

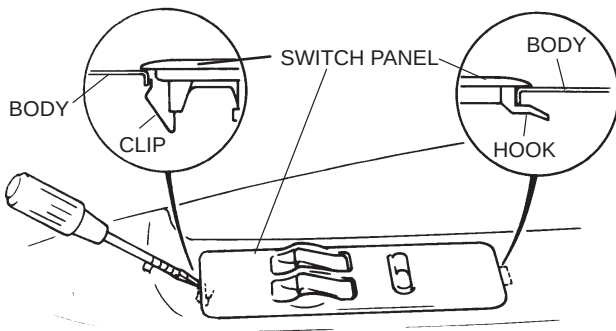
POWER WINDOW SYSTEM

POWER WINDOW SYSTEM

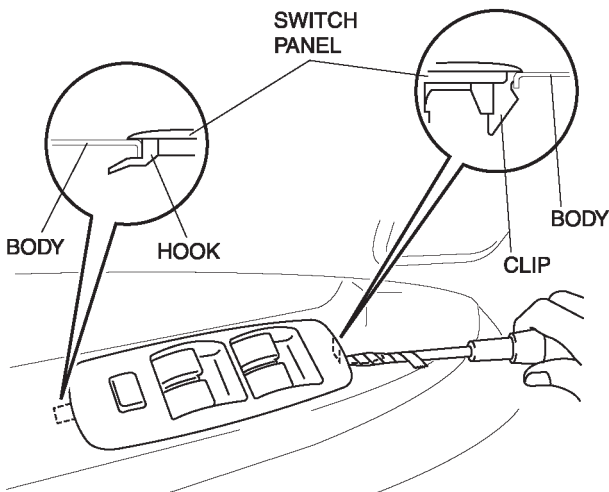
POWER WINDOW MAIN SWITCH REMOVAL/INSTALLATION

1. Disconnect the negative battery cable.
2. Disengage the clip using tape-wrapped flathead screw driver.
3. Pull the switch panel forward to disengage the hook.

(Vehicles built up to 07/2002)

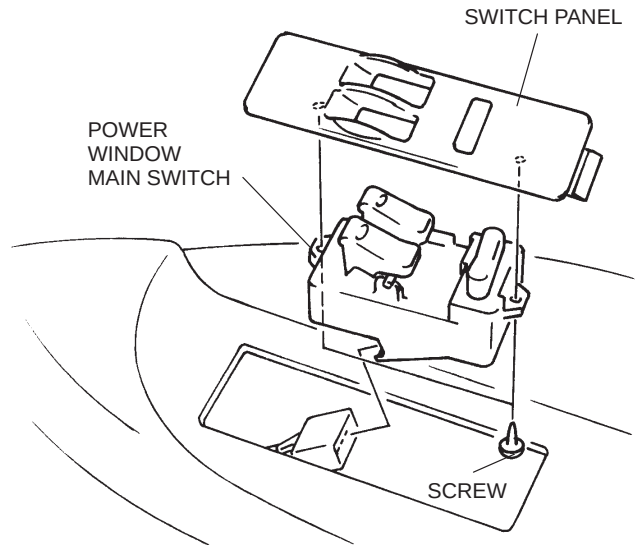


(Vehicles built from 08/2002)

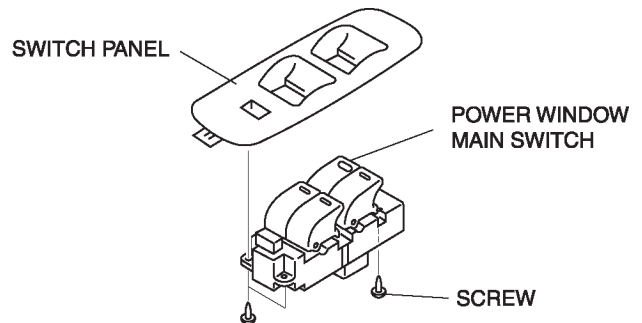


4. Disconnect the power window main switch connector.
5. Remove the screws to remove the power window main switch from the switch panel.

