

## INSPECTION

### 1. LHD Models:

#### INSPECT POWER WINDOW MASTER SWITCH CONTINUITY

##### Driver's Switch:

| Switch position | Tester connection | Specified condition |
|-----------------|-------------------|---------------------|
| UP              | 1 – 4, 3 – 9      | Continuity          |
| OFF             | 1 – 3 – 4         | Continuity          |
| DOWN            | 1 – 4, 3 – 9      | Continuity          |

##### Passenger's Switch (Window unlock):

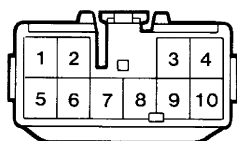
| Switch position | Tester connection | Specified condition |
|-----------------|-------------------|---------------------|
| UP              | 1 – 10, 8 – 9     | Continuity          |
| OFF             | 1 – 8 – 10        | Continuity          |
| DOWN            | 1 – 8, 9 – 10     | Continuity          |

##### Passenger's Switch (Window lock):

| Switch position | Tester connection | Specified condition |
|-----------------|-------------------|---------------------|
| UP              | 8 – 9             | Continuity          |
| OFF             | 8 – 10            | Continuity          |
| DOWN            | 9 – 10            | Continuity          |

If continuity is not as specified, replace the switch.

#### Wire Harness Side:



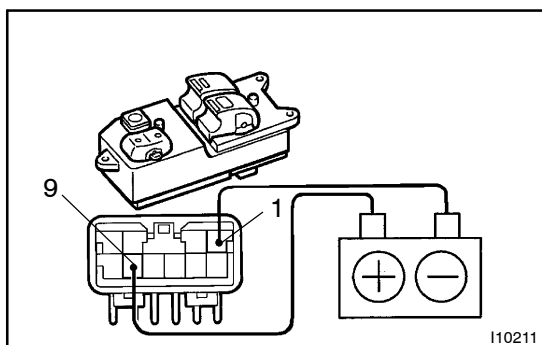
### 2. LHD Models:

#### INSPECT POWER WINDOW MASTER SWITCH CIRCUIT

Disconnect the connector from the master switch and inspect the connector on the wire harness side.

| Tester connection | Condition                            | Specified condition      |
|-------------------|--------------------------------------|--------------------------|
| 1 – Ground        | Constant                             | Continuity               |
| 9 – Ground        | Ignition switch position LOCK or ACC | No voltage               |
| 9 – Ground        | Ignition switch position ON          | Battery positive voltage |

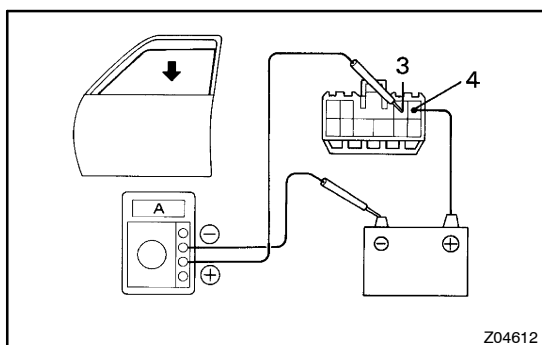
If the circuit is not as specified, inspect the circuits connected to other parts.



### 3. LHD Models: INSPECT POWER WINDOW MASTER SWITCH ILLUMINATION

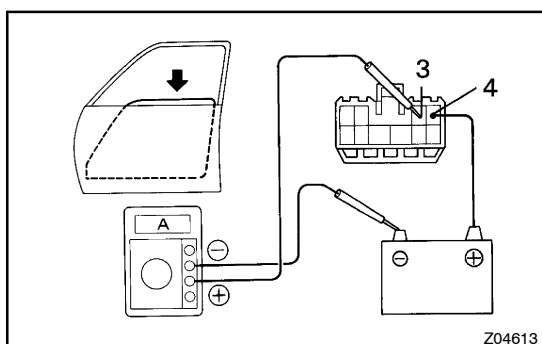
Connect the positive (+) lead from the battery to terminal 9 and the negative (-) lead to terminal 1, and check that the illuminations light up.

If operation is not as specified, replace the master switch.



### 4. LHD Models: INSPECT ONE-TOUCH POWER WINDOW SYSTEM/ CURRENT OF CIRCUIT (Using an ammeter)

- Disconnect the connector from the master switch.
- Connect the positive (+) lead from the ammeter to terminal 3 on the wire harness side connector and the negative (-) lead to negative (-) terminal of the battery.
- Connect the positive (+) lead from the battery to terminal 4 on the wire harness side connector.

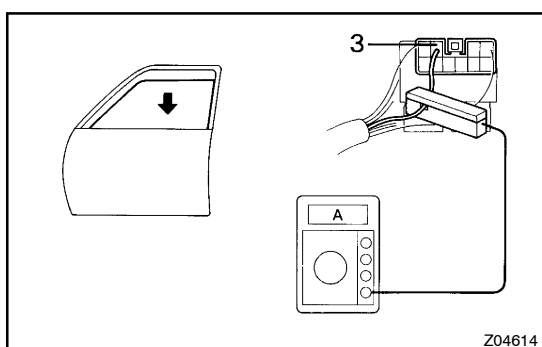


- As the window goes down, check that the current flow is approximately 7 A.
- Check that the current increases up to approximately 14.5 A or more when the window stops going down.

