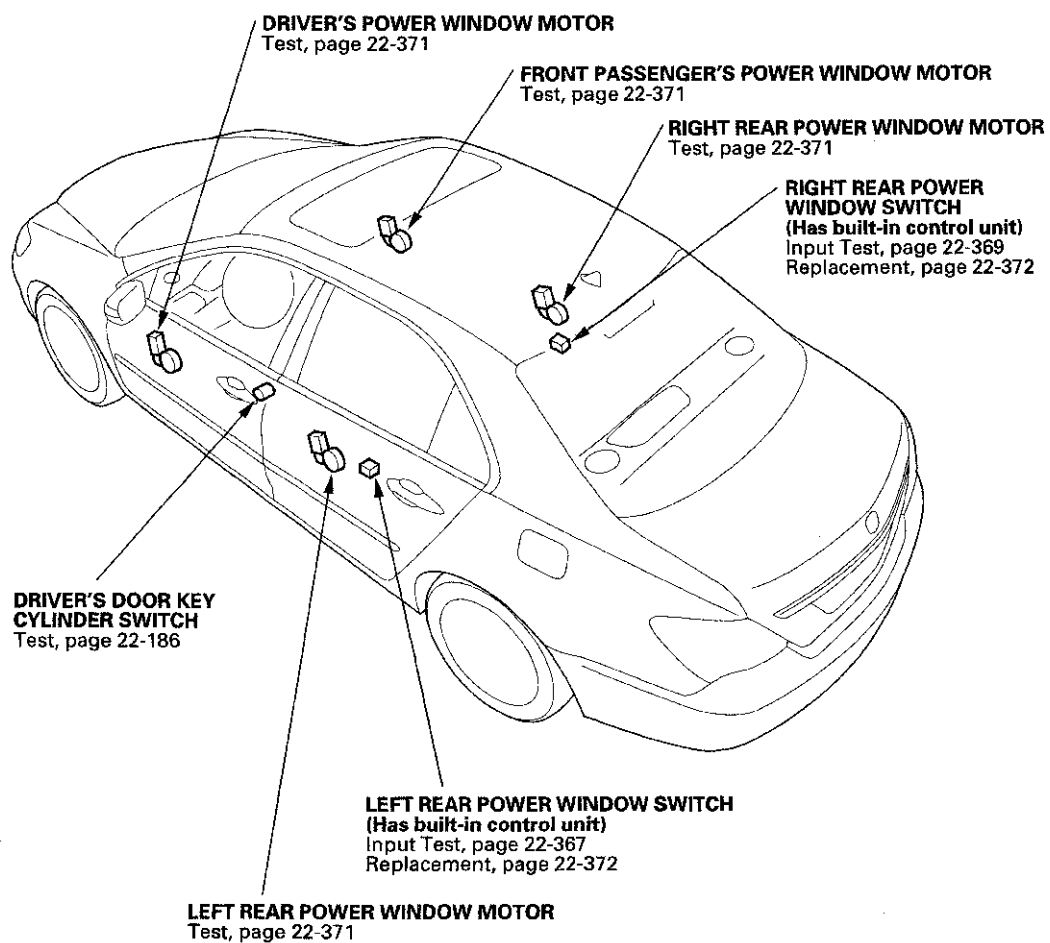
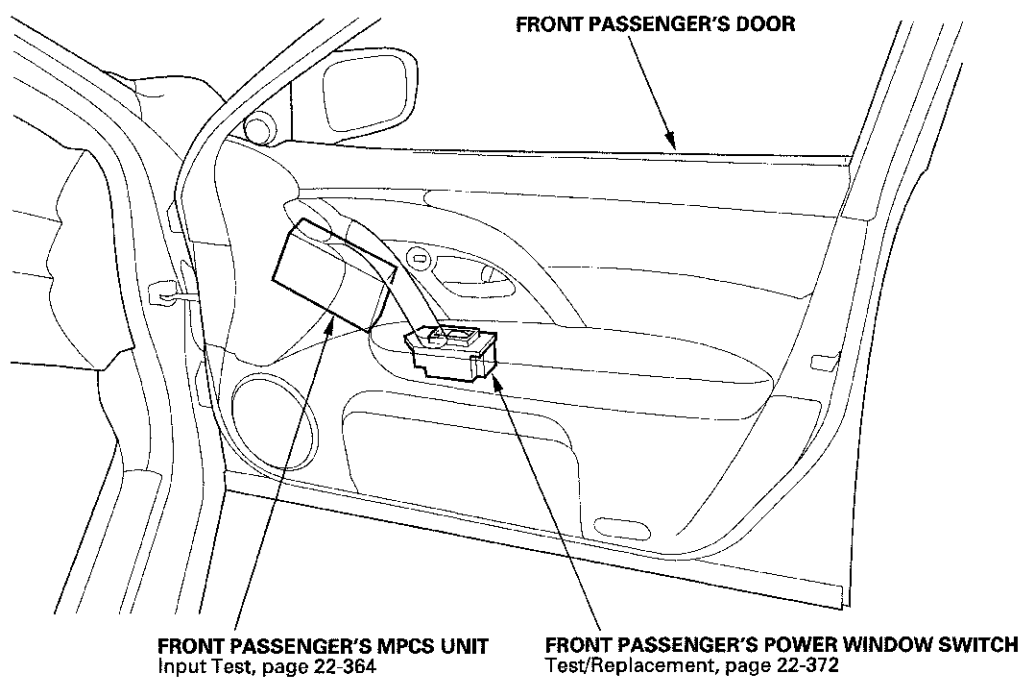
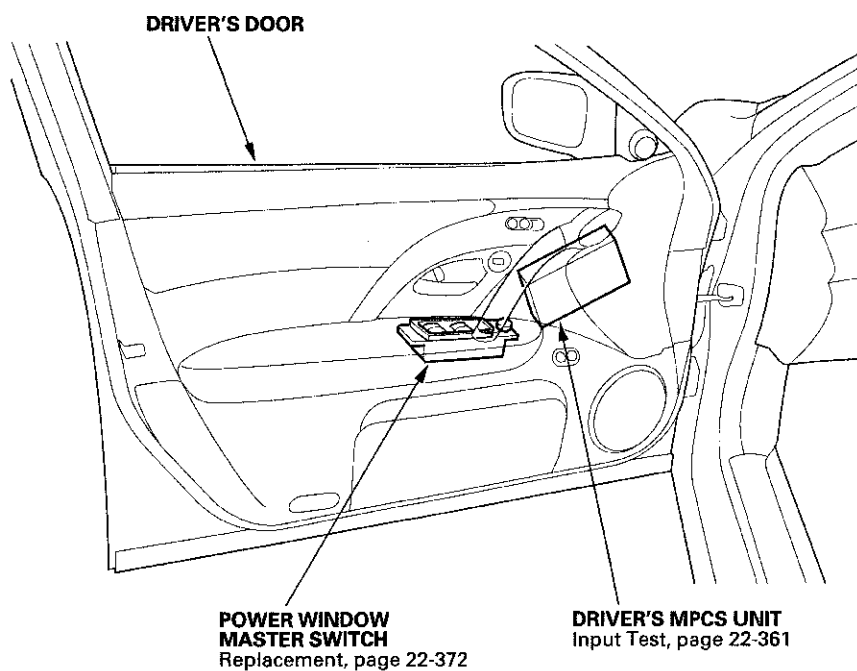


Power Windows

Component Location Index





Power Windows

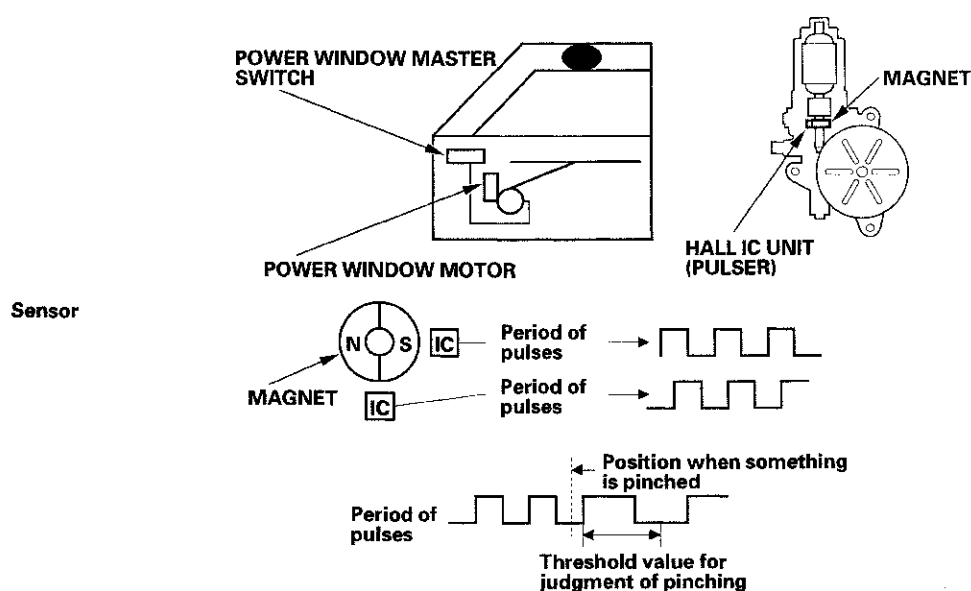
System Description

Auto Reverse Power Window Operation

The system is composed of the driver's MPCS unit, the front passenger's MPCS unit, the power window master switch, the passenger's power window switch, and the power window motors.

The rear power window switches have built-in control units.

The power window motor incorporates a Hall IC unit (pulser) which generates pulses during the motor's operation and sends pulses to the power window control unit. As soon as the power window control unit detects a change in pulse frequency from the Hall IC unit (pulser), the power window control unit makes the power window motor stop and reverse. This prevents pinching your hand or fingers during auto-up operation. The auto reverse function does not work when the driver's window switch is held in the up position.



Key Cylinder Operation

With the key inserted in the driver's door key cylinder, turn the key a second time within 15 seconds and hold it to operate the power windows and moonroof (clockwise to open, counterclockwise to close). The power windows and moonroof stop moving when the key is released. The anti-pinch operation is not active when closing the power windows and moonroof with the key cylinder.

Keyless Operation

By pressing the UNLOCK button of the remote a second time within 15 seconds and hold, the power windows and moonroof open. The power windows and moonroof stop moving when the UNLOCK button is released. The power windows do not close with the LOCK button.



Resetting the Power Window Control Unit

Reset the power windows after doing any of the following actions:

- Power window regulator replacement, removal/ installation, or repair
 - Power window motor replacement, removal/ installation, or repair
 - Window run channel replacement or removal/ installation
 - Driver's MPCS unit replacement or repair
 - Front passenger's MPCS unit replacement or repair
 - Rear power window switch replacement
 - Door glass replacement, removal/installation, or repair
 - Power is removed from the driver's power window master switch or front passenger's power window switch while the power window timer is ON.
- * : With front passenger's power window AUTO UP/AUTO DOWN function

NOTE: If the front passenger's power window has lost power when the key off timer is ON, it cannot be operated from the driver's switch and must be reset from the front passenger's power window switch.