(Vehicles built up to 07/2002)



(Vehicles built from 08/2002)



6. Install in the reverse order of removal.

POWER WINDOW MAIN SWITCH INSPECTION (VEHICLES BUILT UP TO 07/2002)

Regular Cab, Stretch Cab

1. Remove the switch panel. (Refer to POWER WINDOW MAIN SWITCH REMOVAL/INSTALLATION.)
2. Inspect for continuity between the power window main switch terminals using an ohmmeter.
3. When inspecting the driver's side, connect the battery positive voltage to terminal F and connect the ground to terminal D.
4. When inspecting the passenger's side, turn the power-cut switch to ON.

POWER WINDOW SYSTEM

Power window switch Driver's side

○—○ : Continuity

Switch position	Terminal			
	F	D	A (H)	B (I)
Manual close	○		○	
Off		○	○	○
Auto open Manual open	○			○

() : R.H.D.

Passenger's side

○—○ : Continuity

Switch position	Terminal			
	F	D	H (A)	I (B)
Close	○		○	
Off		○	○	○
Open	○			○

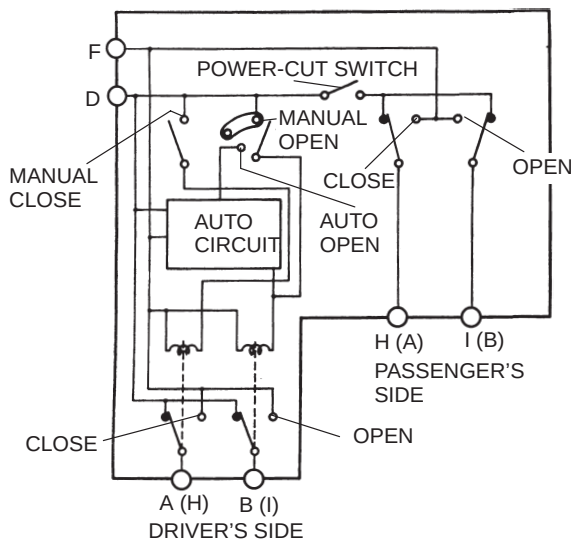
() : R.H.D.

Power-cut switch

○—○ : Continuity

Switch position	Terminal				
	D	A (H)	B (I)	H (A)	I (B)
ON	○	○	○	○	○
OFF	○	○	○	○	○

() : R.H.D.



H	*	⊗	*	A
I	F	D	B	

() : R.H.D.

- If not as specified, replace the power window main switch.

Double Cab

- Remove the switch panel. (Refer to POWER WINDOW MAIN SWITCH REMOVAL/INSTALLATION.)
- Inspect for continuity between the power window main switch terminals using an ohmmeter.
- When inspecting the driver's side, connect the battery positive voltage to terminal A (L.H.D.) or F (R.H.D.) and connect the ground to terminal H.
- When inspecting the passenger's side and rear, turn the power-cut switch to ON.

Power window switch Driver's side

○—○ : Continuity

Switch position	Terminal			
	A (F)	H	L (D)	J (B)
Manual close	○		○	
Off		○	○	○
Auto open Manual open	○			○

() : R.H.D.

Passenger's side

○—○ : Continuity

Switch position	Terminal			
	A (F)	H	D (L)	B (J)
Close	○		○	
Off		○	○	○
Open	○			○

() : R.H.D.

Rear left

○—○ : Continuity

Switch position	Terminal			
	A	H	K	I
Close	○		○	
Off		○	○	○
Open	○			○

() : R.H.D.

Rear right

○—○ : Continuity

Switch position	Terminal			
	A	H	E	C
Close	○		○	
Off		○	○	○
Open	○			○

() : R.H.D.