#### HINT:

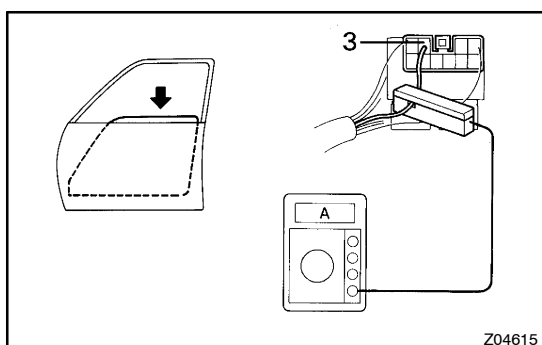
The circuit breaker opens some 4 – 40 seconds after the window stops going down, so that check must be done before the PTC operates.

If the operation is as specified, replace the master switch.



### 5. LHD Models: INSPECT ONE-TOUCH POWER WINDOW SYSTEM/ CURRENT OF CIRCUIT (Using an ammeter with a current-measuring probe)

- Remove the master switch with connector connected.
- Attach a current-measuring probe to terminal 3 of the wire harness.
- Turn the ignition switch ON and set the power window switch in the down position.

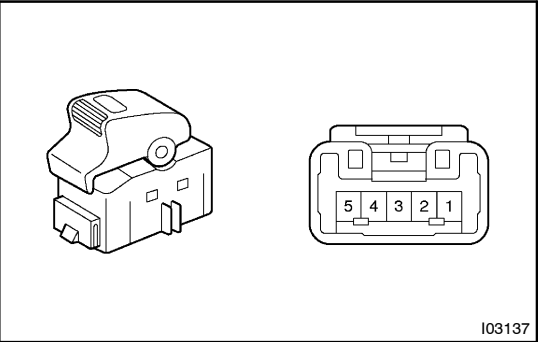


- As the window goes down, check that the current flow is approximately 7 A.
- Check that the current increases up to approximately 14.5 A or more when the window stops going down.

#### HINT:

The circuit breaker opens some 4 – 40 seconds after the window stops going down, so that check must be done before the PTC operates.

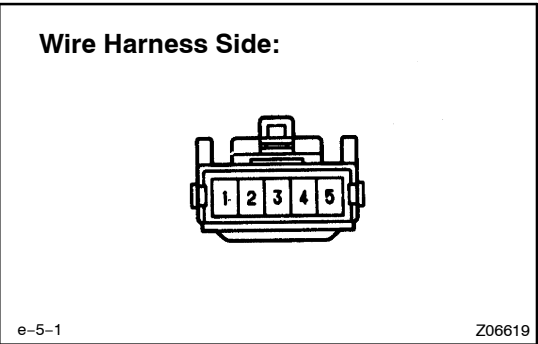
If operation is as specified, replace the master switch.



6. LHD Models:  
INSPECT POWER WINDOW SWITCH CONTINUITY

| Switch position | Tester connection | Specified condition |
|-----------------|-------------------|---------------------|
| UP              | 1 – 2, 3 – 4      | Continuity          |
| OFF             | 1 – 2, 3 – 5      | Continuity          |
| DOWN            | 1 – 4, 3 – 5      | Continuity          |

If continuity is not as specified, replace the switch.

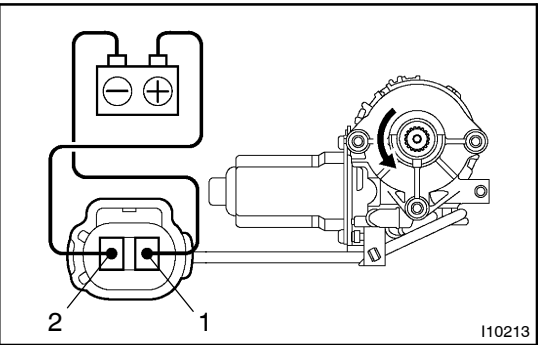


7. LHD Models:  
INSPECT POWER WINDOW SWITCH CIRCUIT

Disconnect the connector from the switch and inspect the connector on the wire harness side, as shown.

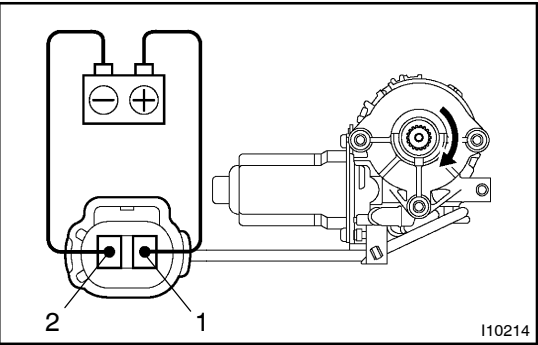
| Tester connection | Condition                                 | Specified condition      |
|-------------------|---|--------------------------|
| 2 – Ground        | Ignition switch ON and master switch OFF  | No voltage               |
| 2 – Ground        | Ignition switch ON and master switch DOWN | Battery positive voltage |
| 3 – Ground        | Ignition switch ON                        | Battery positive voltage |
| 4 – Ground        | Ignition switch ON and master switch OFF  | No voltage               |
| 4 – Ground        | Ignition switch ON and master switch UP   | Battery positive voltage |

If the circuit is not as specified, inspect the circuits connected to other parts.



