK ENCODER SIGNAL

1. Turn ignition switch ON.

2. Check the signal between rear power window control unit RH connector D309 terminal 4 and ground with oscilloscope.

Connec-	Terminals		Condition	Signal
tor	(+)	(-)	Condition	Signal
D309	4	Ground	Opening	(V) 6 4 2 0



OK or NG

OK >> GO TO 2

NG >> Replace rear power window control unit RH.

2. CHECK HARNESS CONTINUITY

- 1. Turn ignition switch OFF.
- Disconnect rear power window control unit RH and rear power window motor RH.
- Check continuity between rear power window control unit RH connector D309 terminal 4 and rear power window motor RH connector D304 terminal 3.

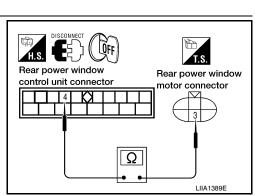


OK or NG

OK >> GO TO 3

NG >> Repair or replace harness.

3. CHECK REAR POWER WINDOW MOTOR RH POWER SUPPLY



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Revision: March 2010 **PWC-31** 2008 QX56

< COMPONENT DIAGNOSIS >

- 1. Turn ignition switch OFF.
- 2. Disconnect rear power window motor RH.
- 3. Turn ignition switch ON.
- 4. Check voltage between rear power window motor RH connector D304 terminal 4 and ground.

4 - Ground : Approx. 10V

OK or NG

OK >> GO TO 5 NG >> GO TO 4

4. CHECK HARNESS CONTINUITY

- 1. Turn ignition switch OFF.
- 2. Disconnect rear power window motor RH and rear power window control unit RH.
- 3. Check continuity between rear power window motor RH connector D304 (B) terminal 4 and rear power window control unit RH connector D309 (A) terminal 5.



OK or NG

OK >> Replace rear power window switch RH. Refer to PWC-117, "Removal and Installation".

NG >> Repair or replace harness.

5. CHECK ENCODER GROUND

- 1. Disconnect rear power window motor RH.
- 2. Check continuity between rear power window motor RH connector D304 terminal 6 and ground.



OK or NG

OK >> GO TO 7 NG >> GO TO 6

Rear power window motor connector

6. CHECK ENCODER GROUND CIRCUIT

- Disconnect rear power window control unit RH.
- Check continuity between rear power window motor RH connector D304 terminal 6 and rear power window control unit RH connector D309 terminal 3.

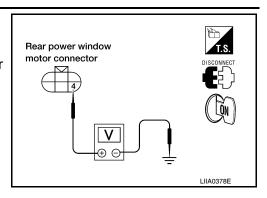
6 - 3 : Continuity should exist.

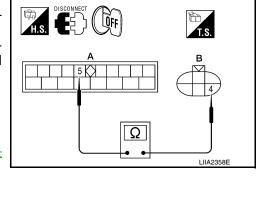
OK or NG

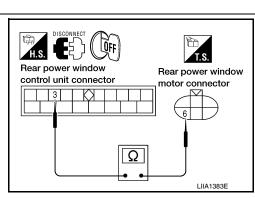
OK >> Replace rear power window control unit RH.

NG >> Repair or replace harness.

7. CHECK REAR POWER WINDOW MOTOR RH LIMIT SWITCH SIGNAL



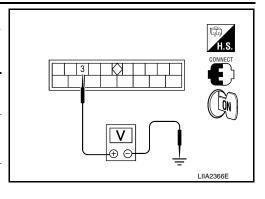




< COMPONENT DIAGNOSIS >

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

Connector		inals	Condition	Voltage (V)
Connector	(+)	(-)	Condition	(Approx.)
			Rear power window RH is be- tween fully-open and just be- fore fully-closed position (ON)	0
D209	3	Ground	Rear power window RH is be- tween just before fully-closed position and fully-closed posi- tion (OFF)	5



OK or NG

OK >> Limit switch circuit is OK.

NG >> GO TO 8

8. CHECK REAR POWER WINDOW SWITCH RH OUTPUT SIGNAL

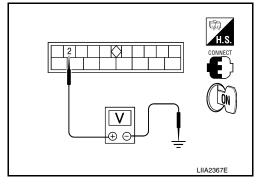
- Turn ignition switch ON.
- Check voltage between rear power window control unit RH harness connector D309 terminal 2 and ground.



OK or NG

OK >> GO TO 9

NG >> Replace rear power window control unit RH.



9. CHECK HARNESS CONTINUITY

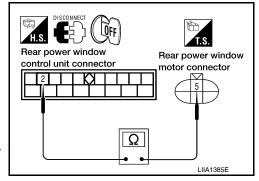
- 1. Turn ignition switch OFF.
- 2. Disconnect rear power window control unit RH.
- Check continuity between rear power window control unit RH connector D309 terminal 2 and rear power window motor RH connector D304 terminal 5.



OK or NG

OK >> Replace rear power window motor RH. Refer to <u>GW-13</u>, <u>"Removal and Installation"</u>.

NG >> Repair or replace harness.



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DOOR SWITCH

Description INFOID:000000001735683

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

Component Function Check

INFOID:000000001735684

1. CHECK FRONT DOOR SWITCH INPUT SIGNAL

Check ("DOOR SW-DR" and "DOOR SW-AS") in "DATA MONITOR" mode with CONSULT-III. Refer to PWC-10, "RETAINED PWR: CONSULT-III Function (BCM - RETAINED PWR)".

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

Is the inspection result normal?

YES >> Front door switch circuit is OK.

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

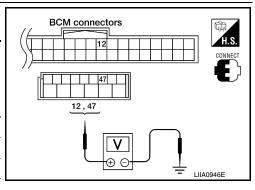
Diagnosis Procedure

INFOID:0000000001735685

1. CHECK FRONT DOOR SWITCH

Check voltage between BCM connector and ground.

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



Is the measurement value within the specification?

YES >> Replace BCM. Refer to BCS-55, "Removal and Installation".

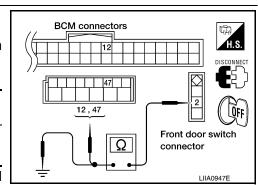
NO >> GO TO 2

2. CHECK HARNESS CONTINUITY

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

BCM connector	Terminal	Front door switch connector	Terminal	Continuity
M18	12	RH: B108	2	Yes
M19	47	LH: B8		163

Check continuity between front door switch connector and ground.



DOOR SWITCH

< COMPONENT DIAGNOSIS >

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

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Is the inspection result normal?

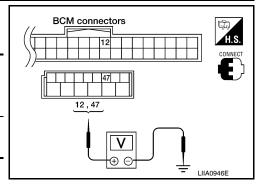
YES >> GO TO 3

NO >> Repair or replace harness.

3. CHECK BCM OUTPUT SIGNAL

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

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



Is the measurement value within the specification?

YES >> GO TO 4

NO >> Replace BCM. Refer to BCS-55, "Removal and Installation".

4. CHECK FRONT DOOR SWITCH

Check front door switch.

Refer to PWC-35, "Component Inspection".

Is the inspection result normal?

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

>> Replace front door switch. NO

Component Inspection

INFOID:0000000001735686

1. CHECK FRONT DOOR SWITCH

Check front door switches.

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

PWC-35

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Is the inspection result normal?

>> Front door switch is OK. YES

NO >> Replace front door switch.

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Revision: March 2010

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DOOR KEY CYLINDER SWITCH

< COMPONENT DIAGNOSIS >

DOOR KEY CYLINDER SWITCH

Description INFOID:0000000001735687

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:0000000001735688

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 DLK-51, "INTELLIGENT KEY: CONSULT-III Function (BCM - INTELLIGENT KEY)".

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

Is the inspection result normal?

YES >> Key cylinder switch is OK.

NO >> Refer to PWC-36, "Diagnosis Procedure".

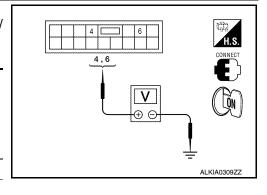
Diagnosis Procedure

INFOID:0000000001735689

1. CHECK DOOR KEY CYLINDER SWITCH INPUT SIGNAL

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

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



Is the measurement value within the specification?

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

NO >> GO TO 2

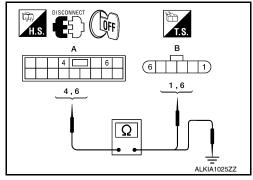
2. CHECK DOOR KEY CYLINDER SIGNAL CIRCUIT

DOOR KEY CYLINDER SWITCH

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

Main power window and door lock/unlock switch connector	Terminal	Front door lock as- sembly LH (key cylin- der switch) connector	Terminal	Continuity
D7 (A)	4	D14 (B)	1	Yes
DI (A)	6	D14 (B)	6	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	0	Continuity
D7 (A)	4	Ground	No
DT (A)	6		NO

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace harness.

${f 3.}$ 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-37, "Component Inspection".

Is the inspection result normal?

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

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

Component Inspection

COMPONENT INSPECTION

1. CHECK DOOR KEY CYLINDER SWITCH

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Revision: March 2010 **PWC-37** 2008 QX56

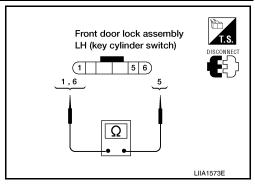
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DOOR KEY CYLINDER SWITCH

< COMPONENT DIAGNOSIS >

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

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



Is the inspection result normal?

YES >> Key cylinder switch is OK.

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

POWER WINDOW SERIAL LINK

< COMPONENT DIAGNOSIS >

POWER WINDOW SERIAL LINK POWER WINDOW MAIN SWITCH

POWER WINDOW MAIN SWITCH: Description

INFOID:0000000001735691

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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:0000000001735692

 ${f 1}.$ 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 DLK-48, "DOOR LOCK: CONSULT-III Function (BCM - DOOR LOCK)".

Monitor item	Condition	
CDL LOCK SW	LOCK	: ON
ODE LOOK SW	UNLOCK	: OFF
CDL UNLOCK SW	LOCK	: OFF
CDL UNLOCK 3W	UNLOCK	: ON

Is the inspection result normal?

YES >> Power window serial link is OK.

NO >> Refer to PWC-39, "POWER WINDOW MAIN SWITCH: Diagnosis Procedure".

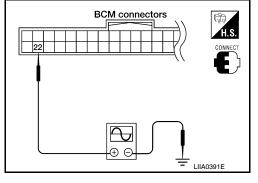
POWER WINDOW MAIN SWITCH: Diagnosis Procedure

INFOID:0000000001735693

Power Window Serial Link Check

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

- Remove Intelligent Key or ignition key, and close front door LH and RH.
- 2. Check signal between BCM connector and ground with oscilloscope when door lock and unlock switch (LH and RH) is turned to "LOCK" or "UNLOCK".
- 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".



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Revision: March 2010 **PWC-39** 2008 QX56

	Terminal				
(+)			(+)		Signal (Reference value)
BCM connector	Terminal	(–)	(Reference value)		
M18	22	Ground	(V) 15 10 5 0		

Is the inspection result normal?

YES >> Power window serial link is OK.

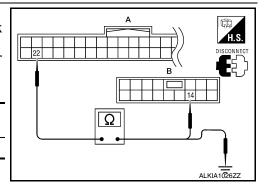
NO >> GO TO 2

2. CHECK POWER WINDOW SERIAL LINK CIRCUIT

1. Turn ignition switch OFF.

- Disconnect BCM and main power window and door lock/unlock switch.
- 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
M18 (A)	22	D7 (B)	14	Yes



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

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

Is the inspection result normal?

YES >> Replace main power window and door lock/unlock switch. Refer to PWC-115, "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

FRONT POWER WINDOW SWITCH: Component Function Check

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

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INFOID:0000000001735695

POWER WINDOW SERIAL LINK

< COMPONENT DIAGNOSIS >

Check ("CDL LOCK SW", "CDL UNLOCK SW") in "DATA MONITOR" mode for "POWER DOOR LOCK SYSTEM" with CONSULT-III. Refer to DLK-48, "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	
ODE DINEOUR SVV	UNLOCK	: ON	

Is the inspection result normal?