POWER WINDOW SYSTEM

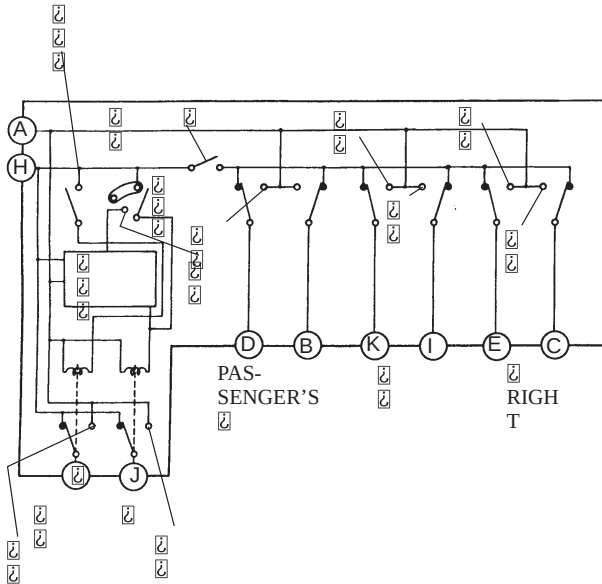
Power-cut switch

○—○ : Continuity

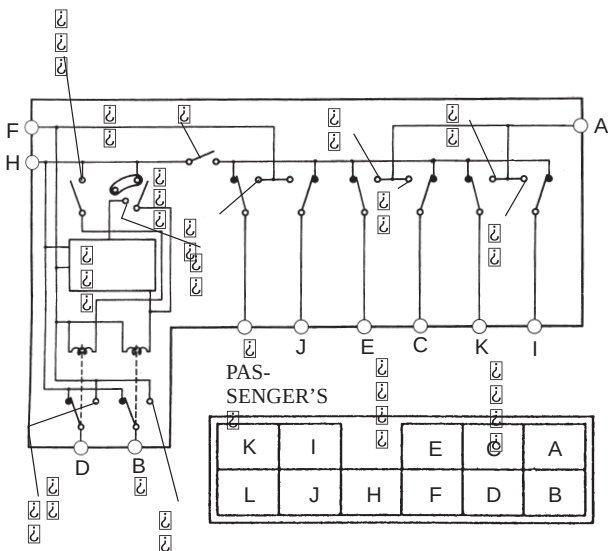
Switch position	Terminal								
	H	L (D)	J (B)	D (L)	B (J)	E	C	K	I
ON	○	○	○	○	○	○	○	○	○
OFF	○	○	○	○	○	○	○	○	○

(): R.H.D.

L.H.D.



R.H.D.



5. If not as specified, replace the power window main switch.

POWER WINDOW SYSTEM

POWER WINDOW MAIN SWITCH INSPECTION (VEHICLES BUILT FROM 08/2002)

Driver's Side

1. Remove the driver-side front door trim.
2. Connect the power window main switch connector.
3. Measure the voltage at the power window main switch terminals as indicated below.
4. Disconnect the power window main switch connector before inspecting for continuity at terminals 1M and 1F.
 - If not as specified, inspect the parts listed under "Action".
 - If the parts and wiring harnesses are okay but the system still does not work properly, replace the power window main switch.

Terminal voltage list (Reference)

POWER WINDOW MAIN SWITCH HARNESS SIDE CONNECTOR					
Terminal	Signal	Connected to	Test condition	Voltage (V)/ Continuity	Action
1F	Door switch	Door switch	Any door is open (door switch is on): inspect for continuity to ground	Yes	● Inspect door switch ● Inspect related harness
			All doors are closed (door switch is off): inspect for continuity to ground	No	
1H	IG1	P. WIND 30 A fuse	Ignition switch is at ON position	B+	● Inspect P.WIND 30 A fuse ● Inspect relate harness
			Ignition switch is at LOCK position	Below 1.0	
1J	Power supply	P. WIND 15 A fuse	Under any condition	B+	● P. WIND 15 A fuse ● Inspect related harness
1L (1D)	Close output	Power window motor	While door glass is opening	Below 1.0	● Power window motor ● Inspect related harness
			While door glass is closing	B+	
1M	Ground	GND	Under any condition: inspect for continuity to ground	Yes	● Inspect GND
1N (1B)	Close output	Power window motor	While door glass is opening	Below 1.0	● Power window motor ● Inspect related harness
			While door glass is closing	B+	
2A	Ground	Power window motor	Under any condition: inspect for continuity to ground	Yes	● Power window motor ● Inspect related harness
2B	SEN2	Power window motor	Door glass is in motion	Alternates between 0 and 9	● Power window motor ● Inspect related harness
			Door glass is not in motion	0 or 9	
2C	SEN1	Power window motor	Door glass in motion	Alternates between 0 and 9	● Power window motor ● Inspect related harness
			Door glass is not in motion	0 or 9	
2D	Power supply	Power window motor	Under any condition	9	● Power window motor ● Inspect related harness

() : R.H.D.