Using the HDS

1. Connect the HDS to the data link connector.
2. Turn the ignition switch to ON (II), then enter the vehicle's VIN and mileage at the prompts.
3. Select BODY ELECTRICAL from the menu.
4. From the BODY ELECTRICAL menu, select POWER WINDOWS.
5. From the MODE menu, select ADJUSTMENT.
6. From the ADJUSTMENT menu, select WINDOW RESET for driver's side (passenger's side) window.
7. Follow the prompts on the screen.
8. Confirm that the power window control unit is reset by using the power window AUTO UP and AUTO DOWN function.

Without the HDS

NOTE:

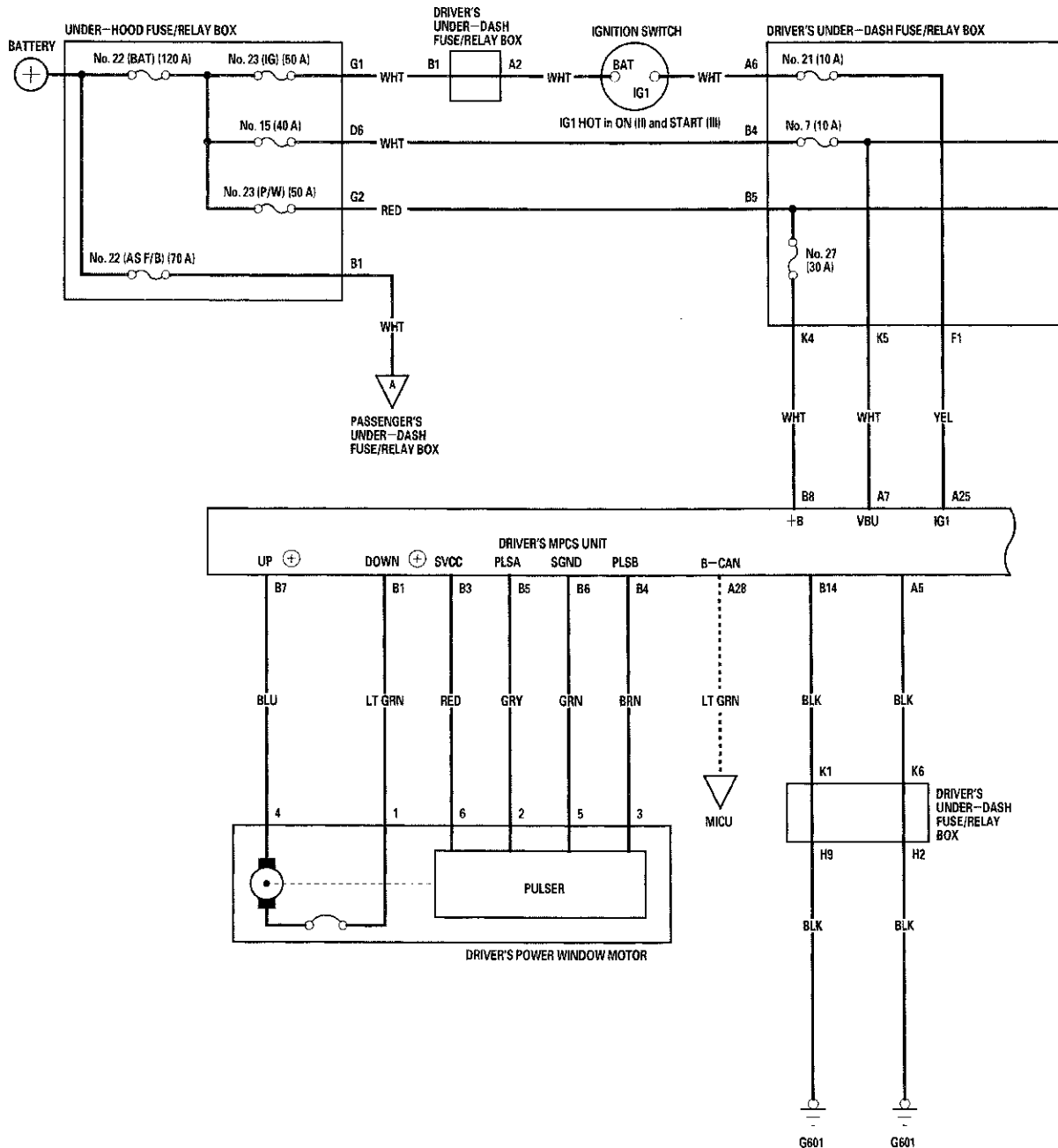
- Do each bullet in step 4 within 5 seconds of each other.
- The front passenger's power window must be retest from the front passenger's power window switch.

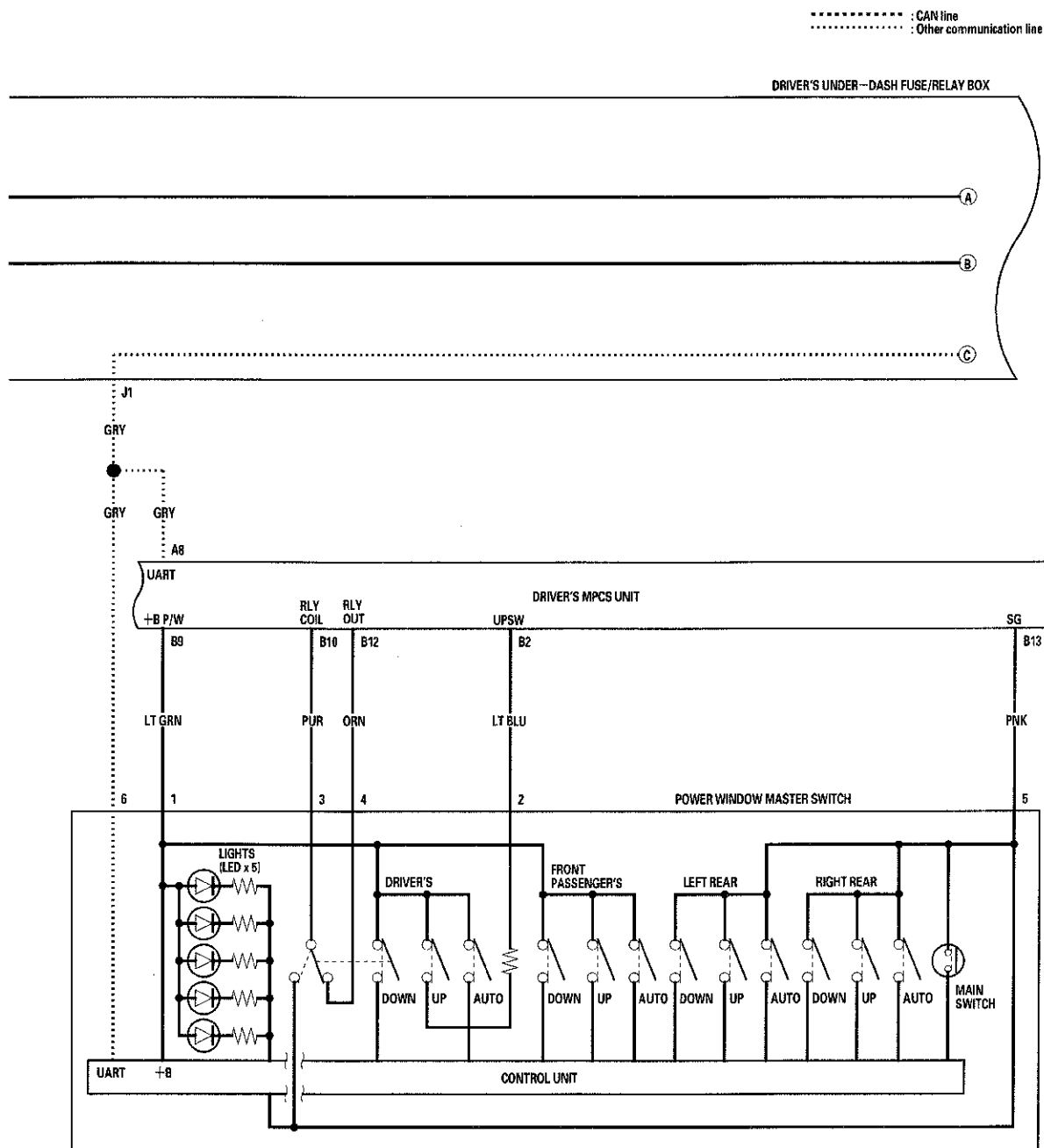
1. Turn the ignition switch to ON (II).
2. Move the power window all the way down by using the power window DOWN switch.
3. Open the driver's door.
4. Do the following three times before going to step 5:
 - Turn the ignition switch to LOCK (0).
 - Push and hold the power window DOWN switch.
 - Turn the ignition switch to ON (II).
 - Release the power window DOWN switch.
5. Confirm that AUTO UP no longer works. If AUTO UP still works, go back to step 1.
6. Move the power window all the way down using the power window DOWN switch.
7. Pull up and hold the power window UP switch until the power window is all the way up, then continue to hold the switch for at least 1 second.
8. Confirm that the power window control unit is reset by using the power window AUTO UP and AUTO DOWN function.

If the power window still does not work in AUTO, repeat the procedure several times, paying close attention to the 5 second time limit between steps. If it still does not work, go to B-CAN System Diagnosis Test Mode A (see page 22-131).