YES >> Power window serial link is OK.

NO >> Refer to PWC-41, "FRONT POWER WINDOW SWITCH: Diagnosis Procedure".

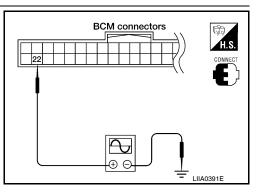
FRONT POWER WINDOW SWITCH: Diagnosis Procedure

Power Window Serial Link Check

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

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

	Terminal		0	
(+)		(-)	Signal (Reference value)	
BCM connector	Terminal	(-)	,	
M18	2	Ground	(V) 15 10 5 0 10 ms	



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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.
- 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

A

B

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Check continuity between BCM connector (A) and ground.

Revision: March 2010 **PWC-41** 2008 QX56

POWER WINDOW SERIAL LINK

< COMPONENT DIAGNOSIS >

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

Is the inspection result normal?

YES >> Replace main power window and door lock/unlock switch. Refer to PWC-115, "Removal and Installation".

NO >> Repair or replace harness.

REAR POWER WINDOW SWITCH

REAR POWER WINDOW SWITCH: Power Window Serial Link Check Rear LH or RH

INFOID:0000000001806222

1. CHECK REAR POWER WINDOW CONTROL UNIT LH OR RH

- 1. Replace with operative rear power window control unit LH or RH.
- Does window operate normally?

OK or NG

OK >> Replace rear power window control unit LH or RH.

NG >> GO TO 2

2. CHECK POWER WINDOW SERIAL LINK CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect main power window and door lock/unlock switch and rear power window control unit LH or RH.
- Check continuity between main power window and door lock/ unlock switch connector D7 terminal 14 and rear power window control unit LH or RH connector D209 (LH) or D309 (RH) terminal 1.

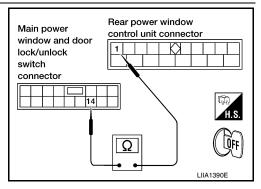
14 - 1

: Continuity should exist.

OK or NG

OK >> Replace main power window and door lock/unlock switch. Refer to PWC-115. "Removal and Installation".

NG >> Repair or replace harness.



POWER WINDOW LOCK SWITCH

< COMPONENT DIAGNOSIS >

POWER WINDOW LOCK SWITCH

Description INFOID:000000001735697

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

1. CHECK POWER WINDOW LOCK SIGNAL

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

- YES >> Replace main power window and door lock/unlock switch. Refer to PWC-115, "Removal and Installation".
- NO >> Check condition of harness and connector.

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Revision: March 2010 **PWC-43** 2008 QX56

REAR POWER VENT WINDOW SWITCH CIRCUIT CHECK

< COMPONENT DIAGNOSIS >

REAR POWER VENT WINDOW SWITCH CIRCUIT CHECK

Description INFOID:0000000001735699

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

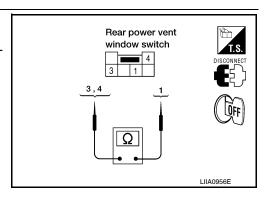
Diagnosis Procedure

INFOID:000000001735700

1. CHECK REAR POWER VENT WINDOW SWITCH OPERATION

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

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



Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace rear power vent window switch.

2. CHECK REAR POWER VENT WINDOW SWITCH CIRCUIT HARNESS CONTINUITY

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

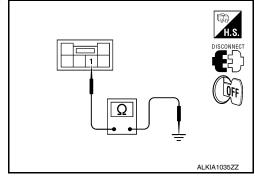
1 - Ground

: Continuity should exist.

Is the inspection result normal?

YES >> Rear power vent window switch circuit harness OK.

NO >> Repair or replace harness.



REAR POWER VENT WINDOW MOTOR LH CIRCUIT CHECK

< COMPONENT DIAGNOSIS >

REAR POWER VENT WINDOW MOTOR LH CIRCUIT CHECK

Description INFOID:000000001735701

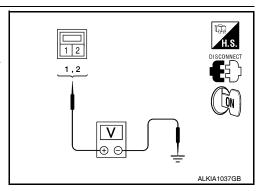
Rear power vent windows OPEN/CLOSE by receiving the signal from rear power vent window switch.

Diagnosis Procedure

1. CHECK REAR POWER VENT WINDOW LH SIGNAL

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

Connector	Term	inals	Condition	Voltage (V)	
Connector	(+) (-)		Condition	(Approx.)	
	1	Ground	Opening	Battery voltage	
B52			Closing	0	
D32	2	Ground	Opening	0	
		ı	Closing	Battery voltage	



Is the inspection result normal?

YES >> Replace rear power vent window motor LH. Refer to <u>GW-15</u>, "Removal and Installation".

NO >> Repair or replace harness.

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Revision: March 2010 **PWC-45** 2008 QX56

REAR POWER VENT WINDOW MOTOR RH CIRCUIT CHECK

< COMPONENT DIAGNOSIS >

REAR POWER VENT WINDOW MOTOR RH CIRCUIT CHECK

Description INFOID:0000000001735703

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

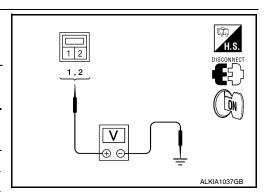
Diagnosis Procedure

INFOID:0000000001735704

1. CHECK REAR POWER VENT WINDOW SWITCH RH SIGNAL

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

Connector	Term	ninals	Condition	Voltage (V)	
Connector	(+)	(+) (-)		(Approx.)	
	1	Ground	Opening	Battery voltage	
B150			Closing	0	
B130	2	Ground	Opening	0	
	2		Closing	Battery voltage	



Is the inspection result normal?

YES >> Replace rear power vent window motor RH. Refer to <u>GW-15</u>, "Removal and Installation".

NO >> Repair or replace harness.

REAR POWER VENT WINDOW RELAY (OPEN) CHECK

< COMPONENT DIAGNOSIS >

REAR POWER VENT WINDOW RELAY (OPEN) CHECK

Description INFOID:000000001735705

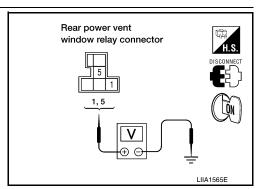
Rear power vent windows OPEN/CLOSE by receiving the signal from rear power vent window switch.

Diagnosis Procedure

$1. {\sf CHECK\ REAR\ POWER\ VENT\ WINDOW\ RELAY\ (OPEN)\ POWER\ SUPPLY\ CIRCUIT}$

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

Connector	Term	ninals	Voltage (V)	
Connector	(+)	(-)	(Approx.)	
M87	1	Ground	Battery voltage	
IVIO7	5	Ground	Dattery Voltage	



Is the inspection result normal?

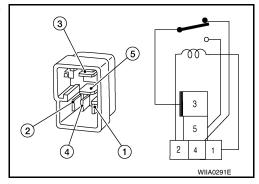
YES >> GO TO 2

NO >> Repair or replace harness.

2.CHECK REAR POWER VENT WINDOW RELAY (OPEN)

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

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



Is the inspection result normal?

YES >> GO TO 3

NO >> Replace rear power vent window relay (OPEN).

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

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

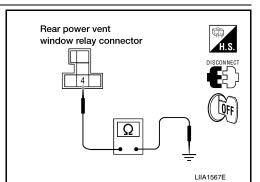
4 - Ground

: Continuity should exist.

Is the inspection result normal?

YES >> GO TO 4

NO >> Repair or replace harness.



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

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Revision: March 2010 **PWC-47** 2008 QX56

REAR POWER VENT WINDOW RELAY (OPEN) CHECK

< COMPONENT DIAGNOSIS >

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

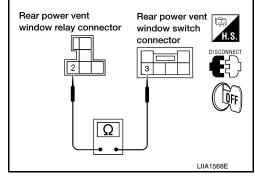
2 - 3

: Continuity should exist.

Is the inspection result normal?

YES >> Replace rear power vent window switch.

NO >> Repair or replace harness.



REAR POWER VENT WINDOW RELAY (CLOSE) CHECK

< COMPONENT DIAGNOSIS >

REAR POWER VENT WINDOW RELAY (CLOSE) CHECK

Description INFOID:0000000001735707

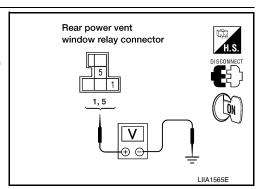
Rear power vent windows OPEN/CLOSE by receiving the signal from rear power vent window switch.

Diagnosis Procedure

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

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

Connector	Term	ninals	Voltage (V)	
Connector	(+)	(-)	(Approx.)	
M89	1	Ground	Battery voltage	
WOS	5	Ground	Battery voltage	



Is the inspection result normal?

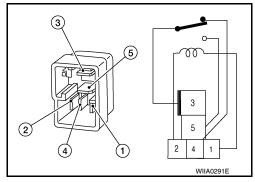
YES >> GO TO 2

NO >> Repair or replace harness.

2.CHECK REAR POWER VENT WINDOW RELAY (CLOSE)

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

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



Is the inspection result normal?

YES >> GO TO 3

NO >> Replace rear power vent window relay (CLOSE).

3.check rear power vent window relay (close) ground circuit

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

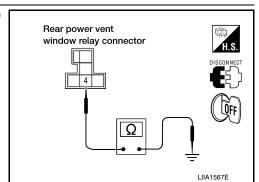
4 - Ground

: Continuity should exist.

Is the inspection result normal?

YES >> GO TO 4

NO >> Repair or replace harness.



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

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Revision: March 2010 **PWC-49** 2008 QX56

REAR POWER VENT WINDOW RELAY (CLOSE) CHECK

< COMPONENT DIAGNOSIS >

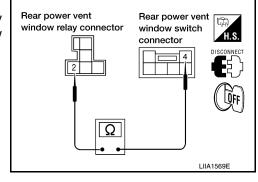
- 1. Disconnect rear power vent window switch.
- Check continuity between rear power vent window relay (CLOSE) connector M89 terminal 2 and rear power vent window switch M95 terminal 4.

2 - 4 : Continuity should exist.

Is the inspection result normal?

YES >> Replace rear power vent window switch.

NO >> Repair or replace harness.



< ECU DIAGNOSIS >

ECU DIAGNOSIS

BCM (BODY CONTROL MODULE)

Reference Value

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition	Value/Status
AID COND CW	A/C switch OFF	OFF
AIR COND SW	A/C switch ON	ON
ALIT LIGHT OVO	Outside of the room is dark	OFF
AUT LIGHT SYS	Outside of the room is bright	ON
ALITO LICUIT CW	Lighting switch OFF	OFF
AUTO LIGHT SW	Lighting switch AUTO	ON
	Back door closed	OFF
BACK DOOR SW	Back door opened	ON
	Door lock/unlock switch does not operate	OFF
CDL LOCK SW	Press door lock/unlock switch to the LOCK side	ON
	Door lock/unlock switch does not operate	OFF
CDL UNLOCK SW	Press door lock/unlock switch to the UNLOCK side	ON
D00D0W40	Front door RH closed	OFF
DOOR SW-AS	Front door RH opened	ON
	Front door LH closed	OFF
DOOR SW-DR	Front door LH opened	ON
	Rear door LH closed	OFF
DOOR SW-RL	Rear door LH opened	ON
	Rear door RH closed	OFF
DOOR SW-RR	Rear door RH opened	ON
	Engine stopped	OFF
ENGINE RUN	Engine running	ON
ED 500 0W	Front fog lamp switch OFF	OFF
FR FOG SW	Front fog lamp switch ON	ON
ED MA OUED OW	Front washer switch OFF	OFF
FR WASHER SW	Front washer switch ON	ON
ED MIDED I OM	Front wiper switch OFF	OFF
FR WIPER LOW	Front wiper switch LO	ON
ED W//DED 111	Front wiper switch OFF	OFF
FR WIPER HI	Front wiper switch HI	ON
ED WIDED INT	Front wiper switch OFF	OFF
FR WIPER INT	Front wiper switch INT	ON
ED MUDED OTOD	Any position other than front wiper stop position	OFF
FR WIPER STOP	Front wiper stop position	ON
114.74.DD 0'''	When hazard switch is not pressed	OFF
HAZARD SW	When hazard switch is pressed	ON
LIQUE OW : 27	Lighting switch OFF	OFF
LIGHT SW 1ST	Lighting switch 1st	ON