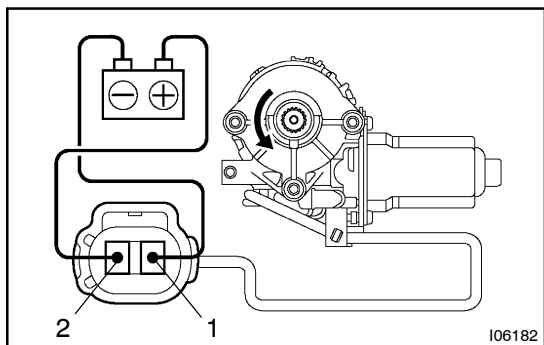
8. LHD Models:  
Driver's Door:  
INSPECT POWER WINDOW MOTOR OPERATION

(a) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1, check that the motor turns counterclockwise.



(b) Reverse the polarity, check that the motor turns clockwise.

If operation is not as specified, replace the motor.

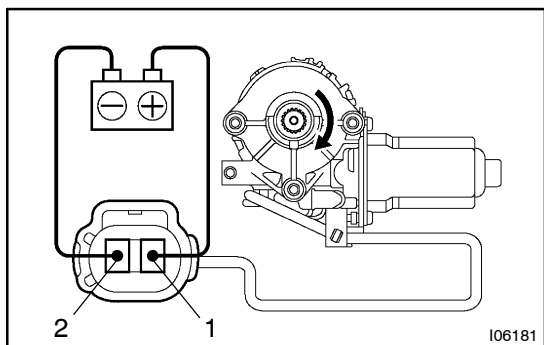


## 9. LHD Models:

### Passenger's Door:

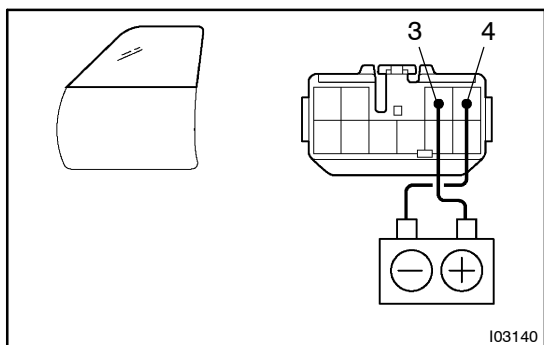
#### INSPECT POWER WINDOW MOTOR OPERATION

- (a) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1, check that the motor turns counterclockwise.



- (b) Reverse the polarity, check that the motor turns clockwise.

If operation is not as specified, replace the motor.

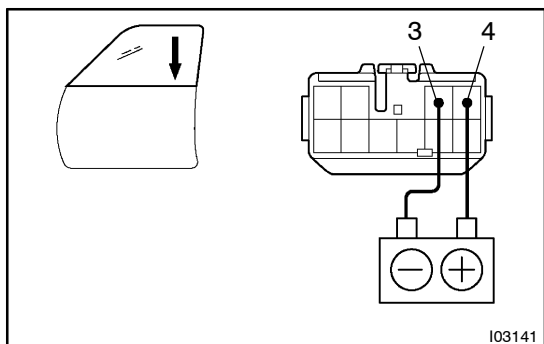


## 10. LHD Models:

### Driver's Door:

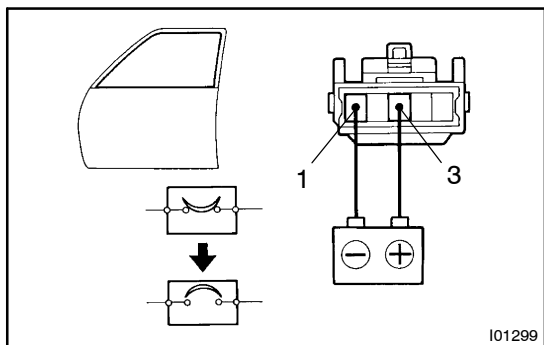
#### INSPECT POWER WINDOW MOTOR PTC OPERATION

- (a) Disconnect the connector from the master switch.
- (b) Connect the positive (+) lead from the battery to terminal 3 and the negative (-) lead to terminal 4 on the wire harness side connector and raise the window to full closed position.
- (c) Continue to apply voltage, check that there is a PTC operation noise within approximately 4 to 40 seconds.

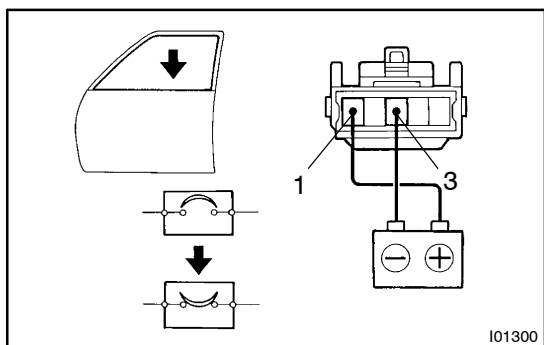


- (d) Reverse the polarity, check that the window begins to descend within approximately 60 seconds.

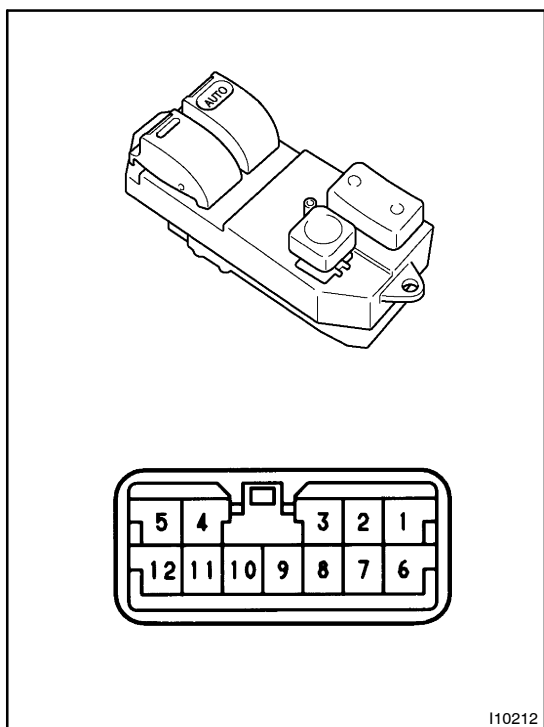
If operation is not as specified, replace the motor.