Power Windows

Circuit Diagram

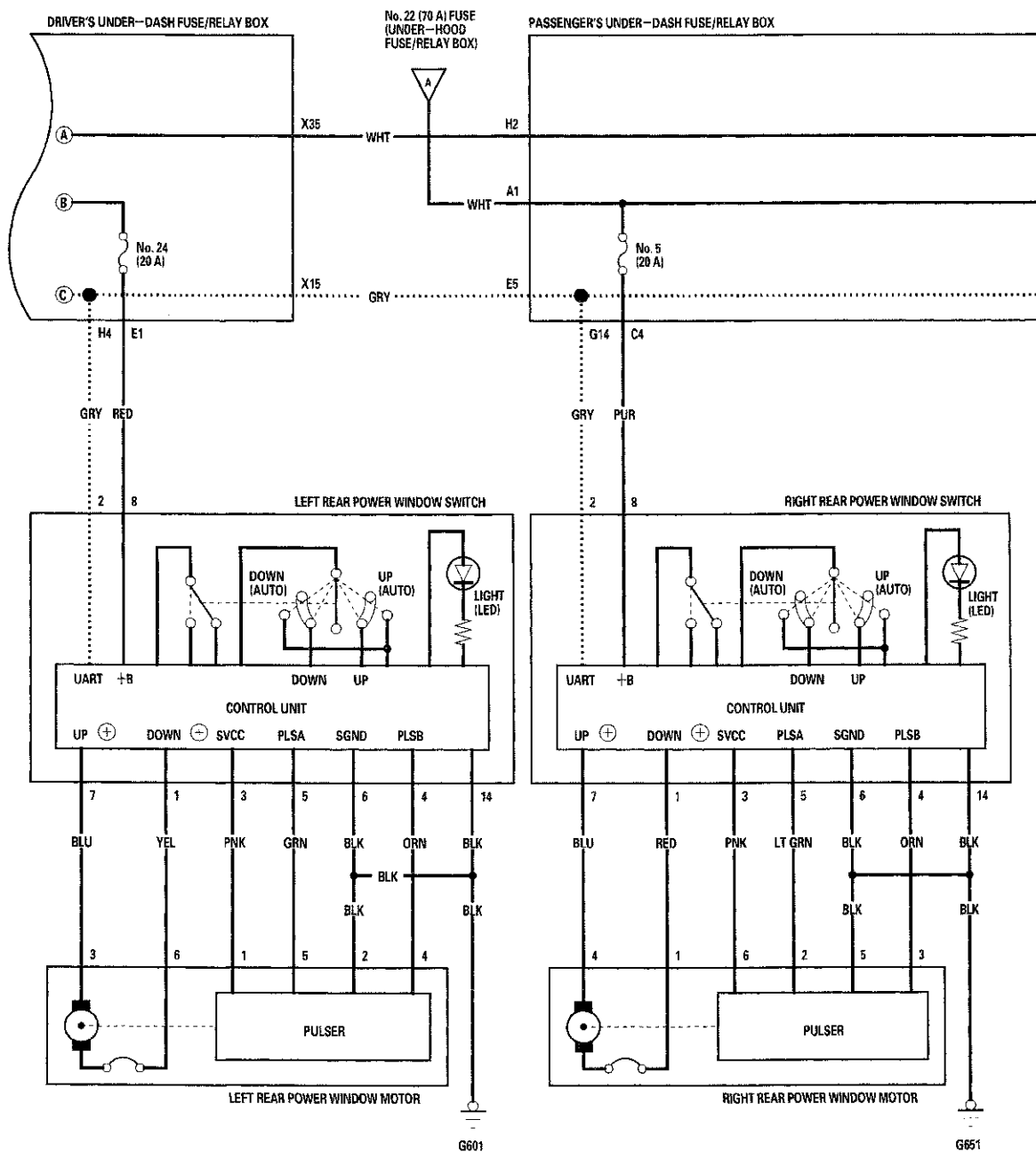


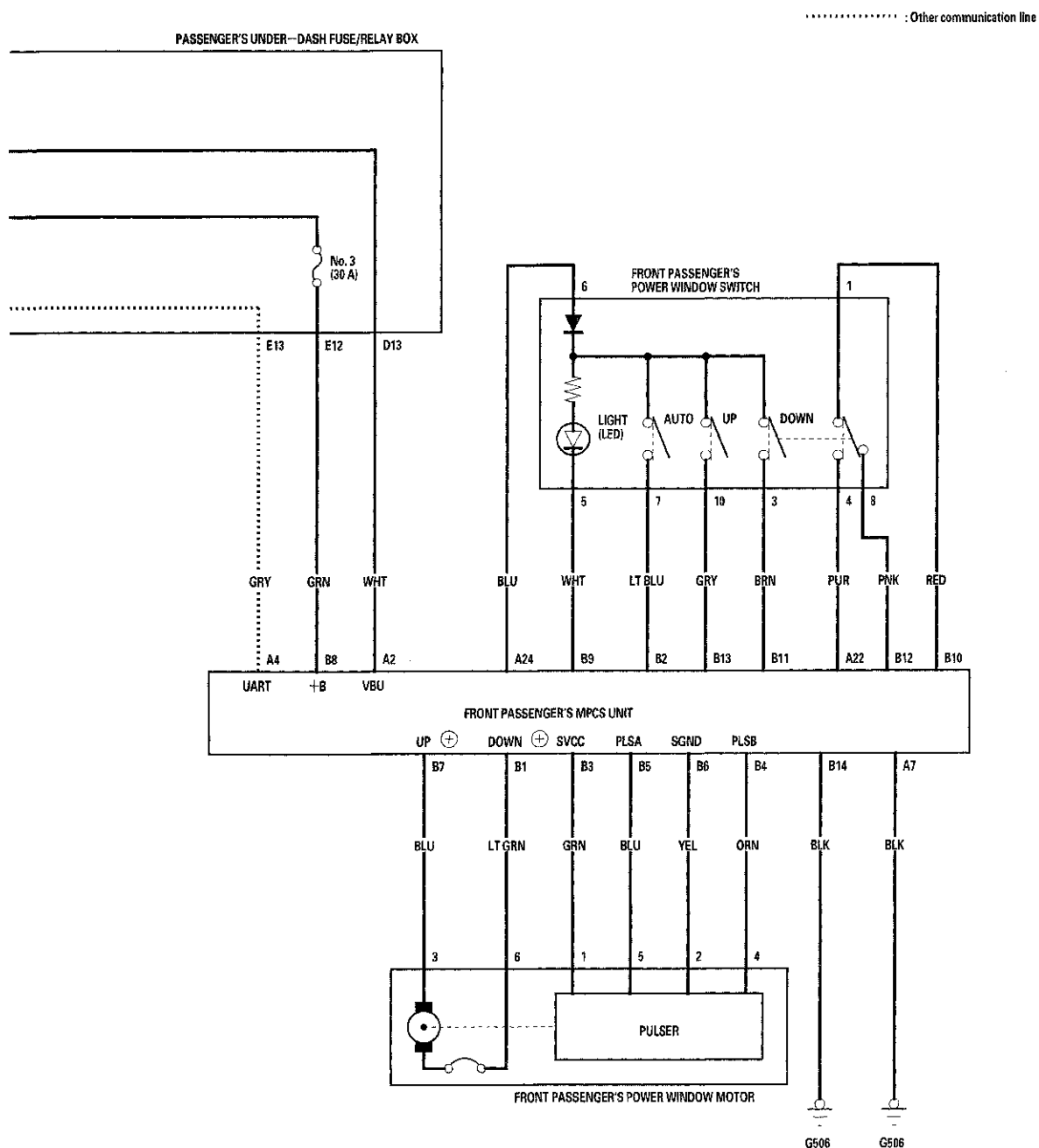


(cont'd)

Power Windows

Circuit Diagram (cont'd)





Power Windows

DTC Troubleshooting

DTC B1132: Left Rear Power Window Motor Pulse A Error

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Open and close the left rear power window by using the left rear power window switch manually.
4. Check for DTCs with the HDS.

Is DTC B1132 indicated?

YES—Go to step 5.

NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections. ■

5. Open and close the left rear power window by using the power window master switch manually.

Does the window motor operate?

YES—Go to step 6.

NO—Test the left rear power window motor (see page 22-371). If the motor tests OK, go to step 6.

6. Select POWER WINDOWS from the BODY ELECTRICAL menu and enter DATA LIST.
7. Check the DETECT/NONE information of the left rear window motor A-phase pulse signal in the DATA LIST.

Does the information indicator display DETECT while the window is moving, and display NONE when the window is stopped?

YES—Replace the left rear power window switch. ■

NO—Go to step 8.

8. Check for DTCs with the HDS.

Is DTC B1133 also indicated?

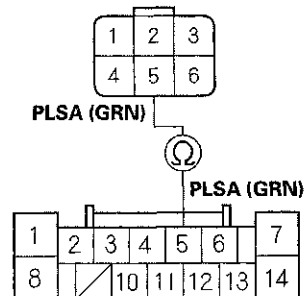
YES—Go to step 15.

NO—Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Disconnect the 14P connector from the left rear power window switch.
11. Disconnect the 6P connector from the left rear power window motor.
12. Check for continuity between left rear power window switch 14P connector terminal No. 5 and left rear power window motor 6P connector terminal No. 5.

LEFT REAR POWER WINDOW MOTOR 6P CONNECTOR

Wire side of female terminals



LEFT REAR POWER WINDOW SWITCH 14P CONNECTOR

Wire side of female terminals

Is there continuity?

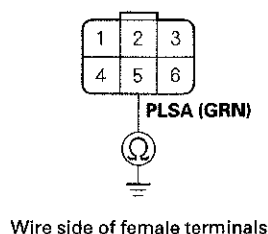
YES—Go to step 13.

NO—Repair an open in the wire. ■



13. Check for continuity between left rear power window motor 6P connector terminal No. 5 and body ground.

LEFT REAR POWER WINDOW MOTOR 6P CONNECTOR



Is there continuity?

YES—Repair a short to ground in the wire. ■

NO—Go to step 14.

14. Test the left rear power window motor (see page 22-371).

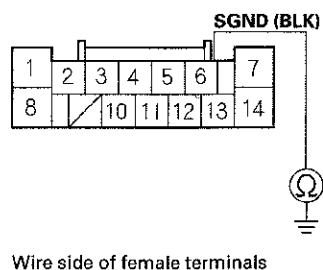
Is the motor OK?

YES—Replace the left rear power window switch. ■

NO—Replace the left rear power window motor. ■

15. Check for continuity between left rear power window switch 14P connector terminal No. 6 and body ground.

LEFT REAR POWER WINDOW SWITCH 14P CONNECTOR



Is there continuity?

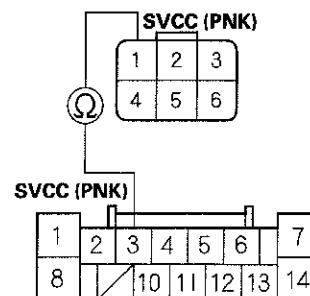
YES—Go to step 16.

NO—Repair an open in the wire or poor ground (G601). ■

16. Check for continuity between left rear power window switch 14P connector terminal No. 3 and left rear power window motor 6P connector terminal No. 1 respectively.

LEFT REAR POWER WINDOW MOTOR 6P CONNECTOR

Wire side of female terminals



LEFT REAR POWER WINDOW SWITCH 14P CONNECTOR

Wire side of female terminals

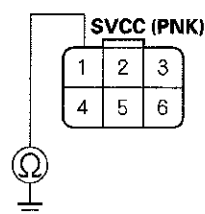
Is there continuity?

YES—Go to step 17.

NO—Repair an open in the wire. ■

17. Check for continuity between left rear power window motor 6P connector terminal No. 1 and body ground.

LEFT REAR POWER WINDOW MOTOR 6P CONNECTOR



Is there continuity?

YES—Repair a short to ground in the wire. ■

NO—Replace the left rear power window motor. ■

Power Windows

DTC Troubleshooting (cont'd)

DTC B1133: Left Rear Power Window Motor Pulse B Error

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Open and close the left rear power window by using the left rear power window switch manually.
4. Check for DTCs with the HDS.