Revision: March 2010 **PWC-51** 2008 QX56

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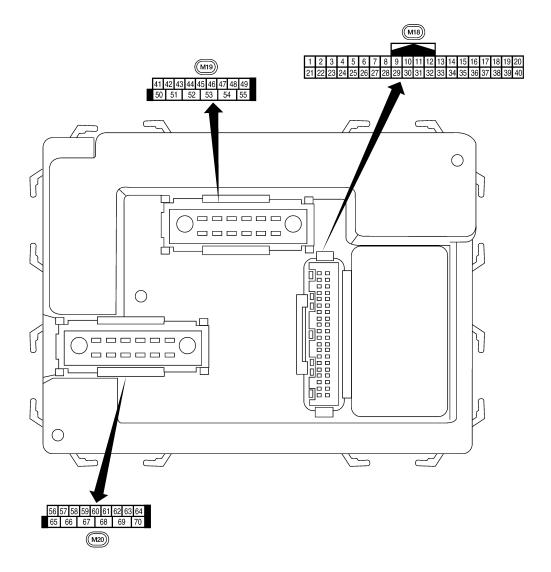
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< ECU DIAGNOSIS >

Monitor Item	Condition	Value/Status
HEADLAMP SW1	Headlamp switch OFF	OFF
TILADLAIVIF SWI	Headlamp switch 1st	ON
HEADLAMP SW2	Headlamp switch OFF	OFF
TILADLAIVIF SVV2	Headlamp switch 1st	ON
HI BEAM SW	High beam switch OFF	OFF
HI BEAIN SW	High beam switch HI	ON
IGN ON SW	Ignition switch OFF or ACC	OFF
IGN ON SW	Ignition switch ON	ON
IGN SW CAN	Ignition switch OFF or ACC	OFF
IGN SW CAN	Ignition switch ON	ON
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	1 - 7
LKEVLOCK	LOCK button of Intelligent Key is not pressed	OFF
I-KEY LOCK	LOCK button of Intelligent Key is pressed	ON
LIZEVIJNI OCK	UNLOCK button of Intelligent Key is not pressed	OFF
I-KEY UNLOCK	UNLOCK button of Intelligent Key is pressed	ON
KEN ON CW	Mechanical key is removed from key cylinder	OFF
KEY ON SW	Mechanical key is inserted to key cylinder	ON
OIL PRESS SW	Ignition switch OFF or ACC Engine running	OFF
	Ignition switch ON	ON
D. 00010 011	Other than lighting switch PASS	OFF
PASSING SW	Lighting switch PASS	ON
DEAD DEE OW	Rear window defogger switch OFF	OFF
REAR DEF SW	Rear window defogger switch ON	ON
DD WACHED CW	Rear washer switch OFF	OFF
RR WASHER SW	Rear washer switch ON	ON
DD WIDED INT	Rear wiper switch OFF	OFF
RR WIPER INT	Rear wiper switch INT	ON
DD WIDED ON	Rear wiper switch OFF	OFF
RR WIPER ON	Rear wiper switch ON	ON
DD WIDED STOD	Rear wiper stop position	OFF
RR WIPER STOP	Other than rear wiper stop position	ON
TAIL LAND CVA	Lighting switch OFF	OFF
TAIL LAMP SW	Lighting switch 1ST	ON
TONIC ODNID CM	When back door opener switch is not pressed	OFF
TRNK OPNR SW	When back door opener switch is pressed	ON
TUDNI CIONIAL I	Turn signal switch OFF	OFF
TURN SIGNAL L	Turn signal switch LH	ON
TUDNI CIONIAL D	Turn signal switch OFF	OFF
TURN SIGNAL R	Turn signal switch RH	ON
VEHICLE SPEED	While driving	Equivalent to speedometer reading

Terminal Layout



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Physical Values

					Measuring condition	
Terminal	Wire	Signal name	Signal input/	Ignition	ivieasuring condition	Reference value or waveform
	color	0.9	output	switch	Operation or condition	(Approx.)
1	BR/W	Ignition keyhole illumi-	Output	OFF	Door is locked (SW OFF)	Battery voltage
		nation			Door is unlocked (SW ON)	0V
2	SB	Combination switch input 5	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 **5ms SKIA5291E
3	G/Y	Combination switch input 4	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 ++5ms SKIA5292E
4	Y	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
0	CD/D	Rear window defogger	lmarit	ON	Rear window defogger switch ON	0V
9	GR/R	switch	Input	ON	Rear window defogger switch OFF	5V
10	G	Hazard lamp flash	Input	OFF	ON (opening or closing)	0V
		-	•		OFF (other than above)	Battery voltage
11	0	Ignition switch (ACC or ON)	Input	ACC or ON	Ignition switch ACC or ON	Battery voltage
12	R/L	Front door switch RH	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
13	GR	Rear door switch RH	Input	OFF	ON (open) OFF (closed)	0V Battery voltage
15	L/W	Tire pressure warning check connector	Input	OFF	—	5V
18	Р	Remote keyless entry receiver and optical sensor (ground)	Output	OFF	_	0V

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< ECU DIAGNOSIS >

	Wire		Signal		Measuring condition	Reference value or waveform
Terminal	color	Signal name	input/ output	Ignition switch	Operation or condition	(Approx.)
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 re- leased)	(V) 6 4 2 0 +-50 ms
20	S, W	receiver (signal)	при	OI I	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 \rightarrow ON)	Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage.
22	W/V	BUS	_	_	Ignition switch ON or power window timer operates	(V) 15 10 5 0 200 ms
23	G/O	Security indicator lamp	Output	OFF	Goes OFF → illuminates (Every 2.4 seconds)	Battery voltage → 0V
25	BR	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF \rightarrow ON)	Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage.
					Rise up position (rear wiper arm on stopper)	0V
					A Position (full clockwise stop position)	0V
26	Y/L	Rear wiper auto stop switch 2	Input	ON	Forward sweep (counterclock- wise direction)	Fluctuating
					B Position (full counterclockwise stop position)	Battery voltage
					Reverse sweep (clockwise direction)	Fluctuating
27	W/R	Compressor ON sig-	Input	ON	A/C switch OFF	5V
۷1	V V / FX	nal	input	OIN	A/C switch ON	0V

< ECU DIAGNOSIS >

			Signal		Measuring condition	
Terminal	Wire color	Signal name	input/ output	Ignition switch	Operation or condition	Reference value or waveform (Approx.)
20	L/D	Front blower monitor	lnnut	ON	Front blower motor OFF	Battery voltage
28	L/R	Front blower monitor	Input	ON	Front blower motor ON	0V
20	\A//D	Hamand av itala		OFF	ON	0V
29	W/B	Hazard switch	Input	OFF	OFF	5V
20	V/DD	Class batch switch	laaut	OFF	Glass hatch switch released	Battery voltage
30	Y/BR	Glass hatch switch	Input	OFF	Glass hatch switch pressed	0
32	R/G	Combination switch output 5	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 **5ms SKIA5291E
33	R/Y	Combination switch output 4	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 +-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				
36	R/W	Combination switch output 1	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 ****5ms
27	D/D	Key switch and igni-	Input	OFF	Intelligent Key inserted	Battery voltage
37	B/R	tion knob switch	Input	OFF	Intelligent Key inserted	0V
38	W/L	Ignition switch (ON)	Input	ON	_	Battery voltage
39	L	CAN-H	_	_	_	_
40	Р	CAN-L	_	_	_	_
42	GR	Glass hatch ajar switch	Input	ON	Glass hatch open Glass hatch closed	0 Battery
43	R/B	Back door latch (door ajar switch)	Input	OFF	ON (open) OFF (closed)	0V Battery voltage

< ECU DIAGNOSIS >

	Wire		Signal		Measuring condition	Reference value or waveform
Terminal	color	Signal name	input/ output	Ignition switch	Operation or condition	(Approx.)
					Rise up position (rear wiper arm on stopper)	0V
					A Position (full clockwise stop position)	Battery voltage
44	0	Rear wiper auto stop switch 1	Input	ON	Forward sweep (counterclockwise direction)	Fluctuating
					B Position (full counterclockwise stop position)	0V
					Reverse sweep (clockwise direction)	Fluctuating
47	SB	Front door switch LH	Input	OFF	ON (open)	0V
71	OD	TIOHE GOOF SWILCH LIT	iliput	011	OFF (closed)	Battery voltage
48	R/Y	Rear door switch LH	Input	OFF	ON (open)	0V
40	rv I	INGAI GOOI SWILCH LA	iriput	OFF	OFF (closed)	Battery voltage
49	R	Cargo lamp	Output	OFF	Any door open (ON)	0V
49	K	Cargo lamp	Output	OFF	All doors closed (OFF)	Battery voltage
51	G/Y	Trailer turn signal (right)	Output	ON	Turn right ON	(V) 15 10 5 0
52	G/B	Trailer turn signal (left)	Output	ON	Turn left ON	(V) 15 10 5 0
F0	L/W	Glass hatch lock actu-	Output	OFF	Glass hatch switch released	0
53	L/VV	ator	Output	OFF	Glass hatch switch pressed	Battery
					Rise up position (rear wiper arm on stopper)	0V
					A Position (full clockwise stop position)	0V
54	Υ	Rear wiper output cir- cuit 2	Input	ON	Forward sweep (counterclockwise direction)	0V
					B Position (full counterclockwise stop position)	Battery voltage
					Reverse sweep (clockwise direction)	Battery voltage
55	SB	Rear wiper output cir- cuit 1	Output	ON	OFF ON	0 Battery voltage
56	R/G	Battery saver output	Output	OFF	30 minutes after ignition switch is turned OFF	0V
				ON		Battery voltage
57	Y/R	Battery power supply	Input	OFF	_	Battery voltage

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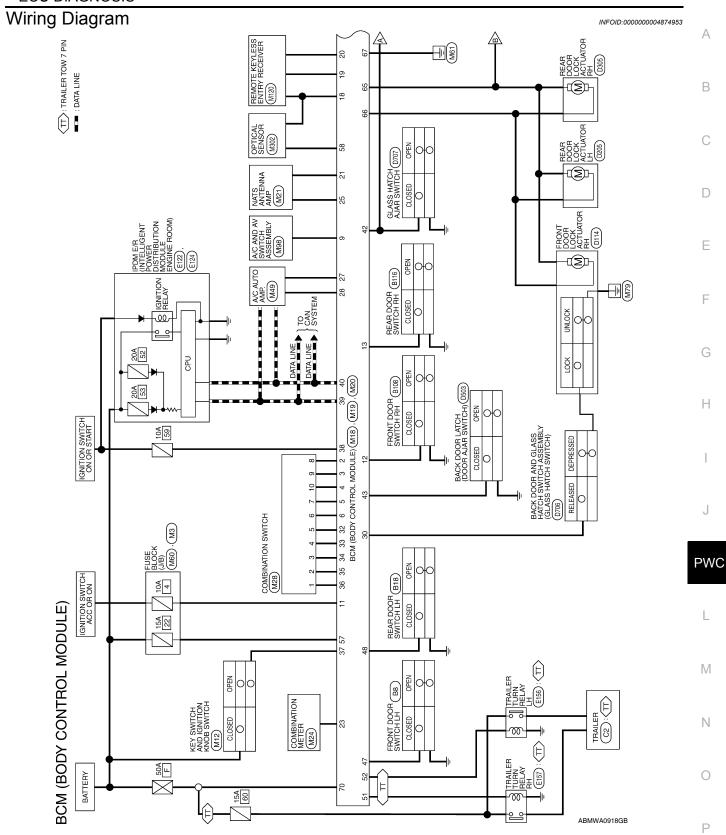
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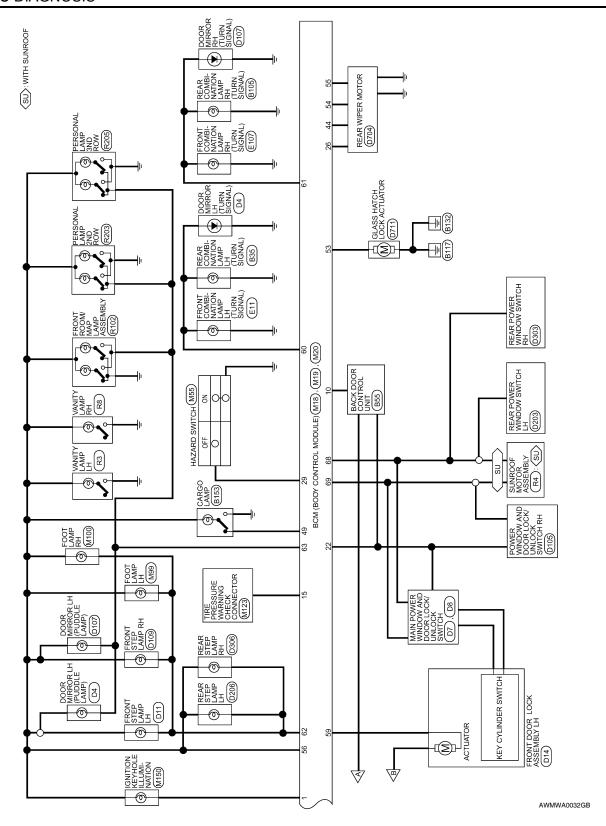
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< ECU DIAGNOSIS >