POWER WINDOW SYSTEM

Except Driver's Side

1. Remove the power window main switch.
2. Turn the power-cut switch to UNLOCK.
3. Inspect for continuity between the power window main switch terminals using an ohmmeter.
 - If not as specified, replace the power window main switch.

Passenger's side

○—○ : Continuity

Switch position	Terminal			
	1H	1M	1D (1L)	1B (1N)
CLOSE	○	○	○	○
OFF		○	○	○
OPEN	○	○	○	○

(): R.H.D.

Rear right

○—○ : Continuity

Switch position	Terminal			
	1H	1M	1I	1K
CLOSE	○	○	○	○
OFF		○	○	○
OPEN	○	○	○	○

Rear left

○—○ : Continuity

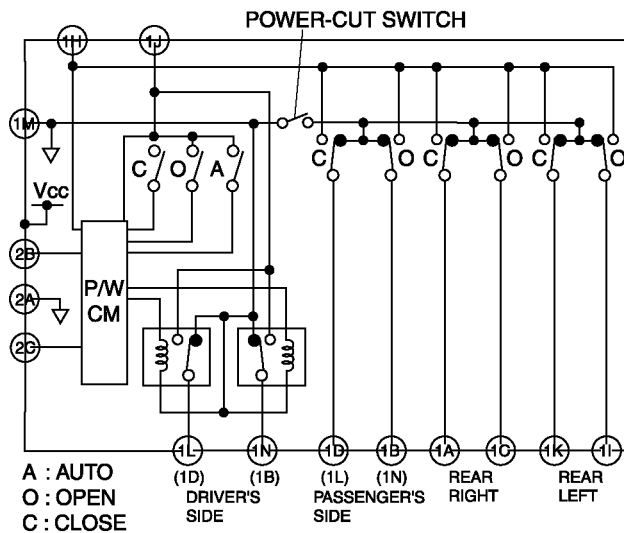
Switch position	Terminal			
	1H	1M	1C	1A
CLOSE	○	○	○	○
OFF		○	○	○
OPEN	○	○	○	○

Power-cut switch

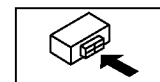
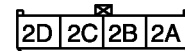
○—○ : Continuity

Switch position	Terminal								
	1M	1L (1D)	1N (1B)	1D (1L)	1B (1N)	1A	1C	1K	1I
UNLOCK	○	○	○	○	○	○	○	○	○
LOCK	○	○	○	○	○	○	○	○	○

(): R.H.D.



(): R.H.D.

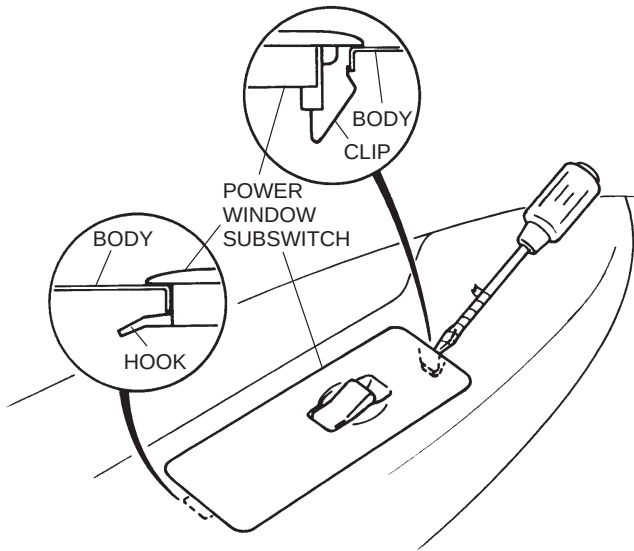


POWER WINDOW SYSTEM

POWER WINDOW SUBSWITCH REMOVAL/INSTALLATION (VEHICLES BUILT UP TO 07/2002)

Passenger's side

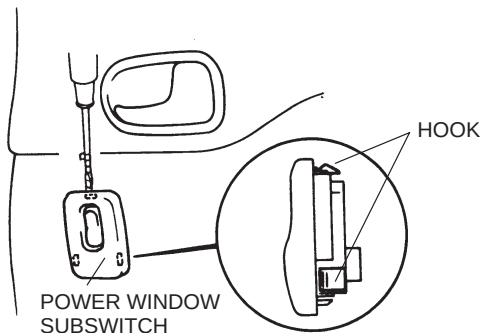
1. Disconnect the negative battery cable.
2. Disengage the clip using a tape-wrapped flathead screwdriver.
3. Pull the power window subswitch forward, and disengage the hook.