Is DTC B1133 indicated?

YES—Go to step 5.

NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections. ■

5. Open and close the left rear power window by using the power window master switch manually.

Does the window motor operate?

YES—Go to step 6.

NO—Test the left rear power window motor (see page 22-371). If the motor tests OK, go to step 6.

6. Select POWER WINDOWS from the BODY ELECTRICAL menu and enter DATA LIST.
7. Check the DETECT/NONE information of the left rear window motor B-phase pulse signal in the DATA LIST.

Does the information indicator display DETECT while the window is moving, and display NONE when the window is stopped?

YES—Replace the left rear power window switch. ■

NO—Go to step 8.

8. Check for DTCs with the HDS.

Is DTC B1132 also indicated?

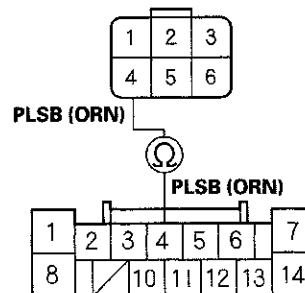
YES—Go to step 15.

NO—Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Disconnect the 14P connector from the left rear power window switch.
11. Disconnect the 6P connector from the left rear power window motor.
12. Check for continuity between left rear power window switch 14P connector terminal No. 4 and left rear power window motor 6P connector terminal No. 4.

LEFT REAR POWER WINDOW MOTOR 6P CONNECTOR

Wire side of female terminals



LEFT REAR POWER WINDOW SWITCH 14P CONNECTOR

Wire side of female terminals

Is there continuity?

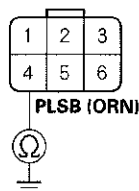
YES—Go to step 13.

NO—Repair an open in the wire. ■



13. Check for continuity between left rear power window motor 6P connector terminal No. 4 and body ground.

LEFT REAR POWER WINDOW MOTOR 6P CONNECTOR



Wire side of female terminals

Is there continuity?

YES—Repair a short to ground in the wire. ■

NO—Go to step 14.

14. Test the left rear power window motor (see page 22-371).

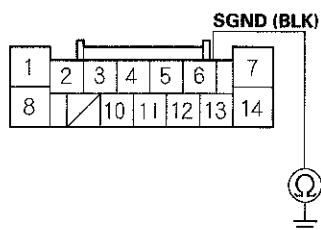
Is the motor OK?

YES—Replace the left rear power window switch. ■

NO—Replace the left rear power window motor. ■

15. Check for continuity between left rear power window switch 14P connector terminal No. 6 and body ground.

LEFT REAR POWER WINDOW SWITCH 14P CONNECTOR



Wire side of female terminals

Is there continuity?

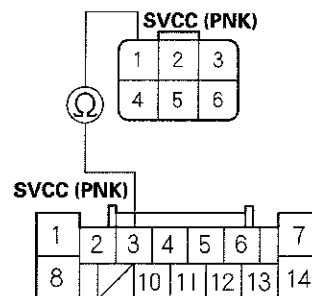
YES—Go to step 16.

NO—Repair an open in the wire or poor ground (G601). ■

16. Check for continuity between left rear power window switch 14P connector terminal No. 3 and left rear power window motor 6P connector terminal No. 1 respectively.

LEFT REAR POWER WINDOW MOTOR 6P CONNECTOR

Wire side of female terminals



LEFT REAR POWER WINDOW SWITCH 14P CONNECTOR

Wire side of female terminals

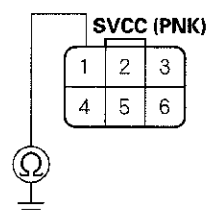
Is there continuity?

YES—Go to step 17.

NO—Repair an open in the wire. ■

17. Check for continuity between left rear power window motor 6P connector terminal No. 1 and body ground.

LEFT REAR POWER WINDOW MOTOR 6P CONNECTOR



Wire side of female terminals

Is there continuity?

YES—Repair a short to ground in the wire. ■

NO—Replace the left rear power window motor. ■

Power Windows

DTC Troubleshooting (cont'd)

DTC B1134: Right Rear Power Window Motor Pulse A Error

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Open and close the right rear power window by using the right rear power window switch manually.
4. Check for DTCs with the HDS.

Is DTC B1134 indicated?

YES—Go to step 5.

NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections. ■

5. Open and close the right rear power window by using the power window master switch manually.

Does the window motor operate?

YES—Go to step 6.

NO—Test the right rear power window motor (see page 22-371). If the motor tests OK, go to step 6.

6. Select POWER WINDOWS from the BODY ELECTRICAL menu and enter DATA LIST.
7. Check the DETECT/NONE information of the right rear window motor A-phase pulse signal in the DATA LIST.

Does the information indicator display DETECT while the window is moving, and display NONE when the window is stopped?

YES—Replace the right rear power window switch. ■

NO—Go to step 8.

8. Check for DTCs with the HDS.

Is DTC B1135 also indicated?

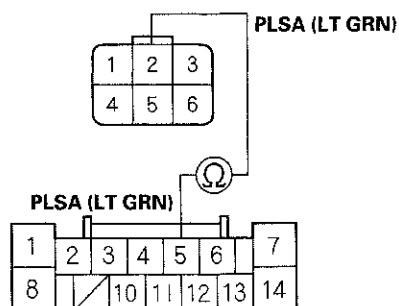
YES—Go to step 15.

NO—Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Disconnect the 14P connector from the right rear power window switch.
11. Disconnect the 6P connector from the right rear power window motor.
12. Check for continuity between right rear power window switch 14P connector terminal No. 5 and right rear power window motor 6P connector terminal No. 2.

RIGHT REAR POWER WINDOW MOTOR 6P CONNECTOR

Wire side of female terminals



RIGHT REAR POWER WINDOW SWITCH 14P CONNECTOR

Wire side of female terminals

Is there continuity?

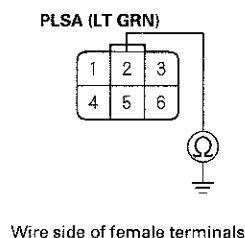
YES—Go to step 13.

NO—Repair an open in the wire. ■



13. Check for continuity between right rear power window motor 6P connector terminal No. 2 and body ground.

RIGHT REAR POWER WINDOW MOTOR 6P CONNECTOR



Is there continuity?

YES—Repair short to ground in the wire. ■

NO—Go to step 14.

14. Test the right rear power window motor (see page 22-371).

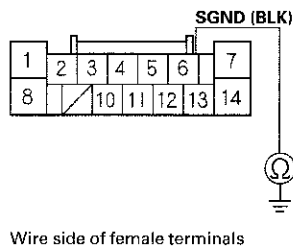
Is the motor OK?

YES—Replace the right rear power window switch. ■

NO—Replace the right rear power window motor. ■

15. Check for continuity between right rear power window switch 14P connector terminal No. 6 and body ground.

RIGHT REAR POWER WINDOW SWITCH 14P CONNECTOR



Is there continuity?

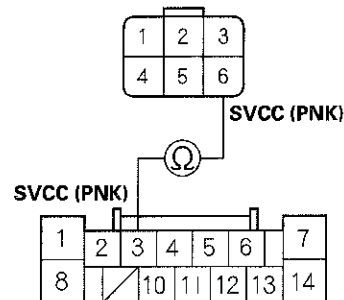
YES—Go to step 16.

NO—Repair an open in the wire or poor ground (G651). ■

16. Check for continuity between right rear power window switch 14P connector terminal No. 3 and right rear power window motor 6P connector terminal No. 6 respectively.

RIGHT REAR POWER WINDOW MOTOR 6P CONNECTOR

Wire side of female terminals



RIGHT REAR POWER WINDOW SWITCH 14P CONNECTOR

Wire side of female terminals

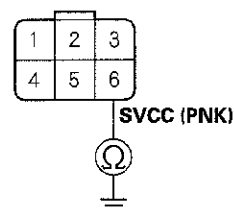
Is there continuity?

YES—Go to step 17.

NO—Repair an open in the wire. ■

17. Check for continuity between right rear power window motor 6P connector terminal No. 6 and body ground.

RIGHT REAR POWER WINDOW MOTOR 6P CONNECTOR



Wire side of female terminals

Is there continuity?

YES—Repair a short to ground in the wire. ■

NO—Replace the right rear power window motor. ■

Power Windows

DTC Troubleshooting (cont'd)

DTC B1135: Right Rear Power Window Motor Pulse B Error

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Open and close the right rear power window by using the right rear power window switch manually.
4. Check for DTCs with the HDS.

Is DTC B1135 indicated?

YES—Go to step 5.

NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections. ■

5. Open and close the right rear power window by using the power window master switch manually.

Does the window motor operate?

YES—Go to step 6.

NO—Test the right rear power window motor (see page 22-371). If the motor tests OK, go to step 6.

6. Select POWER WINDOWS from the BODY ELECTRICAL menu and enter DATA LIST.
7. Check the DETECT/NONE information of the right rear window motor B-phase pulse signal in the DATA LIST.

Does the information indicator display DETECT while the window is moving, and display NONE when the window is stopped?

YES—Replace the right rear power window switch. ■

NO—Go to step 8.

8. Check for DTCs with the HDS.

Is DTC B1134 also indicated?

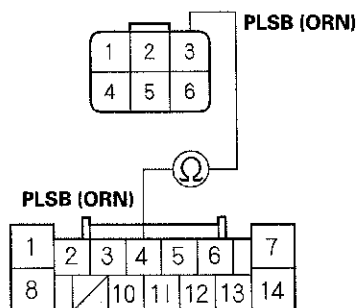
YES—Go to step 15.

NO—Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Disconnect the 14P connector from the right rear power window switch.
11. Disconnect the 6P connector from the right rear power window motor.
12. Check for continuity between right rear power window switch 14P connector terminal No. 4 and right rear power window motor 6P connector terminal No. 3.

RIGHT REAR POWER WINDOW MOTOR 6P CONNECTOR

Wire side of female terminals



RIGHT REAR POWER WINDOW SWITCH 14P CONNECTOR

Wire side of female terminals

Is there continuity?

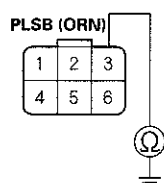
YES—Go to step 13.

NO—Repair an open in the wire. ■



13. Check for continuity between right rear power window motor 6P connector terminal No. 3 and body ground.

RIGHT REAR POWER WINDOW MOTOR 6P CONNECTOR



Wire side of female terminals

Is there continuity?

YES—Repair a short to ground in the wire. ■

NO—Go to step 14.

14. Test the right rear power window motor (see page 22-371).

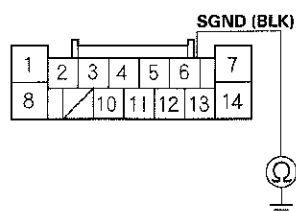
Is the motor OK?