	10/:		Signal		Measuring con-	dition	Defenses value as well-
Terminal	Wire color	Signal name	input/ output	Ignition switch	Operation	or condition	Reference value or waveform (Approx.)
58	W/R	Optical sensor	Input	ON	When optical s	sensor is illumi-	3.1V or more
36	VV/IX	Optical serisor	Input	ON	When optical s minated	ensor is not illu-	0.6V or less
		Front door lock as-			OFF (neutral)		0V
59	G	sembly LH actuator (unlock)	Output	OFF	ON (unlock)		Battery voltage
60	G/B	Turn signal (left)	Output	ON	Turn left ON		(V) 15 10 50 500 ms SKIA3009J
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
02	1000	Otep lamp Err and Riv	Output	Ori	OFF (all doors	closed)	Battery voltage
63	L	Interior room/map	Output	OFF	Any door	ON (open)	0V
00		lamp	Output	011	switch	OFF (closed)	Battery voltage
65	V	All door lock actuators	Output	OFF	OFF (neutral)		0V
		(lock)			ON (lock)		Battery voltage
66	G/Y	Front door lock actua- tor RH, rear door lock actuators LH/RH and back door lock actua- tor (unlock)	Output	OFF	OFF (neutral) ON (unlock)		0V Battery voltage
67	В	Ground	Input	ON	-	_	0V
					Ignition switch	ON	Battery voltage
					Within 45 seco		Battery voltage
68	W/L	Power window power supply (RAP)	Output	_	More than 45 s nition switch O	seconds after ig- OFF	0V
					When front do open or power operates		0V
69	W/R	Power window power supply	Output	_	-	_	Battery voltage
70	W/B	Battery power supply	Input	OFF	-	_	Battery voltage





BACK DOOR SW/FUEL LID OPEN SW

43

RR_WIPER_SW_ AUTOSTOP_2

26

IMMOBILIZER SCI(RX,TX)

BR ۲Ľ

25 24

AUTO_STOP

0

44

45 46 TRAILER_RH_FLASH TRAILER_LH_FLASH

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20

OUTPUT-3 OUTPUT-2

OUTPUT-4

GLASS_ACTR

G/B $|\leq$

52 53

OUTPUT-1

₩ 0/B

KEY SW

B/R W/L

54 55

LUGGAGE_LAMP

49

DOOR SW (DR) DOOR SW (RL)

SB \mathbb{R}^{A} α

47 48

GLASS_OPENER

Y/BR

OUTPUT-5

R/G

RY

BLR_FAN_SW HAZARD_SW

28 29 30 31 32 33 34 35 36 37 38 39 40

AC_SW

W/R L/R W/B

27

RR_WIPER_OUTP_ 1 (MTR) RR_WIPER_OUTP_ 2 (MTR)

SB

CAN-H

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IGN SW

TRNK/GLASS HATCH

GR R/B

4 42

Signal Name

Color of Wire

Terminal No.

ANTI-PINCH SERIAL LINK (RX,TX)

W/V

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SECURITY_IND_ OUTPUT

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Connector Name BCM (BODY CONTROL MODULE)

Connector No. M19

Signal Name

Wire

Terminal No.

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Connector Color WHITE

KEYLESS PWR TUNER

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KEYLESS TUNER SIGNAL IMMOBILIZER SCL

BCM (BODY CONTROL MODULE) CONNECTORS

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

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	uu.	H.S.	2	22
	Connector Color WHITE	修り	-	21

Signal Name	RING_KEY_ILL	S-TUPNI	NPUT-4	E-TUPNI	INPUT-2	1-TUPNI	_	_	RR DEF SW	IVCS INPUT	ACC SW	DOOR SW (AS)	DOOR SW (RR)	-	TPMS
Color of Wire	BR/W	SB	G/Y	\	G/B	^	1	1	GR/R	Э	0	R/L	GR	-	LW
Terminal No.	1	2	3	4	5	9	7	8	6	10	11	12	13	14	15

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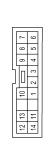
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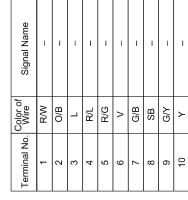
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PWC-61 Revision: March 2010 2008 QX56













Signal Name	BATTERY SAVER OUTPUT	BAT (FUSE)	AUTO_L_INPUT	DOOR UNLOCK OUTPUT (DR)	FLASHER OUTPUT (LEFT)	FLASHER OUTPUT (RIGHT)	STEP LAMP OUTPUT	ROOM LAMP OUTPUT	_	DOOR LOCK OUTPUT (ALL)	DOOR UNLOCK OUTPUT (OTHER)	GND (POWER)	POWER WINDOW POWER SUPPLY (RAP)	POWER WINDOW POWER SUPPLY (BAT)	BATT (FL)
Color of Wire	R/G	Y/R	W/R	g	G/B	G/Y	R/W	L	_	^	G/Y	В	W/L	W/R	W/B
Terminal No.	56	22	58	59	09	61	62	63	64	65	99	67	68	69	70

ALMIA0282GB

Fail Safe INFOID:0000000004874954

Fail-safe index

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

< 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.
U1010: CONTROL UNIT (CAN)	Inhibit engine cranking	When the BCM re-start communicating with the other modules.

DTC Inspection Priority Chart

INFOID:0000000004874956

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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	D
1	U1000: CAN COMM CIRCUIT U1010: CONTROL UNIT (CAN)	
2	 B2190: NATS ANTENNA AMP B2191: DIFFERENCE OF KEY B2192: ID DISCORD BCM-ECM B2193: CHAIN OF BCM-ECM B2013: STRG COMM 1 B2552: INTELLIGENT KEY B2590: NATS MALFUNCTION 	F
3	C1729: VHCL SPEED SIG ERR C1735: IGNITION SIGNAL	G
	 C1704: LOW PRESSURE FL C1705: LOW PRESSURE FR C1706: LOW PRESSURE RR C1707: LOW PRESSURE RL 	Н
	 C1708: [NO DATA] FL C1709: [NO DATA] FR C1710: [NO DATA] RR C1711: [NO DATA] RL 	I
4	 C1712: [CHECKSUM ERR] FL C1713: [CHECKSUM ERR] FR C1714: [CHECKSUM ERR] RR C1715: [CHECKSUM ERR] RL 	J
4	 C1716: [PRESSDATA ERR] FL C1717: [PRESSDATA ERR] FR C1718: [PRESSDATA ERR] RR 	PW
	 C1719: [PRESSDATA ERR] RL C1720: [CODE ERR] FL C1721: [CODE ERR] FR C1722: [CODE ERR] RR 	L
	 C1723: [CODE ERR] RL C1724: [BATT VOLT LOW] FL C1725: [BATT VOLT LOW] FR C1726: [BATT VOLT LOW] RR 	M

DTC Index INFOID:0000000004874957

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 \rightarrow 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.

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< ECU DIAGNOSIS >

CONSULT display	Fail-safe	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page
No DTC is detected. further testing may be required.	_	_	_	_
U1000: CAN COMM CIRCUIT	_	_	_	BCS-30
U1010: CONTROL UNIT (CAN)	_	_	_	BCS-31
B2190: NATS ANTENNA AMP	_	_	_	<u>SEC-29</u>
B2191: DIFFERENCE OF KEY	_	_	_	SEC-32
B2192: ID DISCORD BCM-ECM	_	_	_	SEC-33
B2193: CHAIN OF BCM-ECM	_	_	_	<u>SEC-35</u>
B2552: INTELLIGENT KEY	_	_	_	<u>SEC-37</u>
B2590: NATS MALFUNCTION	_	_	_	SEC-38
C1704: LOW PRESSURE FL	_	_	_	<u>WT-31</u>
C1705: LOW PRESSURE FR	_	_	_	<u>WT-31</u>
C1706: LOW PRESSURE RR	_	_	_	<u>WT-31</u>
C1707: LOW PRESSURE RL	_	_	_	<u>WT-31</u>
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> </u>	<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	_	_	_	WT-20

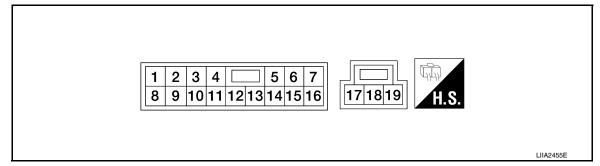
POWER WINDOW MAIN SWITCH

< ECU DIAGNOSIS >

POWER WINDOW MAIN SWITCH

Reference Value

TERMINAL LAYOUT



PHYSICAL VALUES

MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH

Termina (Wire c	-	Description		Condition	Voltage [V]
+	_	Signal name	Input/ Output	Condition	(Approx.)
2 (W/B)	Ground	Encoder ground		_	0
4 (L)	Ground	Door key cylinder switch LH LOCK signal	Input	Key position (Neutral → Locked)	5 → 0
6 (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)	2	Encoder pulse signal 2	Input	When power window motor operates.	(V) 6 4 2 0 10 ms JMKIA0070GB
				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