4. Disconnect the power window subswitch connector.
5. Install in the reverse order of removal.

Rear

1. Disconnect the negative battery cable.
2. Remove the hook by inserting a tape-wrapped, flathead screwdriver between the switch and the rear door trim.

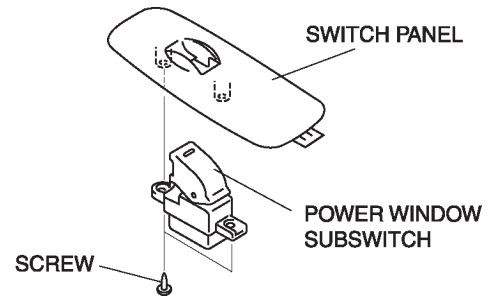


3. Disconnect the connector, and remove the power window subswitch.
4. Install in the reverse order of removal.

POWER WINDOW SUBSWITCH REMOVAL/INSTALLATION (VEHICLES BUILT FROM 08/2002)

Passenger's side

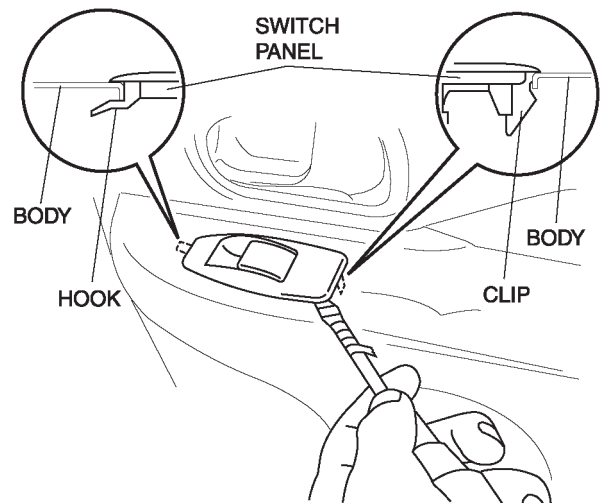
1. Disconnect the negative battery cable.
2. Remove the screw.
3. Remove the switch panel.



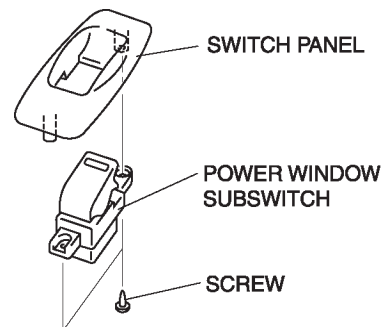
4. Remove the power window subswitch.
5. Install in the reverse order of removal.

Rear

1. Disconnect the negative battery cable.
2. Disengage the clip using a tape-wrapped flathead screwdriver.
3. Pull the power window subswitch panel forward to disengage the hook.



4. Remove the screw.
5. Remove the power window subswitch.



6. Install in the reverse order of removal.

POWER WINDOW SYSTEM

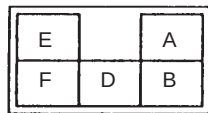
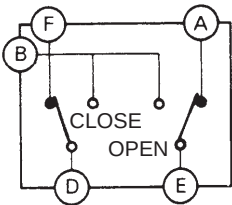
POWER WINDOW SUBSWITCH INSPECTION (VEHICLES BUILT UP TO 07/2002)

1. Remove the power window subswitch. (Refer to POWER WINDOW SUBSWITCH REMOVAL/INSTALLATION.)
2. Inspect for continuity between the power window subswitch terminals using an ohmmeter.