YES—Replace the right rear power window switch. ■

NO—Replace the right rear power window motor. ■

15. Check for continuity between right rear power window switch 14P connector terminal No. 6 and body ground.

RIGHT REAR POWER WINDOW SWITCH 14P CONNECTOR



Wire side of female terminals

Is there continuity?

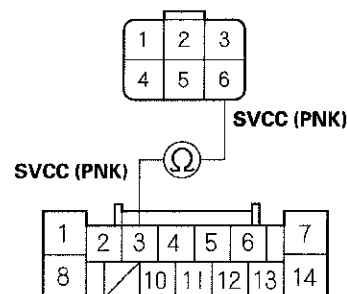
YES—Go to step 16.

NO—Repair an open in the wire or poor ground (G651). ■

16. Check for continuity between right rear power window switch 14P connector terminal No. 3 and right rear power window motor 6P connector terminal No. 6 respectively.

RIGHT REAR POWER WINDOW MOTOR 6P CONNECTOR

Wire side of female terminals



RIGHT REAR POWER WINDOW SWITCH 14P CONNECTOR

Wire side of female terminals

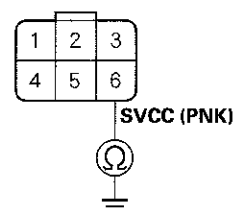
Is there continuity?

YES—Go to step 17.

NO—Repair an open in the wire. ■

17. Check for continuity between the right rear power window motor 6P connector terminal No. 6 and body ground.

RIGHT REAR POWER WINDOW MOTOR 6P CONNECTOR



Wire side of female terminals

Is there continuity?

YES—Repair a short to ground in the wire. ■

NO—Replace the right rear power window motor. ■

Power Windows

DTC Troubleshooting (cont'd)

DTC B1136: Right Rear Power Window Switch Internal Error

DTC B1148: Left Rear Power Window Switch Internal Error

NOTE:

- If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).
- Information marked with an asterisk (*) applies to the right rear power window.

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Check for DTCs with the HDS.

Is DTC B1136 or B1148 indicated?*

YES—Replace the left (right)* rear power window switch. ■

NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections. ■

DTC B1147: Left Rear Power Window Position Information Error

DTC B1149: Right Rear Power Window Position Information Error

NOTE:

- If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).
- Information marked with an asterisk (*) applies to the right rear power window.

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Open and close the left (right)* rear power window by using the left (right)* rear power window switch manually.
4. Check for DTCs with the HDS.

Is DTC B1132 or B1133 (B1133 or B1134) also indicated?*

YES—Troubleshoot the indicated DTC(s) first. ■

NO—Go to step 5.

5. Reset the power window control unit (see page 22-331).
6. Clear the DTCs with the HDS.
7. Turn the ignition switch to LOCK (0) and then back to ON (II).
8. Open and close the left (right)* rear power window by using the left (right)* rear power window switch manually.
9. Check for DTCs with the HDS.

Is DTC B1147 (B1149) indicated?*

YES—Go to step 10.

NO—The system is OK at this time. ■



10. Turn the ignition switch to LOCK (0).
11. Substitute a known-good left (right)* rear power window switch.
12. Clear the DTCs with the HDS.
13. Turn the ignition switch to LOCK (0) and then back to ON (II).
14. Open and close the left (right)* rear power window by using the left (right)* rear power window switch manually.
15. Check for DTCs with the HDS.

Is DTC B1147 (B1149) indicated?*

YES—Replace the left (right)* rear power window motor. ■

NO—Replace the left (right)* rear power window switch. ■

Power Windows

DTC Troubleshooting (cont'd)

DTC B2175: Driver's Power Window Motor Pulse A Error

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Open and close the driver's power window by using the power window master switch manually.
4. Check for DTCs with the HDS.

Is DTC B2175 indicated?

YES—Go to step 5.

NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections. ■

5. Open and close the driver's power window by using the power window master switch manually.

Does the window motor operate?

YES—Go to step 6.

NO—Test the driver's power window motor (see page 22-371). If the motor tests OK, go to step 6.

6. Select POWER WINDOWS from the BODY ELECTRICAL system select menu and enter DATA LIST.
7. Check the DETECT/NONE information of the Driver's window motor A-phase pulse signal in the DATA LIST.

Does the information indicator display DETECT while the window is moving, and display NONE when the window is stopped?

YES—Replace the driver's MPCS unit. ■

NO—Go to step 8.

8. Check for DTCs with the HDS.

Is DTC B2176 also indicated?

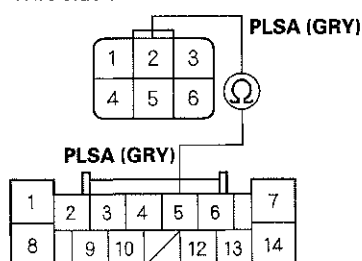
YES—Go to step 15.

NO—Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Disconnect the 14P connector from the driver's MPCS unit.
11. Disconnect the 6P connector from the driver's power window motor.
12. Check for continuity between driver's MPCS unit connector B (14P) terminal No. 5 and driver's power window motor 6P connector terminal No. 2.

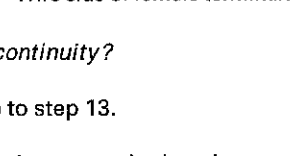
DRIVER'S POWER WINDOW MOTOR 6P CONNECTOR

Wire side of female terminals



DRIVER'S MPCS UNIT CONNECTOR B (14P)

Wire side of female terminals



Is there continuity?

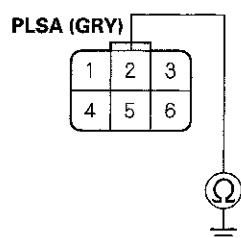
YES—Go to step 13.

NO—Repair an open in the wire. ■



13. Check for continuity between driver's power window motor 6P connector terminal No. 2 and body ground.

DRIVER'S POWER WINDOW MOTOR 6P CONNECTOR



Wire side of female terminals

Is there continuity?

YES—Repair a short to ground in the wire. ■

NO—Go to step 14.

14. Test the driver's power window motor (see page 22-371).

Is the motor OK?

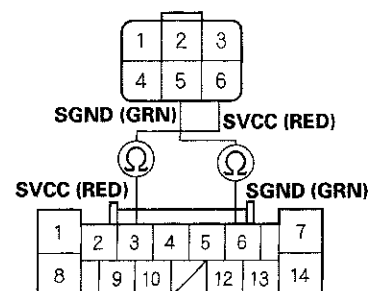
YES—Replace the driver's MPCs unit. ■

NO—Replace the driver's power window motor. ■

15. Check for continuity between driver's MPCs unit connector B (14P) terminals No. 3 and No. 6 and the driver's power window motor 6P connector terminals No. 5 and No. 6 respectively.

DRIVER'S POWER WINDOW MOTOR 6P CONNECTOR

Wire side of female terminals



DRIVER'S MPCs UNIT CONNECTOR B (14P)

Wire side of female terminals

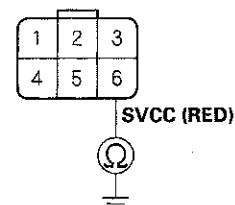
Is there continuity?

YES—Go to step 16.

NO—Repair an open in the wire. ■

16. Check for continuity between driver's power window motor 6P connector terminal No. 6 and body ground.

DRIVER'S POWER WINDOW MOTOR 6P CONNECTOR



Wire side of female terminals

Is there continuity?

YES—Repair a short to ground in the wire. ■

NO—Replace the driver's power window motor. ■

Power Windows

DTC Troubleshooting (cont'd)

DTC B2176: Driver's Power Window Motor Pulse B Error

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Open and close the driver's power window by using the power window master switch manually.
4. Check for DTCs with the HDS.

Is DTC B2176 indicated?

YES—Go to step 5.

NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections. ■

5. Open and close the driver's power window by using the power window master switch manually.

Does the window motor operate?

YES—Go to step 6.

NO—Test the driver's power window motor (see page 22-371). If the motor tests OK, go to step 6.

6. Select POWER WINDOWS from the BODY ELECTRICAL system select menu and enter DATA LIST.
7. Check the DETECT/NONE information of the Driver's window motor B-phase pulse signal in the DATA LIST.

Does the information indicator display DETECT while the window is moving, and display NONE when the window is stopped?

YES—Replace the driver's MPCS unit. ■

NO—Go to step 8.

8. Check for DTCs with the HDS.

Is DTC B2175 also indicated?

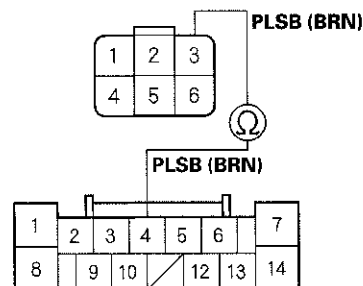
YES—Go to step 15.

NO—Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Disconnect the 14P connector from the driver's MPCS unit.
11. Disconnect the 6P connector from the driver's power window motor.
12. Check for continuity between driver's MPCS unit connector B (14P) terminal No. 4 and driver's power window motor 6P connector terminal No. 3.

DRIVER'S POWER WINDOW MOTOR 6P CONNECTOR

Wire side of female terminals



DRIVER'S MPCS UNIT CONNECTOR B (14P)

Wire side of female terminals

Is there continuity?

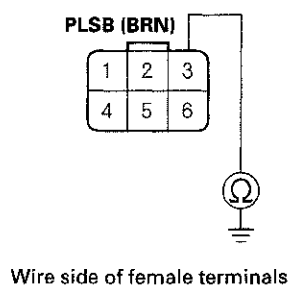
YES—Go to step 13.

NO—Repair an open in the wire. ■



13. Check for continuity between driver's power window motor 6P connector terminal No. 3 and body ground.

DRIVER'S POWER WINDOW MOTOR 6P CONNECTOR



Is there continuity?

YES—Repair a short to ground in the wire. ■

NO—Go to step 14.

14. Test the driver's power window motor (see page 22-371).

Is the motor OK?

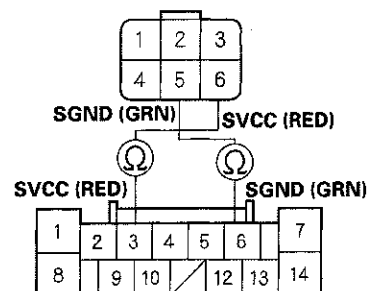
YES—Replace the driver's MPCS unit. ■

NO—Replace the driver's power window motor. ■

15. Check for continuity between driver's MPCS unit connector B (14P) terminals No. 3 and No. 6 and the driver's power window motor 6P connector terminals No. 5 and No. 6 respectively.

DRIVER'S POWER WINDOW MOTOR 6P CONNECTOR

Wire side of female terminals



DRIVER'S MPCS UNIT CONNECTOR B (14P)

Wire side of female terminals

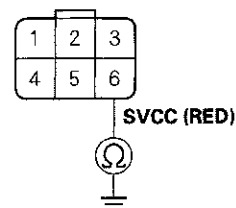
Is there continuity?