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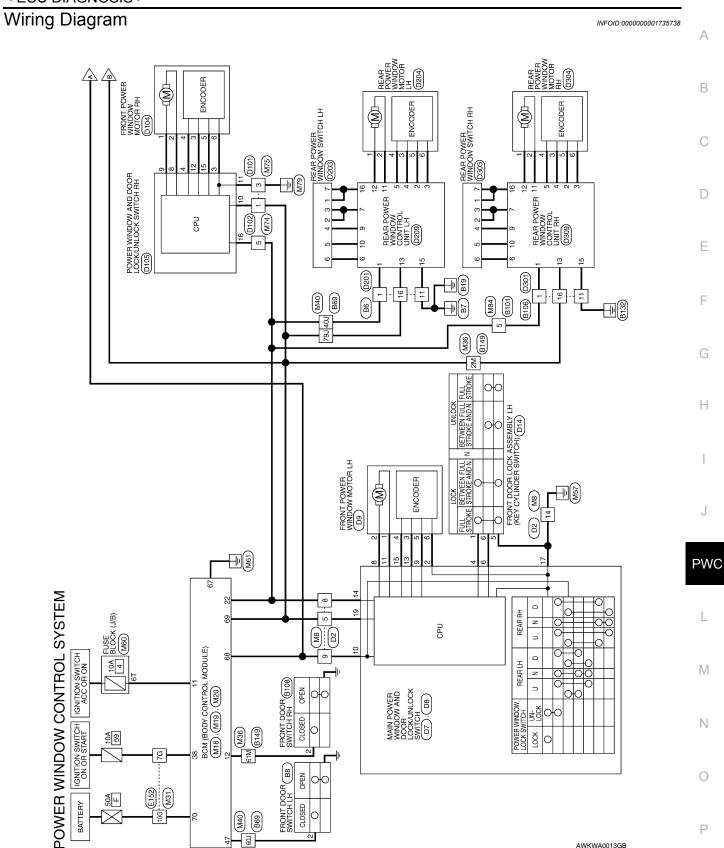
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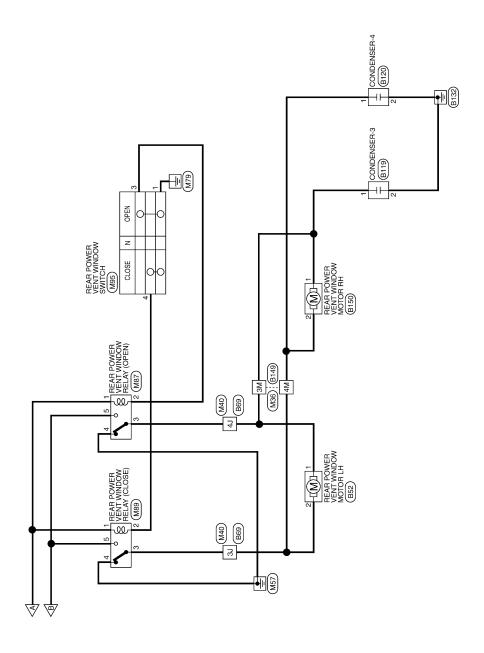
POWER WINDOW MAIN SWITCH

< ECU DIAGNOSIS >

Termina (Wire o		Description		Condition	Voltage [V]
+	_	Signal name	Input/ Output	Goridiadii	(Approx.)
13 (G/Y)	2	Encoder pulse signal 1	Input	When power window motor operates.	(V) 6 4 2 0 10 ms
14 (LG/W)	Ground	Power window serial link	Input/ Output	IGN SW ON or power window timer operating.	(V) 15 10 5 0 10 ms 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



AWKWA0013GB



ALKWA0122GB

Signal Name

M/B M/L

10G 76

Connector Name | BCM (BODY CONTROL | MODULE)

M19

Connector No.

Connector Color WHITE

POWER WINDOW SYSTEM CONNECTORS

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

Connector Name | BCM (BODY CONTROL MODULE)

M18

Connector No.

Connector Color WHITE

Connector No.	ا و	-	M8							
Connector Name WIRE TO WIRE	Name	_	₹	뿞	Ĕ	6	₹	뀚		
Connector Color WHITE	Color	_	₹		ш					
優	7	9	2	4	Ш	П	3	2	-	
) I	9	15	14	13	12	=	16 15 14 13 12 11 10	6	ω	
										1

	Signal Name	I	1	1	ı
	Color of Wire	W/R	N/M	M/L	В
S.	Terminal No. Wire	2	8	6	14

Terminal No. Wire

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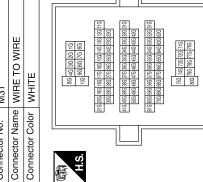
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Signal Name	DOOR SW (DR)	
Color of Wire	SB	
Terminal No.	47	

Terminal No. Wire	47 SB					Terminal No Wire	
Term	,					Termi	
Signal Name	ACC SW	DOOR SW (AS)	ANTI-PINCH SERIAL LINK (RX, TX)	IGN SW			LO THE L

			١,				
M31	WIRE TO WIRE	WHITE		56 46 36 26 16 100 96 86 76 66	216 2006 196 196 176 196 156 146 136 126 116 306 206 206 206 206 206 206 206 206 206 2	416 406 396 396 376 386 356 346 336 326 316	50G 49G 49G 47G 48G 45G 44G 43G 42G
Connector No.	Connector Name	Connector Color		H.S.			



Connector Cold	斯 H.S.
J	

Connector Name | BCM (BODY CONTROL | MODULE)

M20

Connector No.

BLACK

Connector Color

56 57 58 59 60 61 62 63 64	96 67 68 69 70	Signal Name	GND (POWER)	POWER WINDOW POWER SUPPLY (RAP)	POWER WINDOW POWER SUPPLY(BAT)	
75 95 7	9 9	Color of Wire	В	M/L	W/R	
		9				ſ

山村 H.S.	56 57 5	56 57 58 59 60 61 62 63 64 65 65 66 67 68 69 70
Terminal No.	Color of Wire	Signal Name
29	В	GND (POWER
89	M/L	POWER WINDO POWER SUPPLY (
69	M/R	POWER WINDO POWER SUPPLY(I
20	M/B	BATT (FL)

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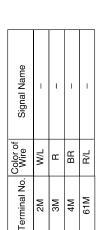
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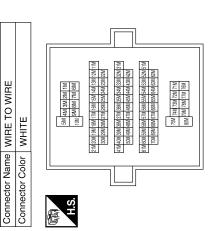
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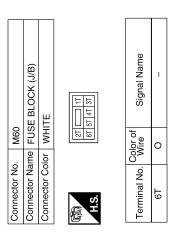
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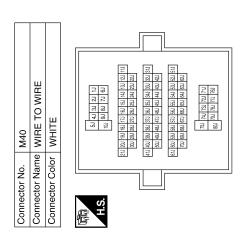
M36

Connector No.





Signal Name	1	-	_	_	
Color of Wire	BR	В	SB	M/L	
Terminal No.	31	4.0	F09	16Z	



AWKIA0116GB

POWER WINDOW MAIN SWITCH

Connector No.	. M95	2
Connector Name		REAR POWER VENT WINDOW SWITCH
Connector Color	-	WHITE
H.S.		3 5 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Terminal No.	Color of Wire	Signal Name
-	В	ı
3	G/R	ı
4	R/G	ı

6	REAR POWER VENT WINDOW RELAY (CLOSE)	BLACK	2 2 4 1	Signal Name	I	ı	-	ı	I
. M89	me WI			Color of Wire	M/L	R/G	BR	В	W/R
Connector No.	Connector Name	Connector Color	斯 H.S.	Terminal No.	Γ	2	3	4	5

7	REAR POWER VENT WINDOW RELAY (OPEN)	BLACK			Signal Name	ı	ı	1	1	1
M87		_		4	Color of Wire	M/L	G/R	~	В	W/R
Connector No.	Connector Name	Connector Color	H.S.		Terminal No.	-	2	က	4	2
		_	· <u> </u>	•						

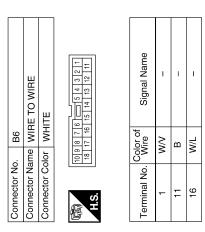
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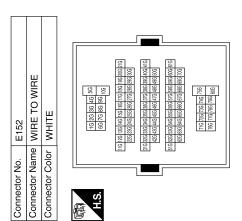
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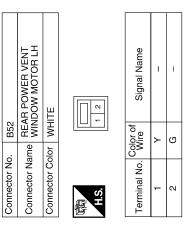
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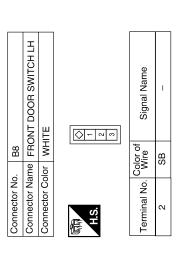
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Signal Name	1	ı	
Color of Wire	M	M/B	
Terminal No.	76	10G	







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Connector No. B101 Connector Name WIRE TO WIRE Connector Color WHITE	Connector No. B119 Connector Name CONDENSER-3 Connector Color WHITE H.S. Terminal No. Color of Signal Name 1 BR - 2 B -
Connector No. Color of Signal Name Connector No. Connector Name 3J Y - Connector Name 4J G - Connector Color Fig.	Inector No. B108 Inector Name FRONT DOOR SWITCH RH Inector Color WHITE S. Color of Signal Name 2 R/L -
Connector No. B69	Connector No. B106 Connector Name WIRE TO WIRE Connector Color WHITE Connector Color WHITE Connector Color WHITE Connector Color Wire Signal Name Terminal No. Terminal No. Wire Signal Name Terminal No. Termin

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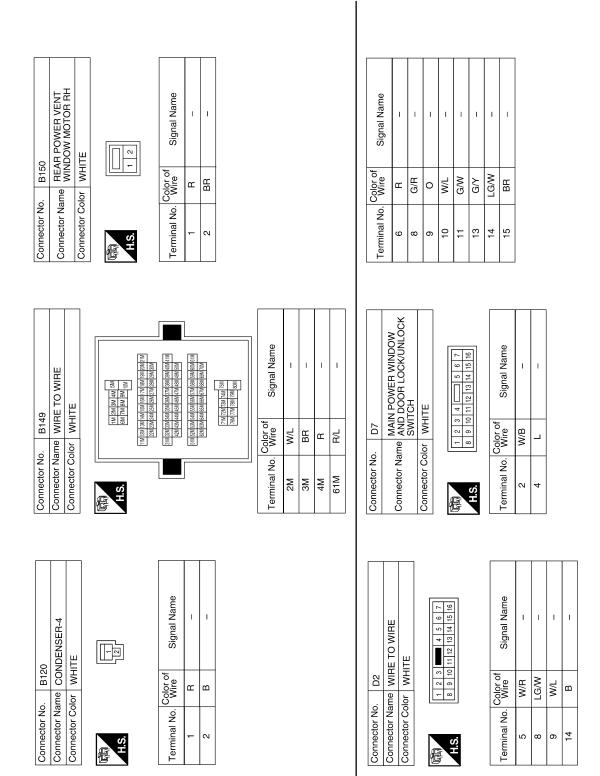
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PWC-73 Revision: March 2010 2008 QX56



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POWER WINDOW MAIN SWITCH

	X			Je Je			~
4	Connector Name FRONT DOOR LOCK ASSEMBLY LH	ACK	\$ P	f Signal Name	LOCK	GND	UNLOCK
). D14	ame FF	olor BL	<u>-</u>	Color o Wire	_	В	œ
Connector No.	Connector Na	Connector Color BLACK	H.S.	Terminal No. Wire	-	2	9
	ī		ı				
	Connector Name FRONT POWER WINDOW MOTOR LH	AY		Signal Name	I	1	1
	Ĕ\	GR	7014	Terminal No. Wire	G/W	G/R	≻
Connector No. D9	a B	Connector Color GRAY		ੋਲ੍	Q	၂ၒ	ďγ

me FRONT POWER WINDOW MOTOR LH	lor GRAY	(a) 4 (b) (c) (c) (d) (d) (d) (d) (d) (d) (d) (d) (d) (d	Color of Signal Name	G/W –	G/R –	G/Y –	BR -	0	
Connector Name	Connector Color	间 H.S.	Terminal No.	-	2	က	4	2	

	MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH	WHITE	19 19	Signal Name	GND	I	P-WDW BAT
. D8	_ `-			Color of Wire	Ф	ı	W/R
Connector No.	Connector Name	Connector Color	H.S.	Terminal No.	17	18	19

40	FRONT POWER WINDOW MOTOR RH	AY	2 2 4 5 6 1	Signal Name	I	I	ı	I	1	ı
. D104		lor GRAY		Color of Wire	g	_	Z/S	G/R	G/W	M/B
Connector No.	Connector Name	Connector Color	赋利 H.S.	Terminal No.	-	2	Э	4	2	9

2	RE TO WIRE	BROWN	1 2 3 4 5	Signal Name	1
D102	me WIF	_	10 11 12 1	Color of Wire	LG/W
Connector No.	Connector Name WIRE TO WIRE	Connector Color	明.S.	Terminal No. Wire	2

o. D101	ame WIRE TO WIRE	olor WHITE	1 2 6 7 8 9 10 10 10 10 10 10 10 10 10 10 10 10 10	Color of Signal Name	W/R	
Connector No.	Connector Name	Connector Color	用.S.	Terminal No.	-	ď