Passenger's side

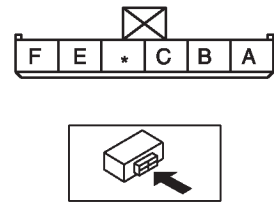
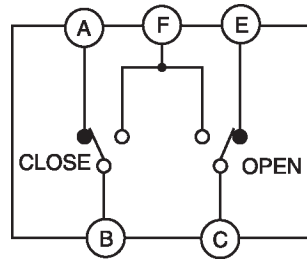
○—○ : Continuity

Switch position	Terminal				
	A	B	D	E	F
Off	○			○	○
Close	○		○	○	
Open		○	○	○	○



○—○ : Continuity

Switch position	Terminal				
	A	B	C	E	F
CLOSE		○	○	○	○
OFF	○	○	○	○	
OPEN	○	○	○		○



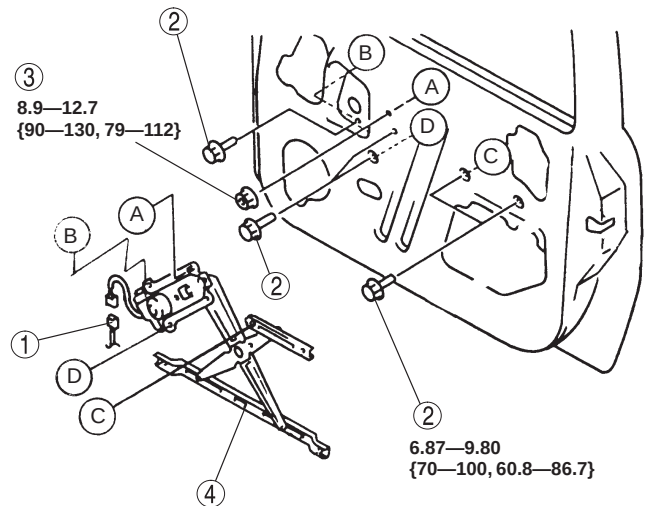
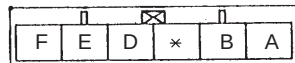
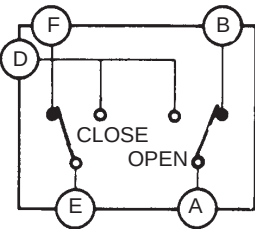
FRONT POWER WINDOW REGULATOR REMOVAL/INSTALLATION

1. Raise the rear edge of the front door glass **80 mm {3.1 in}** from the fully lowered position.
2. Disconnect the negative battery cable.
3. Remove the front glass guide and the rear glass guide. (Refer to DOOR, FRONT DOOR DISASSEMBLY/ASSEMBLY.)
4. Remove in the order indicated in the table.
5. Install in the reverse order of removal.

Rear

○—○ : Continuity

Switch position	Terminal				
	A	B	D	E	F
Close	○	○	○	○	
Off	○	○		○	○
Open	○		○	○	○



3. If not as specified, replace the power window subswitch.

POWER WINDOW SUBSWITCH INSPECTION (VEHICLES BUILT FROM 08/2002)

1. Inspect for continuity between the power window subswitch terminals.
 - If not as specified, replace the power window subswitch.