**11. LHD Models:****Passenger's Door:****INSPECT POWER WINDOW MOTOR PTC OPERATION**

- (a) Disconnect the connector from the power window switch.
- (b) Connect the positive (+) lead from the battery to terminal 3 and the negative (-) lead to terminal 1 on the wire harness side connector, and raise the window to full closed position.
- (c) Continue to apply voltage, check that there is a PTC operation noise within approximately 4 to 40 seconds.



- (d) Reverse the polarity, check that the window begins to descend within approximately 60 seconds.
- If operation is not as specified, replace the motor.

**12. RHD Models:****INSPECT POWER WINDOW MASTER SWITCH CONTINUITY AND VOLTAGE**

Remove the power window master switch and disconnect the connector.

**HINT:**

In case of checking the driver's switch, connect the battery positive (+) lead to terminal 5 and 8, and battery negative (–) lead to terminal 3.

**Driver's Switch:**

| Switch position | Tester connection | Specified condition |
|-----------------|-------------------|---------------------|
| AUTO UP, UP     | 12 – 9            | Battery voltage     |
| UP              | 3 – 4, 5 – 12     | Continuity          |
| OFF             | 3 – 4 – 12        | Continuity          |
| AUTO DOWN, DOWN | 4 – 3             | Battery voltage     |
| AUTO DOWN, DOWN | 3 – 12, 4 – 5     | Continuity          |

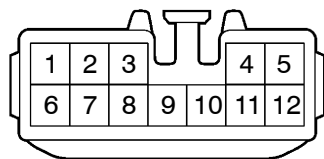
**Passenger's Switch (Window unlock):**

| Switch position | Tester connection | Specified condition |
|-----------------|-------------------|---------------------|
| UP              | 3 – 7, 8 – 9      | Continuity          |
| OFF             | 3 – 7 – 9         | Continuity          |
| DOWN            | 3 – 9, 8 – 9      | Continuity          |

**Passenger's Switch (Window lock):**

| Switch position | Tester connection | Specified condition |
|-----------------|-------------------|---------------------|
| UP              | 8 – 9             | Continuity          |
| OFF             | 7 – 9             | Continuity          |
| DOWN            | 7 – 8             | Continuity          |

If continuity is not as specified, replace the switch.

**Wire Harness Side:**

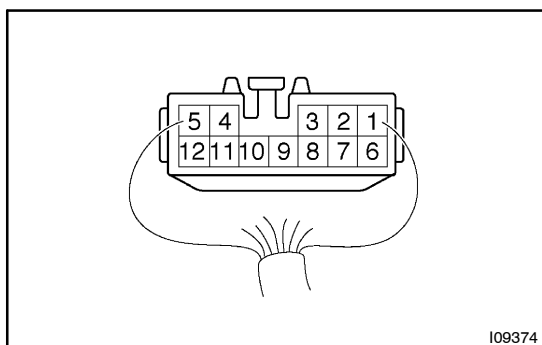
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**13. RHD Models:**  
**INSPECT POWER WINDOW MASTER SWITCH CIRCUIT**

- (a) Disconnect the connector from the power window master switch and inspect the connector on wire harness side, as shown in the chart below.

| Tester connection  | Condition                                       | Specified condition |
|--------------------|---|---------------------|
| 2 (SGND) – Ground  | Constant  | Continuity          |
| 3 (E) – Ground     | Constant  | Continuity          |
| 5 (PWR) – 3 (E)    | Constant  | 10 – 14 V           |
| 6 (LMT) – 8 (SGND) | Driver's door window full-close position        | No continuity       |
|                    | Driver's door window except full-close position | Continuity          |
| 8 (IG) – 3 (E)     | Ignition switch "OFF (LOCK or ACC)"             | 0 V                 |
|                    | Ignition switch "ON"                            | 10 – 14 V           |

If the circuit is not as specified, inspect the circuits connected to other parts.



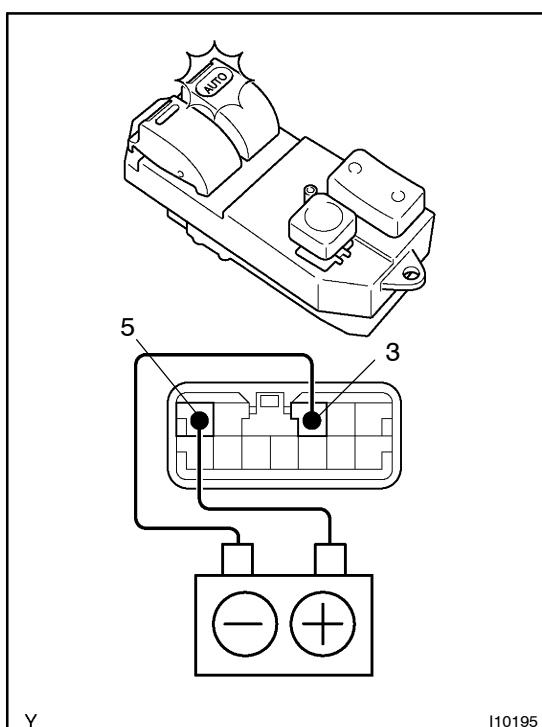
- (b) Connect the connector to power window master switch and inspect the wire harness side connector from the back side, as shown in the chart below.