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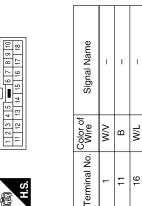
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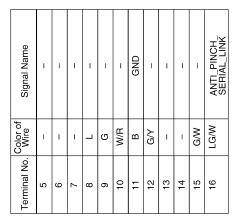
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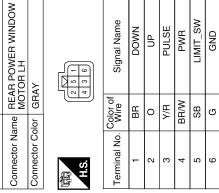






Connector No.	. D105	05
Connector Name		POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH
Connector Color		WHITE
	8 2 8	3 4
ıal No.	Terminal No. Wire	Signal Name
	ı	1
2	ı	ı
3	M/B	_
4	G/R	1







4 F 6 1	Signal Name	BAT	٩n	DOWN	DOWN	UP	=	ı
3	Color of Wire	M/L	Ρ/Υ	B/B	g	٦	В	
H.S.	Terminal No.	-	2	8	4	5	9	7

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	WIRE TO WIRE	ш		14 15 16 17 18	15 16 7 Signa		
. D301	me W	lor WHITE	1 2 3 4 5	Color o Wire	N/M	В	1////
Connector No.	Connector Name	Connector Color	鼒 H.S.	Color of Wire	1	11	10

Signal Name	ILL	>	ı	DOWN	UP	ПP	DOWN	BAT	1	GND	SW_GND	_	1
Color of Wire	æ	G/W	1	*	W/R	0	BR	W/R	1	В	Т	_	1
erminal No.	9	7	8	6	10	Ξ	12	13	14	15	16	17	18

60	REAR POWER WINDOW CONTROL UNIT LH	WHITE	4 5 6 7 8 9 10 13 14 15 16 17 18 9 10 14 15 16 17 18 9 10 18 18 18 18 18 18 18	Signal Name	COMMUNICATION	LIMIT_SW	ENCODER_GND	ENCODER_PULSE	ENCODER_PWR
D209			1 2 3 4 11 12 13	Color of Wire	W/V	SB	g	Y/R	BR/W
Connector No.	Connector Name	Connector Color	H.S.	Terminal No.	-	2	ဧ	4	5

4	REAR POWER WINDOW MOTOR RH	٩٧	() () () () () () () () () ()	Signal Name	DOWN	-M	PULSE	PWR	LIMIT_SW	GND
. D304		lor GRAY	2 4	Color of Wire	BR	0	Y/B	BR/W	SB	g
Connector No.	Connector Name	Connector Color	H.S.	Terminal No.	1	2	က	4	5	9

<u>ღ</u>	REAR POWER WINDOW SWITCH RH	WHITE	4 5 1	Signal Name	BAT	d۸	NMOO	NMOO	d۸	-	_
. D303			2 3	Color of Wire	M/L	Œ	٦	Y/B	BR	н	-
Connector No.	Connector Name	Connector Color	(南) H.S.	Terminal No.	-	2	3	4	2	9	2
											

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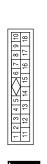
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Signal Name	1	>	ı	DOWN	UP	UP	DOWN	BAT	I	GND	SW_GND	ı	ı
Color of Wire	Œ	G/W	ı	Μ	M/L	0	BR	W/R	1	В	٦	1	I
Terminal No.	9	7	8	6	10	7	12	13	14	15	16	17	18

Connector No.	D309
Connector Name	REAR POWER WINDOW CONTROL UNIT RH
Connector Color WHITE	WHITE



Signal Name	COMMUNICATION	LIMIT_SW	ENCODER_GND	ENCODER_PULSE	ENCODER_PWR
Color of Wire	N/M	SB	g	Y/R	BR/W
Terminal No. Wire	-	2	က	4	2

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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.

POWER WINDOW MAIN 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-79 Revision: March 2010 2008 QX56 Α

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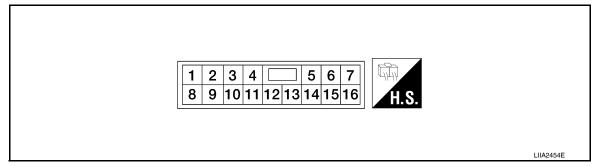
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FRONT POWER WINDOW SWITCH

FRONT POWER WINDOW SWITCH

Reference Value

TERMINAL LAYOUT



PHYSICAL VALUES

POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH

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

FRONT POWER WINDOW SWITCH

< ECU DIAGNOSIS >

	nal No. e color)	Description		Condition	Voltage [V]		
+	_	Signal name	Input/ Output	Condition	(Approx.)		
15 (G/W)	3	Encoder pulse signal 2	Input	When power window motor operates.	(V) 6 4 2 0 10 ms 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		

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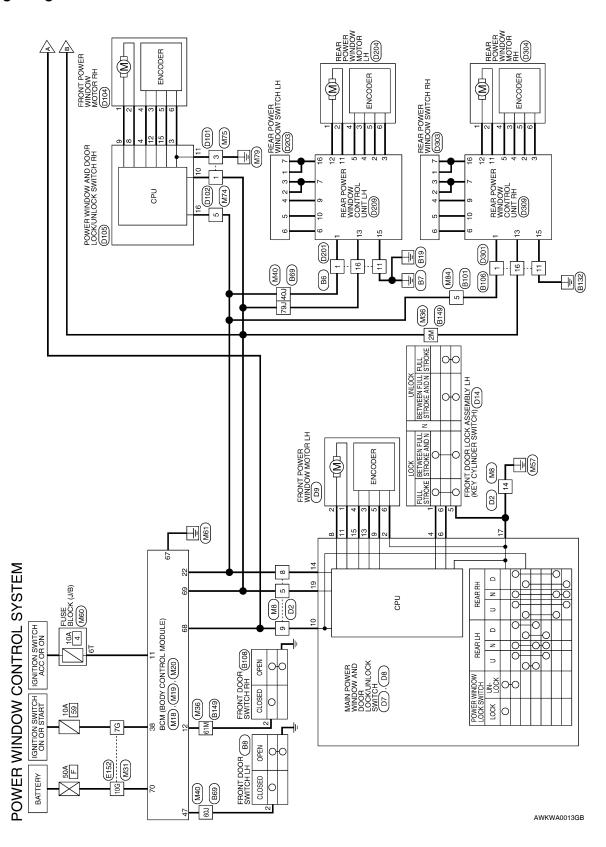
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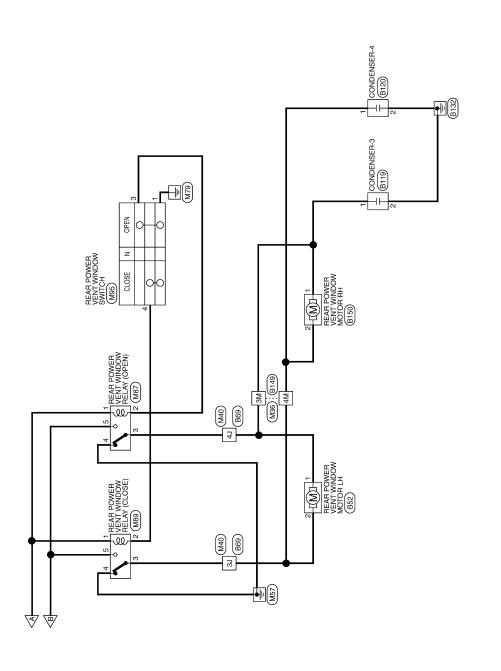
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Wiring Diagram





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ALKWA0122GB

Connector Name BCM (BODY CONTROL MODULE)

Connector Name | BCM (BODY CONTROL MODULE)

M18

Connector No.

WHITE

Connector Color

M19

Connector No.

Connector Color WHITE

POWER WINDOW SYSTEM CONNECTORS

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

	IRE		8 2 9 8	
M8	WIRE TO W	WHITE	7 6 5 4 3 12 11 10	
Connector No.	Connector Name WIRE TO WIRE	Connector Color WHITE	H.S.	

_	œ	1
7	6	1
က	9	1
П	Ξ	1
Ш	12	1
4	13	1
2	14	1
9	15][
7	16]

Terminal No. Color of Signal Name Sign					
Ferminal No. Wire Wire 5 W/R 8 W/V 9 W/L 14 B	Signal Name	_	_	ı	I
Ferminal No. 5 8 8 9 9 14	Color of Wire	W/R	N/M	M/L	В
	Terminal No.	2	8	6	14

				,
		Signal Name	DOOR SW (DR)	
		Color of Wire	SB	
		Terminal No. Wire	47	
17 18 19 20	37 38 39 40		<u> </u>	
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40	Signal Name	ACC SW	DOOR SW (AS)
9 10 11 12	29 30 31 32		Ā	000
8 2 9	26 27 28	Color of Wire	0	ă
2 3 4 5	22 23 24 25	Terminal No. Wire	11	12
_	2	_ ≝		

ANTI-PINCH SERIAL LINK (RX, TX)

∧ R/L

IGN SW

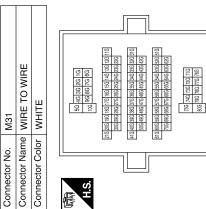
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DOOR SW (AS)

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Signal N	ı	-	
Color of Wire	7/M	M/B	
Terminal No.	5Z	10G	





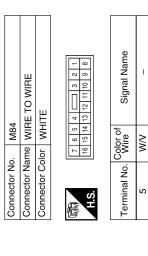


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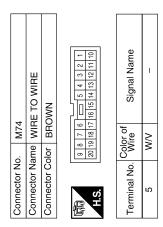
		А
		В
	M60 FUSE BLOCK (J/B) WHITE Triming a signal Name Signal Name	С
	M60 M60 MM0 MM1TE Tale fall fall fall fall fall fall fall f	D
	Connector No. Connector Color Terminal No. 6T 0	Е
		F
em l	Name of the state	G
Signal Name	Signal Name	Н
Color of Wire BR BR R/L	Color of Wire BR BR SB WML	I
Color of Color of Wire W/L W/L	Terminal No. 3J 4J 60J 79J	J
		PW
M M M M M M M M M M M M M M M M M M M		L
Connector No. M36 Connector Name WIRE TO WIRE Connector Color WHITE SMAN 30/20/1/M SMAN 30/20/20/20/20/20/20/20/20/20/20/20/20/20	Connector No. M40 Connector Name WIRE TO WIRE Connector Color WHITE Language Market M	M
Connector No. M Connector Name W Connector Color W H.S. H.S.	Connector No. M Connector No. M Connector No. M Connector Color M M M M M M M M M M M M M M M M M M M	Ν
Connec Connec Connec H.S.	Connec	0
	AWKIA0116GB	_

Revision: March 2010 **PWC-85** 2008 QX56

FRONT POWER WINDOW SWITCH



Connec	Connec	原 H.S.	Termin	Ω.	
RE TO WIRE		3 8 7 6 5	Signal Name	1	ı
me WI	lor	4 01	Color o	W/R	В
Connector Na	Connector Co	馬 H.S.	Terminal No.	-	င
	ne WIRE TO WIRE			Name	Aame



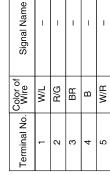
Connector No.	M95
Connector Name	REAR POWER VENT WINDOW SWITCH
Connector Color WHITE	WHITE



Signal Name	I	I	1
Color of Wire	В	G/R	B/G
Terminal No.	-	ဇ	4

Connector Name REAR POWER VENT WINDOW RELAY (CLOSE)	Connector No. M89
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	unector Name REAR POWER VENT

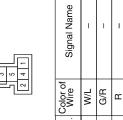


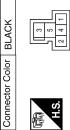


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		-	1
M87	REAR POWER VENT WINDOW RELAY (OPE	BLACK	4 5 2 3

Connector Name Connector No.







Signal					
Color of Wire	M/L	G/R	В	В	W/R
Terminal No.	-	2	3	4	5

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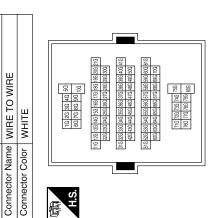
FRONT POWER WINDOW SWITCH

WIRE TO WIRE	ITE	10 9 8 7 6 5 4 3 2 1 1 18 17 16 15 14 13 12 11	Signal Name	1	ſ	1
me WIF	lor WHITE	10 9 8 7	Color of Wire	N/M	В	M/L
Connector Name	Connector Color	H.S.	Terminal No. Wire	-	11	16

Signal Name	1	ı	
Color of Wire	ΜΠ	M/B	
Terminal No.	5/2	10G	

E152

Connector No.