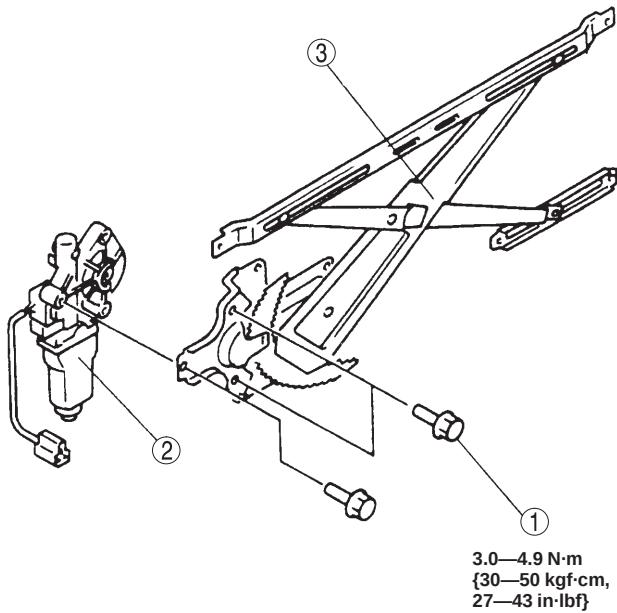
N·m {kgf·cm, in·lbf}

1	Front power window regulator connector
2	Bolt
3	Nut
4	Front power window regulator

POWER WINDOW SYSTEM

FRONT POWER WINDOW REGULATOR DISASSEMBLY/ASSEMBLY

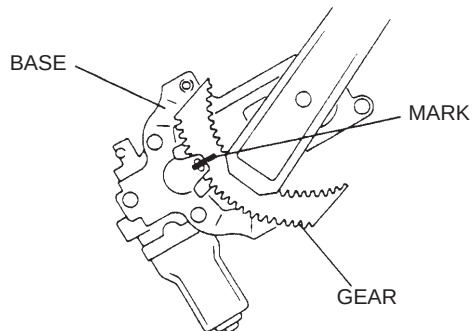
1. Disassemble in the order indicated in the table.
2. Assemble in the reverse order of disassembly.



1	Bolt
2	Power window motor + Disassembly Note + Assembly Note
3	Frame

Power Window Motor Disassembly Note

- Make marks on the gear and base of the frame before disassembling the power window motor.

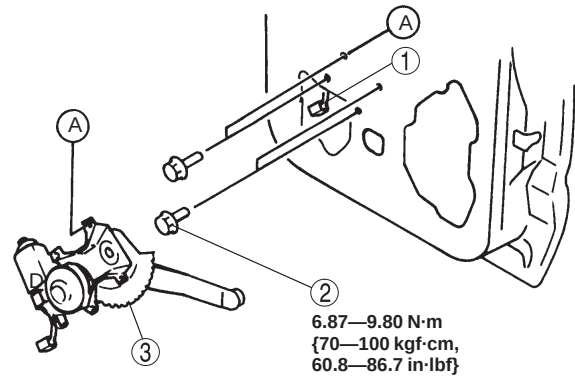


Power Window Motor Assembly Note

- Align the marks of the gear and the frame to install the power window motor.

REAR POWER WINDOW REGULATOR REMOVAL/INSTALLATION

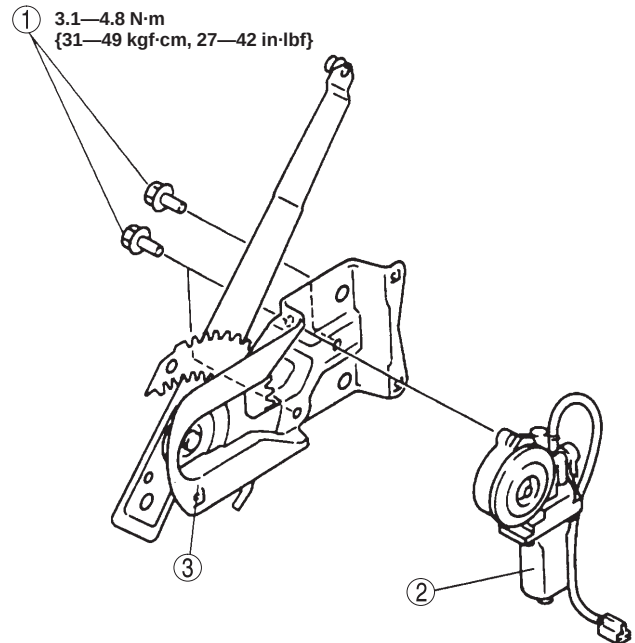
1. Raise the rear door glass completely.
2. Disconnect the negative battery cable.
3. Remove the door screen. (Refer to DOOR, REAR DOOR DISASSEMBLY/ASSEMBLY.)
4. Remove in the order indicated in the table.
5. Install in the reverse order of removal.