Test condition:

Ignition switch ON

| Tester connection  | Condition  | Specified condition         |
|--------------------|--|-----------------------------|
| 1 (PLS) – 8 (SGND) | During power window motor                        | Less than 0.5 V or 6 – 14 V |
| 4 (DD) – 3 (E)     | Driver's power window switch "OFF"               | 0 V                         |
|                    | Driver's power window switch "DOWN"              | 10 – 14 V                   |
|                    | Driver's power window switch "AUTO DOWN"         | 10 – 14 V                   |
| 6 (LMT) – 8 (SGND) | Driver's power window full-close position        | 0 V                         |
|                    | Driver's power window except full-close position | 6 – 9 V                     |
| 7 (PD) – 3 (E)     | Passenger's power window switch "OFF"            | 0 V                         |
|                    | Passenger's power window switch "DOWN"           | 10 – 14 V                   |
| 9 (PU) – 3 (E)     | Passenger's power window switch "OFF"            | 0 V                         |
|                    | Passenger's power window switch "UP"             | 10 – 14 V                   |
| 12 (DU) – 3 (E)    | Driver's power window switch "OFF"               | 0 V                         |
|                    | Driver's power window switch "UP"                | 10 – 14 V                   |
|                    | Driver's power window switch "AUTO UP"           | 10 – 14 V                   |

If circuit is not specified, inspect the wire harness.

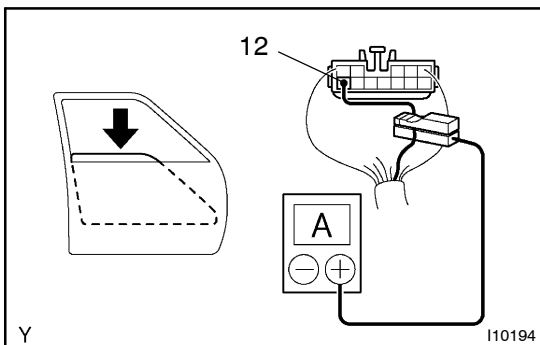
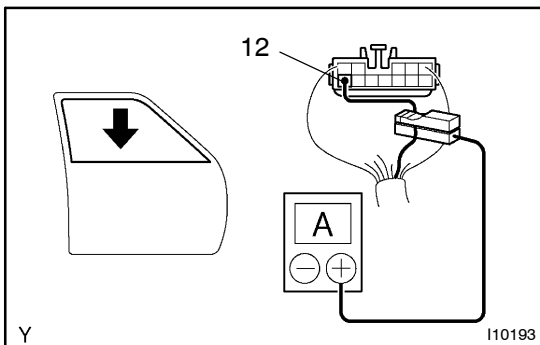
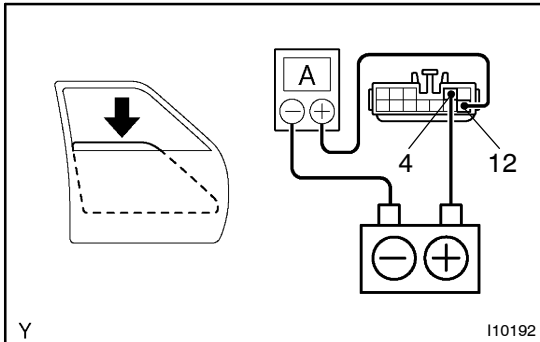
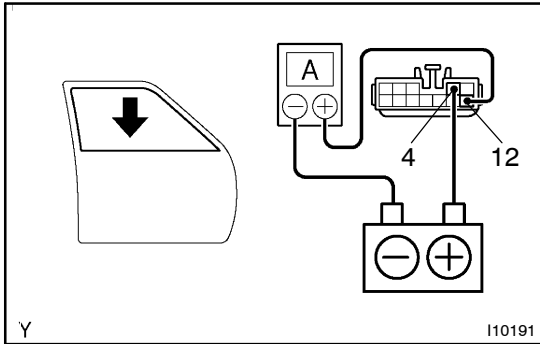


#### 14. RHD Models:

##### INSPECT POWER WINDOW MASTER SWITCH ILLUMINATION

Connect the positive (+) lead from the battery to terminal 5 and the negative (-) lead to terminal 3, and check that the illumination light up.



**15. RHD Models:****Using an ammeter:****INSPECT ONE-TOUCH POWER WINDOW SYSTEM/CURRENT OF CIRCUIT**

- Disconnect the connector from the master switch.
- Connect the positive (+) lead from the ammeter to terminal 12 on the wire harness side connector and the negative (-) lead to negative (-) terminal of the battery.
- Connect the positive (+) lead from the battery to terminal 4 on the wire harness side connector.
- As the window goes down, check that the current flow is approximately 7 A.
- Check that the current increases up to approximately 14.5 A or more when the window stops going down.

**HINT:**

The circuit breaker opens some 4 – 40 seconds after the window stops going down, so that check must be done before the PTC operates.

If the operation is as specified, replace the master switch.