Connector No.		
Connector Name		REAR POWER VENT WINDOW MOTOR LH
Connector Color	lor WHITE	ПЕ
画 H.S.	الصاب	
Terminal No.	Color of Wire	Signal Name
1	\	ı
2	ŋ	1

. No. B8	Name FRONT DOOR SWITCH LH	Color WHITE		Color of Signal Name	SB –
Connector No.	Connector Name	Connector Color	H.S.	Terminal No. Wire	2

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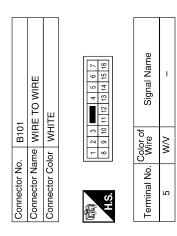
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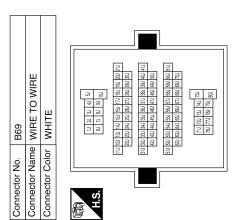
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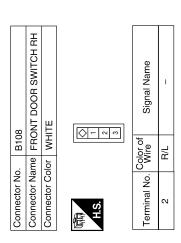
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Signal Name	1	1	Î	Î	
Color of Wire	>	5	SB	M/L	
Terminal No.	33	47	F09	797	



6	CONDENSER-3	WHITE		Signal Name	_	_
. B119	me CO			Color of Wire	BR	В
Connector No.	Connector Name	Connector Color	H.S.	Terminal No.	-	2



91	WIRE TO WIRE	WHITE		7 6 6 5 4 3 2 1		Signal Name	ı	ı	ı
. B106	me WII			10 9 8 7		Color of Wire	//M	<u>m</u>	W/B
Connector No.	Connector Name	Connector Color				Terminal No. Wire	-	Ξ	16
			•		_				

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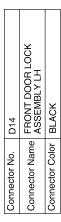
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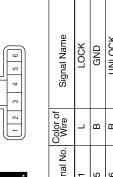
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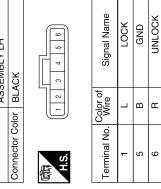
Connector No. B120 Connector Name CONDENSER-4 Connector Color WHITE	B120 ne CONDENS	SER-4	Connector No. Connector Name Connector Color		B149 WIRE TO WIRE	Connector No. Connector Name Connector Color	\vdash	B150 REAR POWER VENT WINDOW MOTOR RH WHITE	
H.S.			明.	1M 2 6M 7 11M 2M 13M 14M 22M 23M 24M	wickershes hard has hes hes hes hes hes hes hes hes hes he	ES.			
Terminal No. Vol.	Color of Wire B	Signal Name -		21M 22M 32M 34M 42M 42M 44M 51M 52M 52M 45M 77M 72 77M 72	100 SWAL (NAC) (NA	Terminal No.	Color of Wire BR	Signal Name	
			2M 3M 4M 61M 61M	Color of Wire W/L BR BR R/L	Signal Name				
Connector No. D2 Connector Name WIRE TO WIRE	D2 WIRE TO	WIRE	Connector No.		D7 MAIN POWER WINDOW AND DOOR I OCK/I INI OCK	Terminal No.	Color of Wire R	Signal Name	
Connector Color	WHITE	1 d	Connector Color		- - -	8 6	G/R O	1 1	
οί.	9 10 11 12	13 15 16	H.S.	8 9 10	4	11 13	W/L G/W	1 1 1	
al No.	<u>_</u>	Signal Name	al No.	Color of Wire	Signal Name	15	LG/W BB	1 1	
	W/R LG/W	1 1	2 4	M/B	1 1				
D 4	W/L B	1 1							

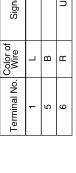
Revision: March 2010 **PWC-89** 2008 QX56

FRONT POWER WINDOW SWITCH

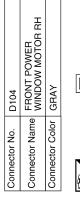


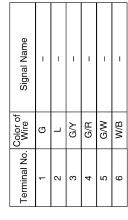


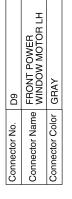


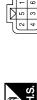






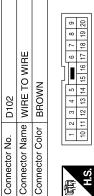


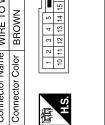




4	olgnal Name	ı	1	1	-	I	ı
Color of	Wire	G/W	G/R	G/Y	BR	0	M/B
	lerminal No.	1	2	က	4	5	9

ı	
M/B	
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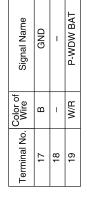




- M	LG/W	2
of Signal Nam	Color of Wire	Terminal No.

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





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





Signal Name	ı	ı	
Color of Wire	W/R	В	
Terminal No.	-	3	

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11 12 13 14 15 16 17 18	Signal Name	_	_	_
12 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Color of Wire	N/M	В	I//\
H.S.	Terminal No. Wire	-	11	16

Signal Name	1	ı	1	1	ı	ı	GND	ı	1	ı	ı	ANTI PINCH SERIAL LINK
Color of Wire	I	ı	1	7	9	W/R	В	G/Y	ı	-	G/W	LG/W
Terminal No.	2	9	7	8	6	10	11	12	13	14	15	16

15	POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH	WHITE	3 4	Signal Name	1	ı	ı	1
. D105			- 8 0 0	Color of Wire	ı	ı	M/B	G/R
Connector No.	Connector Name	Connector Color	画 H.S.	Terminal No.	-	2	3	4

4	REAR POWER WINDOW MOTOR LH	٩٧	2 4 4 9 8 6 1 4 9 9 8 1 4 9 1 8 1 8 1 8 1 8 1 8 1 8 1 8 1 8 1 8 1	Signal Name	DOWN	-M	PULSE	PWR	LIMIT_SW	CINC
. D204		lor GRAY		Color of Wire	BR	0	Y/R	BR/W	SB	ני
Connector No.	Connector Name	Connector Color	原则 H.S.	Terminal No.	-	2	က	4	2	u

	REAR POV MOTOR LH	٨٧	2 5 1	Si					
1020	MO.	GRAY		Color of Wire	BR	0	Y/R	BR/W	a
	ame	olor		Col	3		>	BF	Ĺ
	Connector Name	Connector Color	H.S.	Terminal No.	-	2	က	4	u

13	REAR POWER WINDOW SWITCH LH	WHITE	3 4 5 1	Signal Name	BAT	UP	NMOO	NMOO	d۸	=	_	
. D203			2 8	Color of Wire	M/L	R∕	B/B	g	٦	Я	_	
Connector No.	Connector Name	Connector Color	দৌনী H.S.	Terminal No.	1	2	3	4	5	9		

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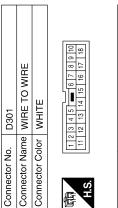
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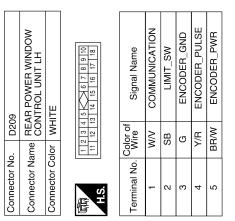
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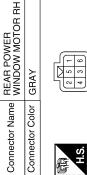












D304

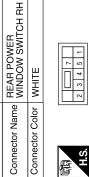
Connector No.

D303

Connector No.











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

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	Signal Name	ILL	۸	1	DOWN	UP	UP	DOWN	BAT	1	GND	SW_GND	_	-
	Color of Wire	В	G/W	ı	Μ	M/L	0	BR	W/R	ı	В	٦	ı	-
•	Terminal No.	9	7	8	6	10	11	12	13	14	15	16	17	18

		_	ı				_	_		
99	REAR POWER WINDOW CONTROL UNIT RH	WHITE	01812181) *	Signal Name	COMMUNICATION	MS_TIMIT_SW	ENCODER_GND	ENCODER_PULSE	ENCODER_PWR
D309			2 3 4 5 8	12 13	Color of Wire	N/N	SB	G	Y/R	BR/W
Connector No.	Connector Name	Connector Color		H.S.	Terminal No.	-	2	င	4	5

Signal Name	COMMUNICATION	LIMIT_SW	ENCODER_GND	ENCODER_PULSE	ENCODER_PWR	
Color of Wire	W/V	SB	ŋ	Y/R	BR/W	
Terminal No.	1	2	3	4	5	

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INFOID:0000000001735742

FAIL-SAFE CONTROL

Fail Safe

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.

PWC-93 Revision: March 2010 2008 QX56 Α

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FRONT POWER WINDOW SWITCH

< ECU DIAGNOSIS >

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

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

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

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

NONE OF THE POWER WINDOWS CAN BE OPERATED USING ANY SWITCH

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

NONE OF THE POWER WINDOWS CAN BE OPERATED USING ANY SWITCH

Diagnosis Procedure

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${f 1}$. CHECK BCM POWER SUPPLY AND GROUND CIRCUIT

Check BCM power supply and ground circuit.

Refer to BCS-32, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2

NO >> Repair or replace the malfunctioning parts.

2. Check main power window and door lock/unlock switch power supply and ground circuit

Check power window switch main power supply and ground circuit.

Refer to PWC-12, "POWER WINDOW MAIN SWITCH: Component Function Check".

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace the malfunctioning parts.

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

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

Refer to PWC-12, "POWER WINDOW MAIN SWITCH: Component Function Check".

Is the inspection result normal?

YES >> GO TO 4

NO >> Repair or replace the malfunctioning parts.

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

Check main power window and door lock/unlock switch.

Refer to PWC-12, "POWER WINDOW MAIN SWITCH: Component Function Check".

Is the inspection result normal?

YES >> Inspection End.

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

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Revision: March 2010 **PWC-95** 2008 QX56

DRIVER SIDE POWER WINDOW ALONE DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

DRIVER SIDE POWER WINDOW ALONE DOES NOT OPERATE

Diagnosis Procedure

INFOID:0000000001735744

1. CHECK FRONT POWER WINDOW MOTOR LH

Check front power window motor LH.

Refer to PWC-17, "DRIVER SIDE: Component Function Check".

Is the inspection result normal?

YES >> Inspection End.

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

FRONT PASSENGER SIDE POWER WINDOW ALONE DOES NOT OPERATE

< SYMPTOM DIAGNOSIS > FRONT PASSENGER SIDE POWER WINDOW ALONE DOES NOT OPER-Α **ATE** Diagnosis Procedure INFOID:000000001735745 В 1. CHECK POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH Check power window and door lock/unlock switch RH. Refer to PWC-13, "FRONT POWER WINDOW SWITCH: Component Function Check". Is the inspection result normal? YES >> GO TO 2 D NO >> Repair or replace the malfunctioning parts. 2. CHECK POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH SERIAL LINK CIRCUIT Е Check power window and door lock/unlock switch RH serial link circuit. Refer to PWC-40, "FRONT POWER WINDOW SWITCH: Component Function Check". Is the inspection result normal? F YES >> GO TO 3 NO >> Repair or replace the malfunctioning parts. $3.\,$ CHECK FRONT POWER WINDOW MOTOR RH CIRCUIT Check front power window motor RH circuit. Refer to PWC-18, "PASSENGER SIDE: Component Function Check". Is the inspection result normal? Н YFS >> Inspection End. >> Check intermittent incident. Refer to GI-38, "Intermittent Incident". NO **PWC**

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REAR LH SIDE POWER WINDOW ALONE DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

REAR LH SIDE POWER WINDOW ALONE DOES NOT OPERATE

Diagnosis Procedure

INFOID:0000000001735746

1. CHECK REAR POWER WINDOW SWITCH LH

Check rear power window switch LH.

Refer to PWC-15, "REAR POWER WINDOW SWITCH: Component Function Check".

Is the inspection result normal?

YES >> GO TO 2

NO >> Repair or replace the malfunctioning parts.

2. CHECK REAR POWER WINDOW MOTOR LH

Check rear power window motor LH.

Refer to PWC-20, "REAR LH: Component Function Check".

Is the inspection result normal?

YES >> Inspection End.