YES—Go to step 16.

NO—Repair an open in the wire. ■

16. Check for continuity between driver's power window motor 6P connector terminal No. 6 and body ground.

DRIVER'S POWER WINDOW MOTOR 6P CONNECTOR



Wire side of female terminals

Is there continuity?

YES—Repair a short to ground in the wire. ■

NO—Replace the driver's power window motor. ■

Power Windows

DTC Troubleshooting (cont'd)

DTC B2177: Front Passenger's Power Window Motor Pulse A Error

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Open and close the front passenger's power window by using the front passenger's power window switch manually.
4. Check for DTCs with the HDS.

Is DTC B2177 indicated?

YES—Go to step 5.

NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections. ■

5. Open and close the front passenger's power window by using the power window master switch manually.

Does the window motor operate?

YES—Go to step 6.

NO—Test the front passenger's power window motor (see page 22-371). If the motor tests OK, go to step 6.

6. Select POWER WINDOWS from the BODY ELECTRICAL system select menu and enter DATA LIST.
7. Check the DETECT/NONE information of the Front passenger's window motor A-phase pulse signal in the DATA LIST.

Does the information indicator display DETECT while the window is moving, and display NONE when the window is stopped?

YES—Replace the front passenger's MPCS unit. ■

NO—Go to step 8.

8. Check for DTCs with the HDS.

Is DTC B2178 also indicated?

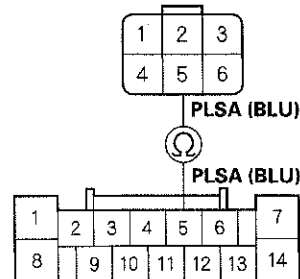
YES—Go to step 15.

NO—Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Disconnect front passenger's MPCS unit connector B (14P).
11. Disconnect the 6P connector from the front passenger's power window motor.
12. Check for continuity between front passenger's MPCS unit connector B (14P) terminal No. 5 and front passenger's power window motor 6P connector terminal No. 5.

FRONT PASSENGER'S POWER WINDOW MOTOR 6P CONNECTOR

Wire side of female terminals



FRONT PASSENGER'S MPCS UNIT CONNECTOR B (14P)

Wire side of female terminals

Is there continuity?

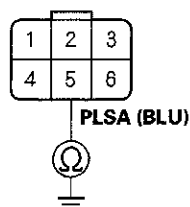
YES—Go to step 13.

NO—Repair an open in the wire. ■



13. Check for continuity between front passenger's power window motor 6P connector terminal No. 5 and body ground.

FRONT PASSENGER'S POWER WINDOW MOTOR 6P CONNECTOR



Wire side of female terminals

Is there continuity?

YES—Repair a short to ground in the wire. ■

NO—Go to step 14.

14. Test the front passenger's power window motor (see page 22-371).

Is the motor OK?

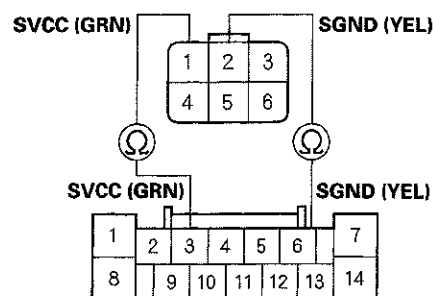
YES—Replace the front passenger's MPCS unit. ■

NO—Replace the front passenger's power window motor. ■

15. Check for continuity between front passenger's MPCS unit connector B (14P) terminals No. 3 and No. 6 and the front passenger's power window motor 6P connector terminals No. 1 and No. 2 respectively.

FRONT PASSENGER'S POWER WINDOW MOTOR 6P CONNECTOR

Wire side of female terminals



FRONT PASSENGER'S MPCS UNIT CONNECTOR B (14P)

Wire side of female terminals

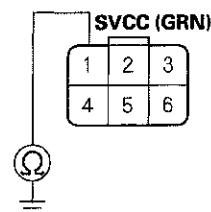
Is there continuity?

YES—Go to step 16.

NO—Repair an open in the wire. ■

16. Check for continuity between front passenger's power window motor 6P connector terminal No. 1 and body ground.

FRONT PASSENGER'S POWER WINDOW MOTOR 6P CONNECTOR



Wire side of female terminals

Is there continuity?

YES—Repair a short to ground in the wire. ■

NO—Replace the front passenger's power window motor. ■

Power Windows

DTC Troubleshooting (cont'd)

DTC B2178: Front Passenger's Power Window Motor Pulse B Error

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Open and close the front passenger's power window by using the front passenger's power window switch manually.
4. Check for DTCs with the HDS.

Is DTC B2178 indicated?

YES—Go to step 5.

NO—Intermittent failure, the system is OK at this time. Check for loose or poor connections. ■

5. Open and close the front passenger's power window by using the power window master switch manually.

Does the window motor operate?

YES—Go to step 6.

NO—Test the front passenger's power window motor (see page 22-371). If the motor tests OK, go to step 6.

6. Select POWER WINDOWS from the BODY ELECTRICAL system select menu and enter DATA LIST.
7. Check the DETECT/NONE information of the Front passenger's window motor B-phase pulse signal in the DATA LIST.

Does the information indicator display DETECT while the window is moving, and display NONE when the window is stopped?

YES—Replace the front passenger's MPCS unit. ■

NO—Go to step 8.

8. Check for DTCs with the HDS.

Is DTC B2177 also indicated?

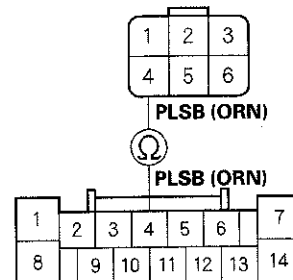
YES—Go to step 15.

NO—Go to step 9.

9. Turn the ignition switch to LOCK (0).
10. Disconnect front passenger's MPCS unit connector B (14P).
11. Disconnect the 6P connector from the front passenger's power window motor.
12. Check for continuity between front passenger's MPCS unit connector B (14P) terminal No. 4 and front passenger's power window motor 6P connector terminal No. 4.

FRONT PASSENGER'S POWER WINDOW MOTOR 6P CONNECTOR

Wire side of female terminals



FRONT PASSENGER'S MPCS UNIT CONNECTOR B (14P)

Wire side of female terminals

Is there continuity?

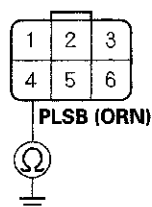
YES—Go to step 13.

NO—Repair an open in the wire. ■



13. Check for continuity between front passenger's power window motor 6P connector terminal No. 4 and body ground.

FRONT PASSENGER'S POWER WINDOW MOTOR 6P CONNECTOR



Wire side of female terminals

Is there continuity?

YES—Repair a short to ground in the wire. ■

NO—Go to step 14.

14. Test the front passenger's power window motor (see page 22-371).

Is the motor OK?

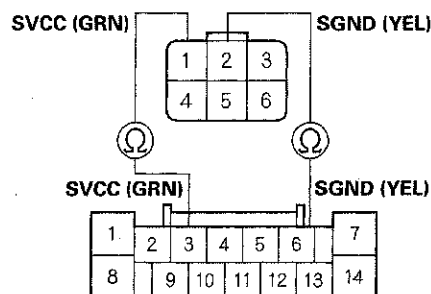
YES—Replace the front passenger's MPCS unit. ■

NO—Replace the front passenger's power window motor. ■

15. Check for continuity between front passenger's MPCS unit connector B (14P) terminals No. 3 and No. 6 and the front passenger's power window motor 6P connector terminals No. 1 and No. 2 respectively.

FRONT PASSENGER'S POWER WINDOW MOTOR 6P CONNECTOR

Wire side of female terminals



FRONT PASSENGER'S MPCS UNIT CONNECTOR B (14P)

Wire side of female terminals

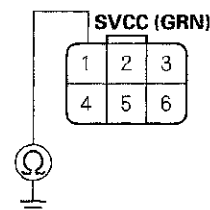
Is there continuity?

YES—Go to step 16.

NO—Repair an open in the wire. ■

16. Check for continuity between front passenger's power window motor 6P connector terminal No. 1 and body ground.

FRONT PASSENGER'S POWER WINDOW MOTOR 6P CONNECTOR



Wire side of female terminals

Is there continuity?

YES—Repair a short to ground in the wire. ■

NO—Replace the front passenger's power window motor. ■

Power Windows

DTC Troubleshooting (cont'd)

DTC B2187: Communication Line (UART Line) Circuit Short

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Operate the front passenger's, left rear and right rear power window switches.
4. Check for DTCs with the HDS.

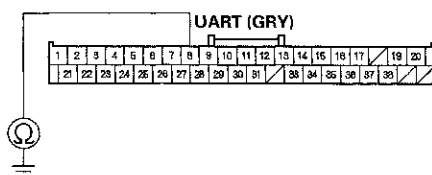
Is DTC B2187 indicated?

YES—Go to step 5.

NO—Intermittent failure, the UART line is OK at this time. ■

5. Turn the ignition switch to LOCK (0).
6. Disconnect these connectors:
 - Driver's MPCS unit connector A (40P)
 - Power window master switch 6P connector
 - Front passenger's MPCS unit connector A (28P)
 - Left rear power window switch 14P connector
 - Right rear power window switch 14P connector
 - Moonroof motor/control unit 8P connector
7. Check for continuity between driver's MPCS unit connector A (40P) terminal No. 8 and body ground.

DRIVER'S MPCS UNIT CONNECTOR A (40P)



Wire side of female terminals

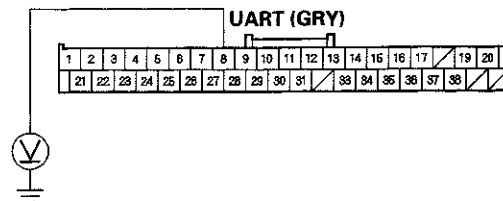
Is there continuity?

YES—Repair a short to ground in the wire. ■

NO—Go to step 8.

8. Turn the ignition switch to ON (II).
9. Measure the voltage between driver's MPCS unit connector A (40P) terminal No. 8 and body ground.

DRIVER'S MPCS UNIT CONNECTOR A (40P)



Wire side of female terminals

Is there voltage?

YES—Repair a short to power in the wire. ■

NO—Go to step 10.

10. Clear the DTCs with the HDS.
 11. Turn the ignition switch to LOCK (0) and then back to ON (II).
 12. Wait for at least 6 seconds.
 13. Check for DTCs with the HDS.
- Is DTC B2187 indicated?*

YES—Replace the driver's MPCS unit. ■

NO—Go to step 14.

14. Reconnect the power window master switch 6P connector.
15. Clear the DTCs with the HDS.
16. Turn the ignition switch to LOCK (0) and then back to ON (II).
17. Operate each switch of the power window master switch.



18. Check for DTCs with the HDS.

Is DTC B2187 indicated?