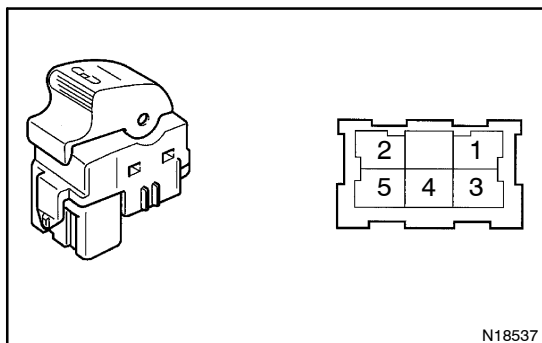
**16. RHD Models:****Using an ammeter with a current-measuring probe:****INSPECT ONE-TOUCH POWER WINDOW SYSTEM/CURRENT OF CIRCUIT (Using an ammeter with a current-measuring probe)**

- Remove the master switch with connector connected.
- Attach a current-measuring probe to terminal 12 of the wire harness.
- Turn the ignition switch ON and set the power window switch in the down position.
- As the window goes down, check that the current flow is approximately 7 A.
- Check that the current increases up to approximately 14.5 A or more when the window stops going down.

**HINT:**

The circuit breaker opens some 4 – 40 seconds after the window stops going down, so that check must be done before the PTC operates.

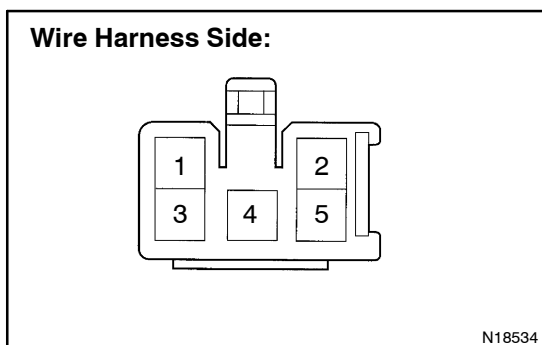
If operation is as specified, replace the master switch.



### 17. RHD Models: INSPECT POWER WINDOW SWITCH CONTINUITY

| Switch position | Tester connection | Specified condition |
|-----------------|-------------------|---------------------|
| UP              | 1 – 5, 3 – 4      | Continuity          |
| OFF             | 1 – 2, 3 – 4      | Continuity          |
| DOWN            | 1 – 2, 4 – 5      | Continuity          |

If continuity is as specified, replace the power window switch.

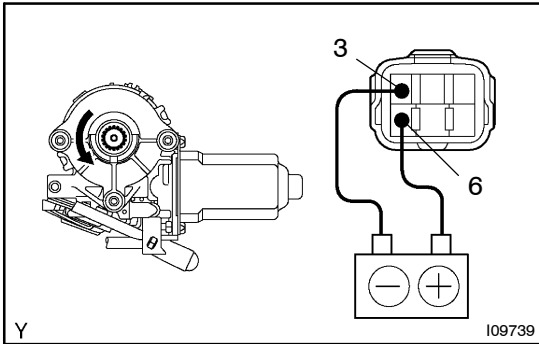


### 18. RHD Models: INSPECT POWER WINDOW SWITCH CIRCUIT

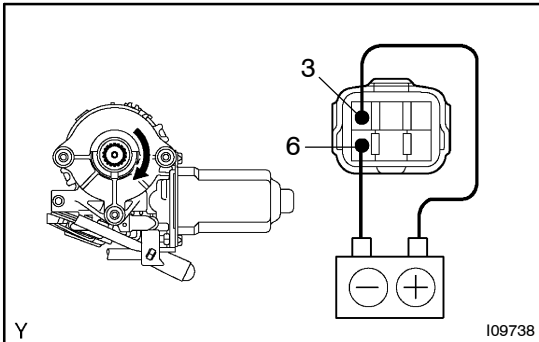
Disconnect the connector from the switch and inspect the connector on the wire harness side.

| Tester connection | Condition   | Specified condition |
|-------------------|---|---------------------|
| 2 (SU) – Ground   | Ignition switch ON and power window master switch position "UP"   | 10 – 14 V           |
|                   | Ignition switch ON and power window master switch position "OFF"  | 0 V                 |
| 3 (SD) – Ground   | Ignition switch ON and power window master switch position "DOWN" | 10 – 14 V           |
|                   | Ignition switch ON and power window master switch position "OFF"  | 0 V                 |
| 5 (B) – Ground    | Ignition switch position "ON"                                     | 10 – 14 V           |
|                   | Ignition switch position "OFF (LOCK or ACC)"                      | 0 V                 |

If the circuit is not as specified, inspect the circuits connected to other parts.

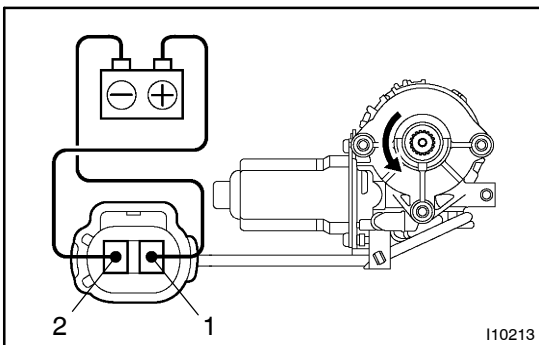
**19. RHD Models:****Driver's Door:****INSPECT POWER WINDOW MOTOR OPERATION**

- (a) Connect the positive (+) lead from the battery to terminal 6 and the negative (-) lead to terminal 3, check that the motor turns counterclockwise.