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

REAR RH SIDE POWER WINDOW ALONE DOES NOT OPERATE

< SYMPTOM DIAGNOSIS > REAR RH SIDE POWER WINDOW ALONE DOES NOT OPERATE Α Diagnosis Procedure INFOID:0000000001735747 1. CHECK REAR POWER WINDOW SWITCH RH В Check rear power winodw switch RH. Refer to PWC-15, "REAR POWER WINDOW SWITCH: Component Function Check". C Is the inspection result normal? YES >> GO TO 2 NO >> Repair or replace the malfunctioning parts. 2. CHECK REAR POWER WINDOW MOTOR RH D Check rear power window motor RH. Refer to PWC-21, "REAR RH: Component Function Check". Е Is the inspection result normal? YES >> Inspection End. NO >> Check intermittent incident. Refer to GI-38, "Intermittent Incident". F Н J **PWC** L M Ν 0

PWC-99 Revision: March 2010 2008 QX56

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

< SYMPTOM DIAGNOSIS >

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

Diagnosis Procedure

INFOID:0000000001735748

1. CHECK DOOR WINDOW SLIDING PART

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

Is the inspection result normal?

YES >> GO TO 2

NO >> Repair or replace the malfunctioning parts.

2. CHECK ENCODER CIRCUIT

Check encoder circuit.

Refer to PWC-23, "DRIVER SIDE: Component Function Check".

Is the inspection result normal?

YES >> Inspection End.

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

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

< SYMPTOM DIAGNOSIS >

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

INFOID:0000000001735749

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Diagnosis Procedure

1. CHECK DOOR WINDOW SLIDING PART

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

Is the inspection result normal?

YES >> GO TO 2

NO >> Repair or replace the malfunctioning parts.

2. CHECK ENCODER CIRCUIT

Check encoder circuit.

Refer to PWC-25, "PASSENGER SIDE: 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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ANTI-PINCH SYSTEM DOES NOT OPERATE NORMALLY (REAR LH SIDE)

< SYMPTOM DIAGNOSIS >

ANTI-PINCH SYSTEM DOES NOT OPERATE NORMALLY (REAR LH SIDE)

Diagnosis Procedure

INFOID:0000000001806224

1. CHECK DOOR WINDOW SLIDING PART

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

Is the inspection result normal?

YES >> GO TO 2

NO >> Repair or replace the malfunctioning parts.

2. CHECK ENCODER CIRCUIT

Check encoder circuit.

Refer to PWC-23, "DRIVER SIDE: Component Function Check".

Is the inspection result normal?

YES >> Inspection End.

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

ANTI-PINCH SYSTEM DOES NOT OPERATE NORMALLY (REAR RH SIDE)

< SYMPTOM DIAGNOSIS > ANTI-PINCH SYSTEM DOES NOT OPERATE NORMALLY (REAR RH SIDE) Α Diagnosis Procedure INFOID:000000001806225 1. CHECK DOOR WINDOW SLIDING PART В · A foreign material adheres to window glass or glass run rubber. · Glass run rubber wear or deformation. Sash is tilted too much or not enough. Is the inspection result normal? YES >> GO TO 2 NO >> Repair or replace the malfunctioning parts. D 2. CHECK ENCODER CIRCUIT Check encoder circuit. Е Refer to PWC-23, "DRIVER SIDE: Component Function Check". Is the inspection result normal? YES >> Inspection End. F NO >> Check intermittent incident. Refer to GI-38, "Intermittent Incident". Н **PWC** Ν 0

PWC-103 Revision: March 2010 2008 QX56

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

INFOID:0000000001735750

1. CHECK AUTO UP INITIALIZATION

Refer to TSB.

Does automatic function operate normally?

YES >> Inspection End.

NO >> GO TO 2.

2. CHECK ENCODER

Check encoder.

Refer to PWC-23, "DRIVER SIDE: Component Function Check".

Is the inspection result normal?

YES >> Inspection End.

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

Revision: March 2010 **PWC-104** 2008 QX56

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:0000000001735751

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1. CHECK AUTO UP INITIALIZATION

Refer to TSB.

Does automatic function operate normally?

YES >> Inspection End.

NO >> GO TO 2.

2. CHECK ENCODER

Check encoder.

Refer to PWC-25, "PASSENGER SIDE: 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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Revision: March 2010 **PWC-105** 2008 QX56

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

< SYMPTOM DIAGNOSIS >

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

Diagnosis Procedure

INFOID:0000000001806226

1. CHECK AUTO UP INITIALIZATION

Refer to TSB.

Does automatic function operate normally?

YES >> Inspection End.

NO >> GO TO 2.

2. CHECK ENCODER

Check encoder.

Refer to PWC-23, "DRIVER SIDE: Component Function Check".

Is the inspection result normal?

YES >> Inspection End.

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

Revision: March 2010 **PWC-106** 2008 QX56

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

< SYMPTOM DIAGNOSIS >

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

Diagnosis Procedure

1. CHECK AUTO UP INITIALIZATION

Refer to TSB.

Does automatic function operate normally?

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

2. CHECK ENCODER

Check encoder.

Refer to PWC-23, "DRIVER SIDE: 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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Revision: March 2010 **PWC-107** 2008 QX56

POWER WINDOW RETAINED POWER OPERATION DOES NOT OPERATE PROPERLY

< SYMPTOM DIAGNOSIS >

POWER WINDOW RETAINED POWER OPERATION DOES NOT OPERATE PROPERLY

Diagnosis Procedure

INFOID:0000000001735752

1. CHECK FRONT DOOR SWITCH

Check front door switch.

Refer to PWC-34, "Component Function Check".

Is the inspection result normal?

YES >> Inspection End.

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

DOES NOT OPERATE BY KEY CYLINDER SWITCH

< SYMPTOM DIAGNOSIS >

Diagnosis Procedure

DOES NOT OPERATE BY KEY CYLINDER SWITCH

INFOID:0000000001735753

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

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

Is the inspection result normal?

Refer to PWC-36, "Component Function Check".

YES >> Inspection End.

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

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KEYLESS POWER WINDOW DOWN DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

KEYLESS POWER WINDOW DOWN DOES NOT OPERATE

Diagnosis Procedure

INFOID:0000000001735754

1. CHECK INTELLIGENT KEY FUNCTION

Check Intelligent Key function.

Refer to DLK-52, "CONSULT-III Function (INTELLIGENT KEY)".

Is the inspection result normal?

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

NO >> Replace BCM. Refer to <u>BCS-55</u>, "Removal and Installation".

POWER WINDOW LOCK SWITCH DOES NOT FUNCTION

< SYMPTOM DIAGNOSIS > POWER WINDOW LOCK SWITCH DOES NOT FUNCTION Α Diagnosis Procedure INFOID:0000000001735755 ${\bf 1}$. REPLACE MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH В Replace main power window and door lock/unlock switch. Refer to PWC-115, "Removal and Installation". C Is the inspection result normal? YES >> Inspection End. NO >> Check intermittent incident. Refer to GI-38, "Intermittent Incident". D Е F Н J

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REAR POWER VENT WINDOWS DO NOT OPERATE

< SYMPTOM DIAGNOSIS >

REAR POWER VENT WINDOWS DO NOT OPERATE

Diagnosis Procedure

INFOID:0000000001735756

1. CHECK BCM POWER SUPPLY AND GROUND CIRCUIT

Check BCM power supply and ground circuit.

Refer to BCS-32, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2

NO >> Repair or replace the malfunctioning parts.

2. CHECK REAR POWER VENT WINDOW SWITCH

Check rear power vent window switch.

Refer to PWC-44, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace the malfunctioning parts.

$3.\,$ CHECK REAR POWER VENT WINDOW MOTOR CIRCUIT

Check rear power vent window motor circuit.

Refer to PWC-45, "Diagnosis Procedure" and PWC-46, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 4

NO >> Repair or replace the malfunctioning parts.

4. CHECK REAR POWER VENT WINDOW RELAY

Check rear power vent window relay.

Refer to PWC-47, "Diagnosis Procedure" and PWC-49, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Inspection End.

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

PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRF-TFNSIONFR"

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

WARNING:

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

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

WARNING:

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

Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

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NOTE:

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

For models equipped with the Intelligent Key system and NATS, an electrically controlled steering lock mechanism is adopted on the key cylinder.

For this reason, if the battery is disconnected or if the battery is discharged, the steering wheel will lock and steering wheel rotation will become impossible.

If steering wheel rotation is required when battery power is interrupted, follow the procedure below before starting the repair operation.

OPERATION PROCEDURE

Connect both battery cables.

NOTE:

Supply power using jumper cables if battery is discharged.

- Use the Intelligent Key or mechanical key to turn the ignition switch to the "ACC" position. At this time, the steering lock will be released.
- 3. Disconnect both battery cables. The steering lock will remain released and the steering wheel can be rotated.
- Perform the necessary repair operation.

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PWC-113 Revision: March 2010 2008 QX56

PRECAUTIONS

< PRECAUTION >

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

POWER WINDOW MAIN SWITCH

< ON-VEHICLE REPAIR >

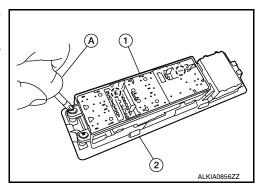
ON-VEHICLE REPAIR

POWER WINDOW MAIN SWITCH

Removal and Installation

REMOVAL

- 1. Remove the power window main switch finisher (2) from the door finisher LH. Refer to INT-11, "Removal and Installation".
- 2. Using a suitable tool (A), remove the screws from the power window main switch (1), then release from the finisher (2).



INSTALLATION

Installation is in the reverse order of removal.

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FRONT POWER WINDOW SWITCH

< ON-VEHICLE REPAIR >

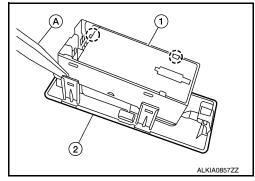
FRONT POWER WINDOW SWITCH

Removal and Installation

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REMOVAL

- Remove the front power window switch finisher (2) from the front door finisher RH. Refer to <u>INT-11, "Removal and Installation"</u>.
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- 2. Using a suitable tool (A), release the tabs and remove the front power window switch (1).



INSTALLATION

Installation is in the reverse order of removal.

REAR POWER WINDOW SWITCH

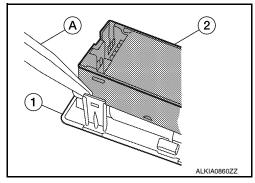
< ON-VEHICLE REPAIR >

REAR POWER WINDOW SWITCH

Removal and Installation

REMOVAL

- 1. Remove the rear power window switch finisher (1) from the rear door finisher. Refer to INT-11, "Removal and Installation".
- 2. Using a suitable tool (A), release the tabs and remove the rear power window switch (2).



INSTALLATION

Installation is in the reverse order of removal.

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Revision: March 2010 **PWC-117** 2008 QX56

REAR POWER VENT WINDOW SWITCH

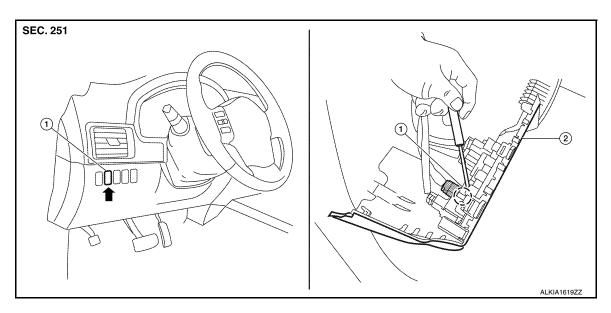
< ON-VEHICLE REPAIR >

REAR POWER VENT WINDOW SWITCH

Removal and Installation

INFOID:0000000004832416

REMOVAL



- 1. Rear power vent window switch
- 2. Instrument lower panel LH
- (Tab
- 1. Remove the instrument lower panel LH, refer to IP-17, "Exploded View".
- 2. Using a suitable tool, release the upper and lower tabs, then remove the rear power vent window switch.

INSTALLATION

Installation is in the reverse order of removal.