YES—Replace the power window master switch. ■

NO—Go to step 19.

19. Reconnect front passenger's MPCS unit connector A (28P).

20. Clear the DTCs with the HDS.

21. Turn the ignition switch to LOCK (0) and then back to ON (II).

22. Operate the front passenger's power window switch in each direction.

23. Check for DTCs with the HDS.

Is DTC B2187 indicated?

YES—Replace the front passenger's MPCS unit. ■

NO—Go to step 24.

24. Reconnect the right rear power window switch 14P connector.

25. Clear the DTCs with the HDS.

26. Turn the ignition switch to LOCK (0) and then back to ON (II).

27. Operate the right rear power window switch in each direction.

28. Check for DTCs with the HDS.

Is DTC B2187 indicated?

YES—Replace the right rear power window switch. ■

NO—Go to step 29.

29. Reconnect the left rear power window switch 14P connector.

30. Clear the DTCs with the HDS.

31. Turn the ignition switch to LOCK (0) and then back to ON (II).

32. Operate the left rear power window switch in each direction.

33. Check for DTCs with the HDS.

Is DTC B2187 indicated?

YES—Replace the left rear power window switch. ■

NO—Go to step 34.

34. Reconnect the moonroof motor/control unit 8P connector.

35. Clear the DTCs with the HDS.

36. Turn the ignition switch to LOCK (0) and then back to ON (II).

37. Open and close the moonroof with the moonroof switch.

38. Check for DTCs with the HDS.

Is DTC B2187 indicated?

YES—Replace the moonroof motor/control unit. ■

NO—Replace the driver's MPCS unit. ■

Power Windows

DTC Troubleshooting (cont'd)

DTC B2188: Communication Line (UART Line) Circuit Open

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Open and close the each window by operating the front passenger's, left rear, and right rear power window switches.
4. Check for DTCs with the HDS.

Is DTC B2188 indicated, and does the any window fail to open or close?

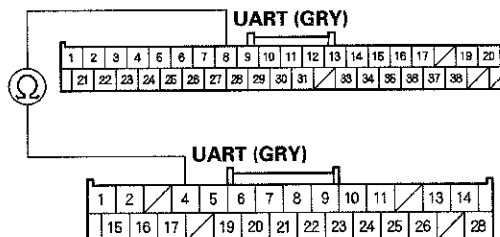
YES—Go to step 5.

NO—Intermittent failure, the UART line is OK at this time. ■

5. Turn the ignition switch to LOCK (0).
6. Disconnect these connectors:
 - Driver's MPCS unit connector A (40P)
 - Power window master switch 6P connector
 - Front passenger's MPCS unit connector A (28P)
 - Left rear power window switch 14P connector
 - Right rear power window switch 14P connector

7. Check for continuity between driver's MPCS unit connector A (40P) terminal No. 8 and front passenger's MPCS unit connector A (28P) terminal No. 4.

DRIVER'S MPCS UNIT CONNECTOR A (40P)
Wire side of female terminals



FRONT PASSENGER'S MPCS UNIT CONNECTOR A (28P)
Wire side of female terminals

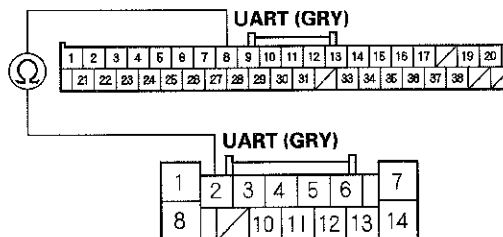
Is there continuity?

YES—Go to step 8.

NO—Repair an open in the wire, or replace the faulty passenger's under-dash fuse/relay box. ■

8. Check for continuity between driver's MPCS unit connector A (40P) terminal No. 8 and right rear power window switch 14P connector terminal No. 2.

DRIVER'S MPCS UNIT CONNECTOR A (40P)
Wire side of female terminals



RIGHT REAR POWER WINDOW SWITCH 14P CONNECTOR
Wire side of female terminals

Is there continuity?

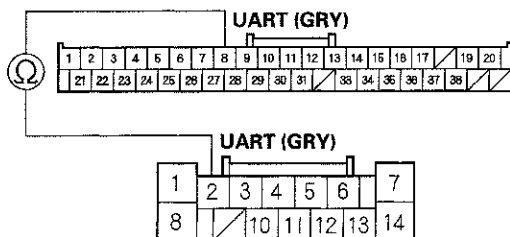
YES—Go to step 9.

NO—Repair an open in the wire, or replace the faulty passenger's under-dash fuse/relay box. ■



9. Check for continuity between driver's MPCS unit connector A (40P) terminal No. 8 and left rear power window switch 14P connector terminal No. 2.

DRIVER'S MPCS UNIT CONNECTOR A (40P)
Wire side of female terminals



LEFT REAR POWER WINDOW SWITCH 14P CONNECTOR
Wire side of female terminals

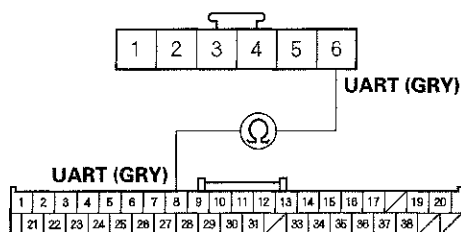
Is there continuity?

YES—Go to step 10.

NO—Repair an open in the wire. ■

10. Check for continuity between driver's MPCS unit connector A (40P) terminal No. 8 and power window master switch 6P connector terminal No. 6.

POWER WINDOW MASTER SWITCH 6P CONNECTOR
Wire side of female terminals



DRIVER'S MPCS UNIT CONNECTOR A (40P)
Wire side of female terminals

Is there continuity?

YES—Go to step 11.

NO—Repair an open in the wire. ■

11. Substitute a known-good power window master switch, and do the power window control unit learning procedure (see page 22-331).

12. Connect these connectors:

- Driver's MPCS unit connector A (40P)
- Front passenger's MPCS unit connector A (28P)
- Left rear power window switch 14P connector
- Right rear power window switch 14P connector

13. Turn the ignition switch to ON (II).

14. Clear the DTCs with the HDS.

15. Open and close the each window by operating the power window master switch.

16. Check for DTCs with the HDS.

Is DTC B2188 indicated?

YES—Go to step 17.

NO—The original power window master switch is faulty; replace it. ■

17. Turn the ignition switch to LOCK (0).

18. Substitute a known-good front passenger's MPCS unit.

19. Turn the ignition switch to ON (II).

20. Clear the DTCs with the HDS.

21. Open and close the front passenger's power window by operating the front passenger's power window switch.

22. Check for DTCs with the HDS.

Is DTC B2188 indicated?

YES—Go to step 23.

NO—The original front passenger's MPCS unit is faulty; replace it. ■

(cont'd)

Power Windows

DTC Troubleshooting (cont'd)

23. Turn the ignition switch to LOCK (0).
24. Substitute a known-good left rear power window switch.
25. Turn the ignition switch to ON (II).
26. Clear the DTCs with the HDS.
27. Open and close the left rear power window by operating the left rear power window switch.
28. Check for DTCs with the HDS.

Is DTC B2188 indicated?

YES—Go to step 29.

NO—The original left rear power window switch is faulty; replace it. ■

29. Turn the ignition switch to LOCK (0).
30. Substitute a known-good right rear power window switch.
31. Turn the ignition switch to ON (II).
32. Clear the DTCs with the HDS.
33. Open and close the right rear power window by operating the right rear power window switch.
34. Check for DTCs with the HDS.

Is DTC B2188 indicated?

YES—Replace the driver's MPCS unit. ■

NO—The original right rear power window power switch is faulty; replace it. ■

DTC B2189: Driver's Power Window Position Detect Circuit Error

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Open and close the driver's power window by using the power window master switch manually.
4. Check for DTCs with the HDS.

Is DTC B2175 or B2176 also indicated?

YES—Troubleshoot the indicated DTC(s) first. ■

NO—Go to step 5.

5. Reset the power window control unit (see page 22-331).
6. Clear the DTCs with the HDS.
7. Turn the ignition switch to LOCK (0) and then back to ON (II).
8. Open and close the driver's power window by using the power window master switch manually.
9. Check for DTCs with the HDS.

Is DTC B2189 indicated?

YES—Go to step 10.

NO—The system is OK at this time. ■



10. Turn the ignition switch to LOCK (0).
11. Substitute a known-good driver's MPCS unit.
12. Clear the DTCs with the HDS.
13. Turn the ignition switch to LOCK (0) and then back to ON (II).
14. Open and close the driver's power window by using the power window master switch manually.
15. Check for DTCs with the HDS.

Is DTC B2189 indicated?

YES—Replace the driver's power window motor. ■

NO—Replace the driver's MPCS unit. ■

DTC B2190: Front Passenger's Power Window Position Detect Circuit Error

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Open and close the front passenger's window by using the front passenger's power window switch manually.

4. Check for DTCs with the HDS.

Is DTC B2177 or B2178 also indicated?

YES—Troubleshoot the indicated DTC(s) first. ■

NO—Go to step 5.

5. Reset the power window control unit (see page 22-331).
6. Clear the DTCs with the HDS.
7. Turn the ignition switch to LOCK (0) and then back to ON (II).
8. Open and close the front passenger's power window by using the front passenger's power window switch manually.
9. Check for DTCs with the HDS.

Is DTC B2190 indicated?

YES—Go to step 10.

NO—The system is OK at this time. ■

(cont'd)

Power Windows

DTC Troubleshooting (cont'd)

10. Turn the ignition switch to LOCK (0).
11. Substitute a known-good passenger's MPCS unit.
12. Clear the DTCs with the HDS.
13. Turn the ignition switch to LOCK (0) and then back to ON (II).
14. Open and close the front passenger's power window by using the front passenger's power window switch manually.
15. Check for DTCs with the HDS.

Is DTC B2190 indicated?

YES—Replace the front passenger's window motor. ■

NO—Replace the passenger's MPCS unit. ■

DTC B2191: Front Passenger's MPCS Unit Internal (EEPROM) Error

NOTE: If you are troubleshooting multiple DTCs, be sure to follow the instructions in B-CAN System Diagnosis Test Mode A (see page 22-131).

1. Clear the DTCs with the HDS.
2. Turn the ignition switch to LOCK (0) and then back to ON (II).
3. Check for DTCs with the HDS.

Is DTC B2191 indicated?