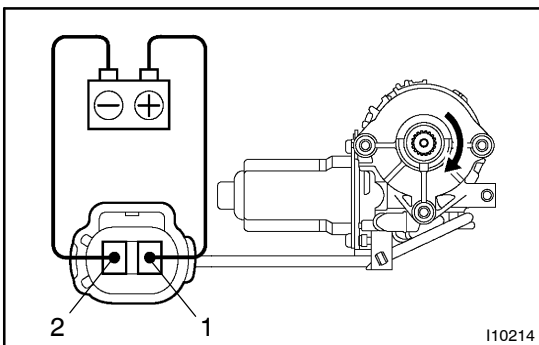


- (b) Reverse the polarity, check that the motor turns clockwise.

If operation is not as specified, replace the motor.

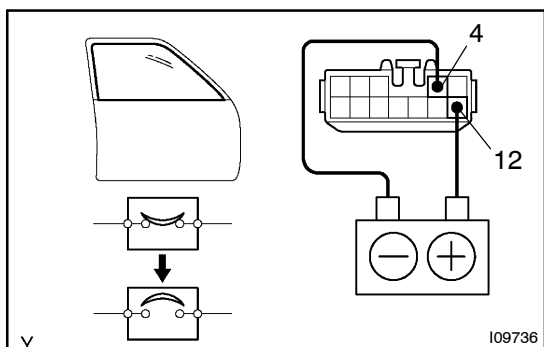
**20. RHD Models:****Passenger's Door:****INSPECT POWER WINDOW MOTOR OPERATION**

- (a) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1, check that the motor turns counterclockwise.

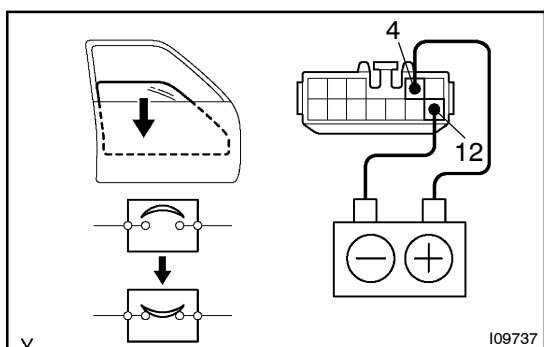


- (b) Reverse the polarity, check that the motor turns clockwise.

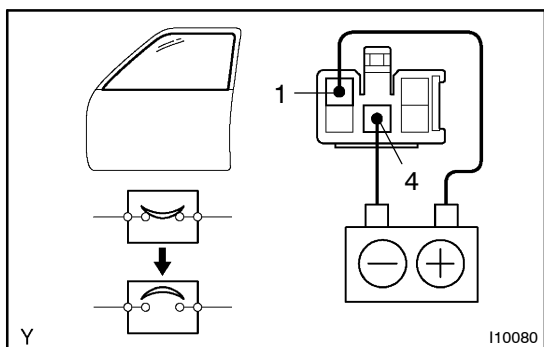
If operation is not as specified, replace the motor.

**21. RHD Models:****Driver's Door:****INSPECT POWER WINDOW MOTOR PTC OPERATION**

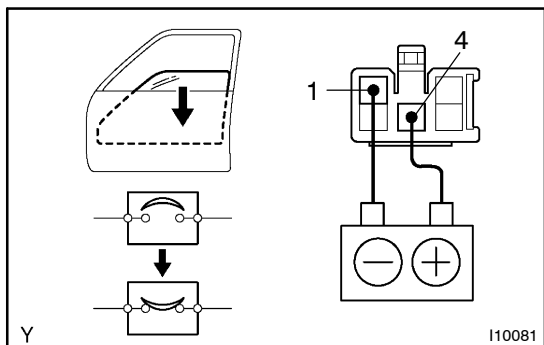
- (a) Disconnect the connector from the master switch.
- (b) Connect the positive (+) lead from the battery to terminal 12 and the negative (-) lead to terminal 4 on the wire harness side connector and raise the window to full closed position.
- (c) Continue to apply voltage, check that there is a PTC operation noise within approximately 4 to 40 seconds.



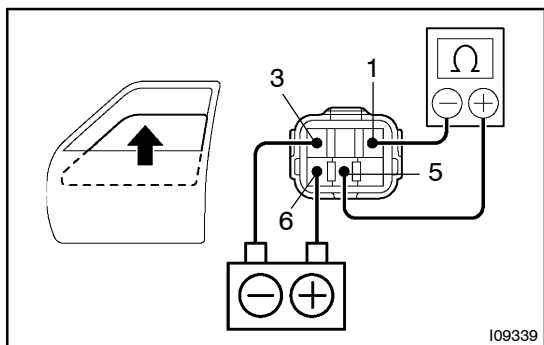
- (d) Reverse the polarity, check that the window begins to descend within approximately 60 seconds.
- If operation is not as specified, replace the motor.

**22. RHD Models:****Passenger's Door:****INSPECT POWER WINDOW MOTOR PTC OPERATION**

- (a) Disconnect the connector from the power window switch.
- (b) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 4 on the wire harness side connector, and raise the window to full closed position.
- (c) Continue to apply voltage, check that there is a PTC operation noise within approximately 4 to 40 seconds.