1	Rear power window regulator connector
2	Bolt
3	Rear power window regulator

REAR POWER WINDOW REGULATOR DISASSEMBLY/ASSEMBLY

1. Disassemble in the order indicated in the table.
2. Assemble in the reverse order of disassembly.

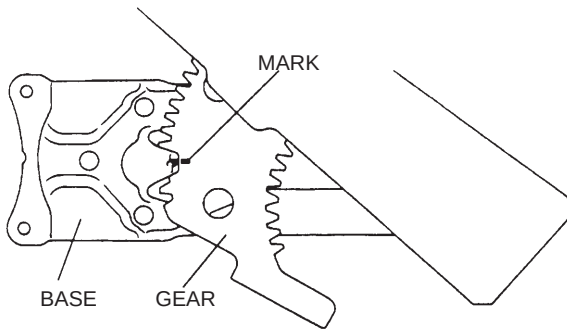


1	Bolt
2	Power window motor + Disassembly Note + Assembly Note
3	Frame

POWER WINDOW SYSTEM

Power Window Motor Disassembly Note

- Make marks on the gear and base of the frame before disassembling the power window motor.



Power Window Motor Assembly Note

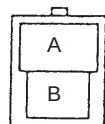
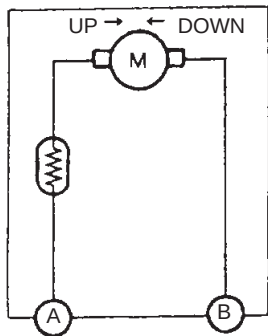
- Align the marks of the gear and base of the frame to install the power window motor.

POWER WINDOW MOTOR INSPECTION (VEHICLES BUILT UP TO 07/2002)

- Remove the power window motor. (Refer to FRONT POWER WINDOW REGULATOR DISASSEMBLY/ASSEMBLY.) (Refer to REAR POWER WINDOW REGULATOR DISASSEMBLY/ASSEMBLY.)
- Apply battery positive voltage to the power window motor terminals and inspect the operation of the power window motor.

B+: Battery positive voltage

Connection		Motor operation
B+	GND	
A	B	Up
B	A	Down



- If not as specified, replace the power window motor.

POWER WINDOW MOTOR INSPECTION (VEHICLES BUILT FROM 08/2002)

Driver's side

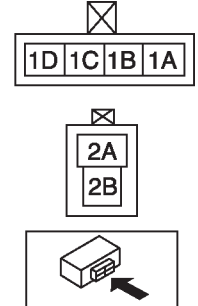
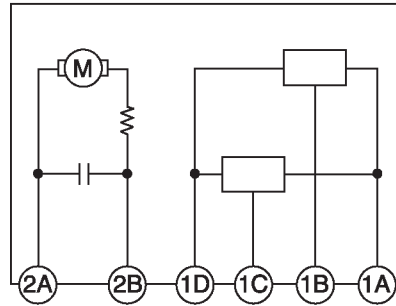
- Disconnect the power window motor connector.
- Apply **battery positive voltage** to the power window motor terminals 2A and 2B and inspect the power window motor operation.
 - If not as specified, replace the power window motor.
- Apply **battery positive voltage** to the power window motor terminal 1D and connect terminal 1A to ground.
- Measure the voltage at terminal 1B and 1C while performing Step 3.

- If not as specified, replace the power window motor.

Voltage

Pulse wave: MAX. 5V, MIN. 0V

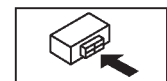
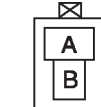
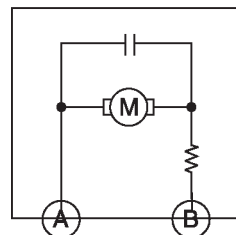
Motor operation	Terminal	
	2A	2B
UP	GND	B+
DOWN	B+	GND



Except Driver's Side

- Apply **battery positive voltage** to the power window motor terminals and inspect the power window motor.
 - If not as specified, replace the power window motor.

Motor operation	Terminal	
	A	B
UP	GND	B+
DOWN	B+	GND



INITIAL POSITION SETTING

Note

- A driver-side window will not fully close automatically under the following conditions:
 - The battery has been disconnected during vehicle maintenance or for other reasons.
 - The power window main switch connector, or driver-side power window motor connector has been disconnected.
 - Carry out the following procedure to resume operation:
 - Turn the ignition switch to the ON position.
 - Press the driver side power window main switch and fully open the driver-side window.

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3. Pull up the driver side power window main switch to manual–up position to fully close the driver side window, and keep holding the switch up at the position for **about 2 seconds** to complete initial setting.