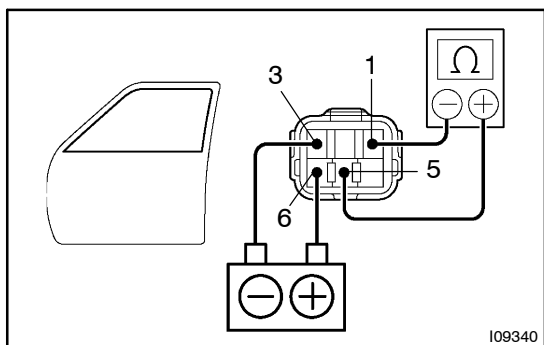


- (d) Reverse the polarity, check that the window begins to descend within approximately 60 seconds.  
If operation is not as specified, replace the motor.



**23. Window Up:  
INSPECT JAM PROTECTION LIMIT SWITCH OPERATION**

- (a) Connect the positive (+) lead from the ohmmeter to terminal 1 and the negative (-) lead to terminal 5.  
(b) Connect the positive (+) lead from the battery to terminal 6 and the negative (-) lead to terminal 3.  
(c) Check that the continuity exists when the window goes up.

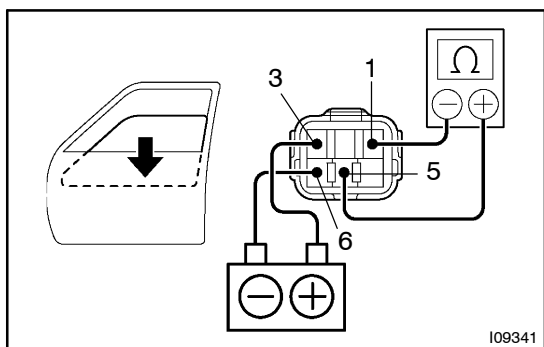


- (d) Check that the no continuity exists when the window is in the fully closed position.

If operation is not as specified, replace the motor.

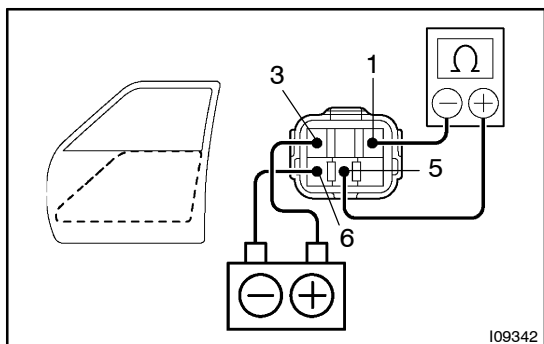
**NOTICE:**

**If connecting the wire harness wrongly, the sensor might be damaged so caution is necessary.**



**24. Window Up:  
INSPECT JAM PROTECTION LIMIT SWITCH OPERATION**

- (a) Connect the positive (+) lead from the ohmmeter to terminal 5 and the negative (-) lead to terminal 1.  
(b) Connect the positive (+) lead from the battery to terminal 3 and the negative (-) lead to terminal 6.  
(c) Check that the continuity exists when the window goes down.

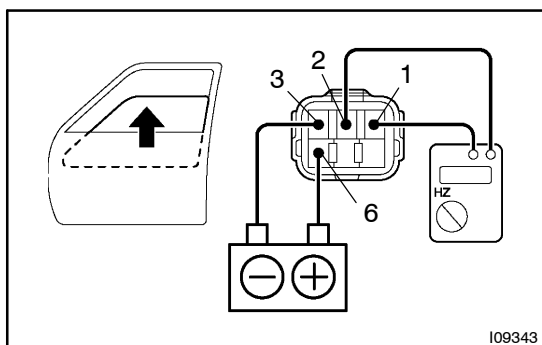


- (d) Check that the no continuity exists when the window is in the fully closed position.

If operation is not as specified, replace the motor.

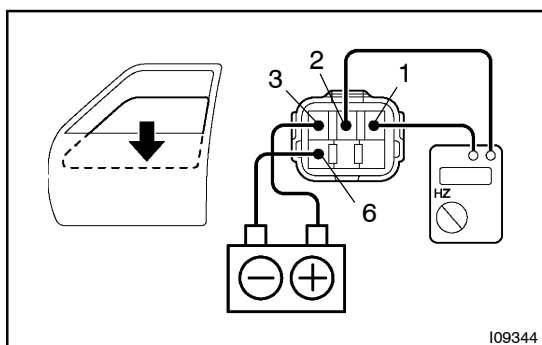
**NOTICE:**

**If connecting the wire harness wrongly, the sensor might be damaged so caution is necessary.**



## 25. INSPECT JAM PROTECTION PULSE SWITCH OPERATION

- Connect the positive (+) lead from TOYOTA electrical tester to terminal 1 and the negative (–) lead to terminal 2.
- Connect the positive (+) lead from the battery to terminal 6 and the negative (–) lead to terminal 3.
- Check that pulse is generated during the motor running.



- Reverse the polarity and check that pulse is generated. If operation is not as specified, replace the motor.

### NOTICE:

**If connecting the wire harness wrongly, the sensor might be damaged so caution is necessary.**

## 26. CHECKING OF THE JAM PROTECTION FUNCTION

### NOTICE:

**Never, ever be caught any part of your body when checking.**

### HINT:

In case of performing resetting of the limit switch, do checking after repeating up and down of the glass with automatic operation.

- Confirmation of AUTO up operation:  
Confirm that the window will be fully close with AUTO up operation.
- Checking of the operation of the jam protection function:
  - Move up the window with AUTO up operation and check that the window will go down when it touches the handle of the hammer studded.
  - Confirm that the window will then stop going down about 200 mm.

### HINT:

In case of removing the glass, glass guide, regulator and etc. be sure to perform checking of the jam protection function.

If the jam protection is not function properly, adjust power window motor reset switch and pulse switch.