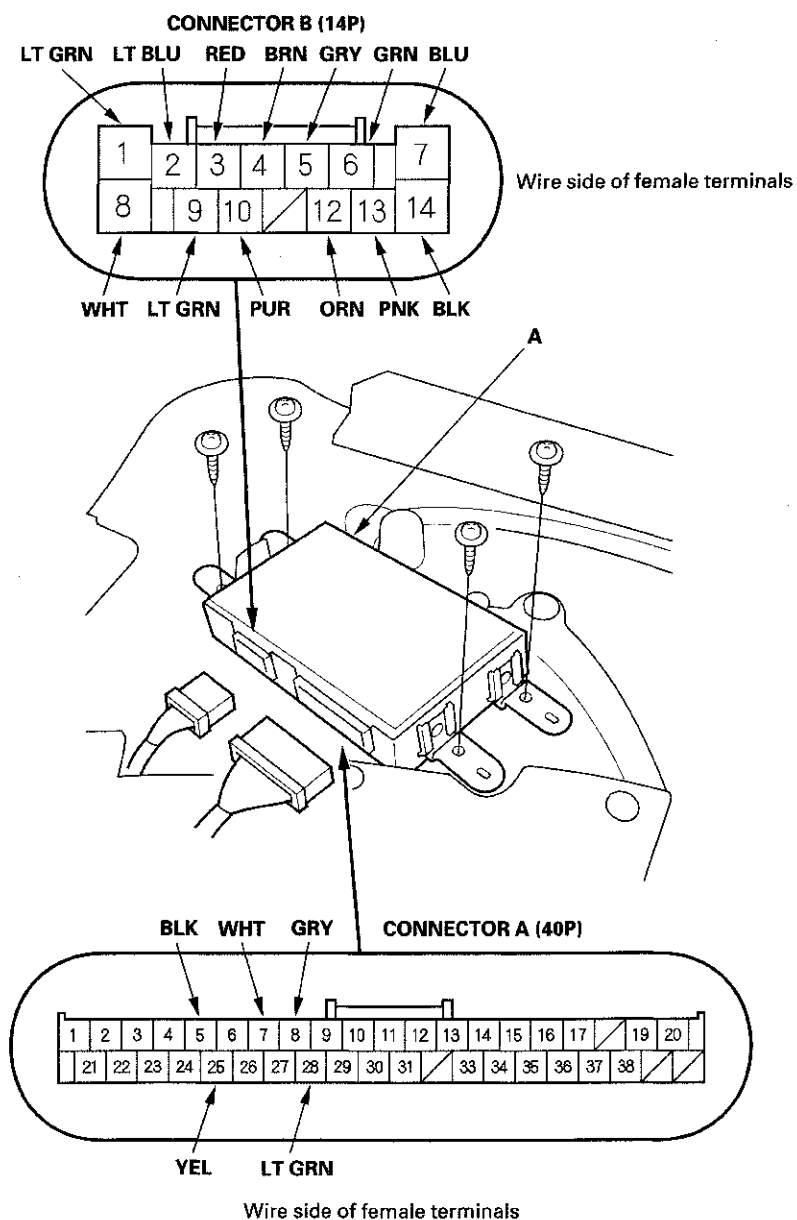
YES—Replace the front passenger's MPCS unit. ■

NO—Intermittent failure, the system is OK at this time. ■



Driver's MPCS Unit Input Test

1. Turn the ignition switch to LOCK (0).
2. Remove the driver's door panel (see page 20-9).
3. Disconnect driver's MPCS unit (A) connectors A (40P) and B (14P).



4. Inspect the connector and socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
 - If the terminals look OK, go to step 5.

(cont'd)

Power Windows

Driver's MPCS Unit Input Test (cont'd)

5. With the connectors still disconnected, do these input tests at the following connectors.

- If any test indicates a problem, find and correct the cause, then recheck the system.
- If all the input tests prove OK, go to step 6.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
A8	GRY	Driver's under-dash fuse/relay box connector J (21P) and power window master switch 6P connector disconnected	Check for continuity between terminal A8 and driver's under-dash fuse/relay box connector J (21P) terminal No. 1, and terminal A8 and power window master switch 6P connector terminal No. 6: There should be continuity.	An open in the wire
			Check for continuity to ground: There should be no continuity.	A short to ground in the wire
B10	PUR	Driver's power window switch in DOWN position	Check for continuity between the terminals: There should be no continuity.	• Faulty power window master switch • A short to ground in the wire
B12	ORN			
B10	PUR	Driver's power window switch released	Check for continuity between the terminals: There should be continuity.	• Faulty power window master switch • An open in the wire
B12	ORN			
B10	PUR	Driver's power window switch in DOWN position	Check for continuity between the terminals: There should be continuity.	• Faulty power window master switch • An open in the wire
B13	PNK			
B10	PUR	Driver's power window switch released	Check for continuity between the terminals: There should be no continuity.	• Faulty power window master switch • A short to ground in the wire
B13	PNK			
B9	LT GRN	Driver's power window switch in UP position	Check for continuity between the terminals: There should be continuity.	• Faulty power window master switch • An open in the wire
B2	LT BLU			
B9	LT GRN	Driver's power window switch released	Check for continuity between the terminals: There should be no continuity.	• Faulty power window master switch • A short to ground in the wire
B2	LT BLU			
B1	LT GRN	Connect terminals B8 and B1 with a jumper wire, and connect terminal B7 to body ground.	Check the driver's power window motor operation: The motor should run (the window should go down).	• Blown No. 27 (30 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's power window motor • An open in the wire
B7	BLU	Connect terminals B8 and B7 with a jumper wire, and connect terminal B1 to body ground.	Check the driver's power window motor operation: The motor should run (the window should go up).	• Blown No. 27 (30 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's power window motor • An open in the wire



6. Reconnect the connectors to the driver's MPCS unit, and do these input tests at the following connectors.

- If any test indicates a problem, find and correct the cause, then recheck the system.
- If all the input tests prove OK, the control unit must be faulty; replace the driver's MPCS unit and go to step 7.

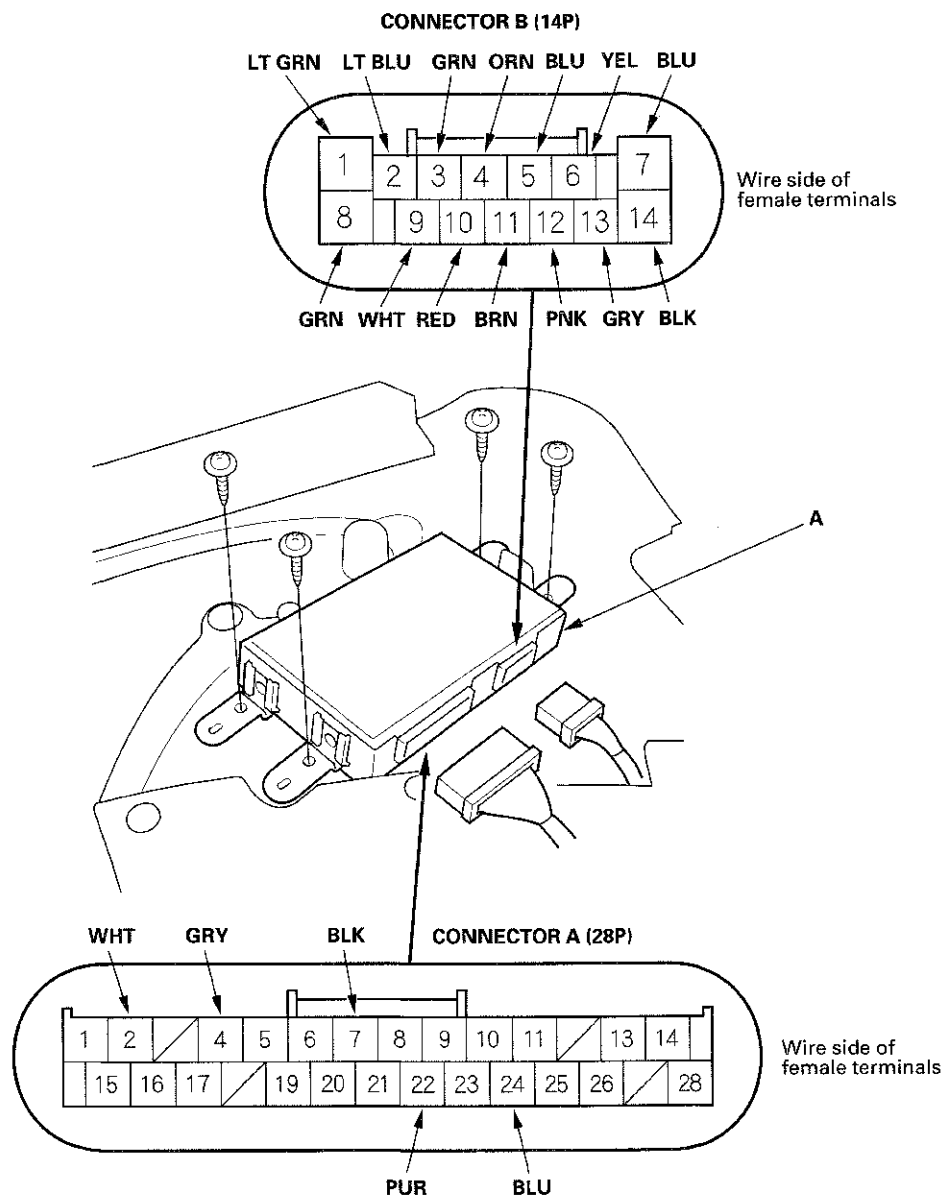
Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
A5	BLK	Under all conditions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G601) • Faulty driver's under-dash fuse/relay box • An open in the wire
B14	BLK	Under all conditions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G601) • Faulty driver's under-dash fuse/relay box • An open in the wire
A7	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 15 (40 A) fuse in the under-hood fuse/relay box • Blown No. 7 (10 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's under-dash fuse/relay box • An open in the wire
B8	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 23 (P/W) (50 A) fuse in the under-hood fuse/relay box • Blown No. 27 (30 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's under-dash fuse/relay box • An open in the wire
A25	YEL	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Blown No. 21 (10 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's under-dash fuse/relay box • An open in the wire
B9	LT GRN	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Faulty driver's MPCS unit • Faulty power window master switch • A short to ground in the wire
B3	RED	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Faulty driver's MPCS unit • An open in the wire
B6	GRN	Under all conditions	Measure the continuity to ground: There should be continuity.	• Poor ground (G601) • Faulty driver's MPCS unit • An open in the wire
B5	GRY	Ignition switch ON (II) and driver's power window motor runs by connecting terminals B8 and B1 with a jumper wire, and connect terminal B7 to body ground.	Measure the voltage between terminals B5 and B6: An analog meter should alternate between 0 V and about 5 V (a digital voltmeter reads about 2.5 V while the window moves).	• Blown No. 27 (30 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's MPCS unit • Faulty driver's power window motor • An open in the wire
B4	BRN	Ignition switch ON (II) and driver's power window motor runs by connecting terminals B8 and B1 with a jumper wire, and connect terminal B7 to body ground.	Measure the voltage between terminals B4 and B6: An analog meter should alternate between 0 V and about 5 V (a digital voltmeter reads about 2.5 V while the window moves).	• Blown No. 27 (30 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's MPCS unit • Faulty driver's power window motor • An open in the wire

7. Reset the power window control unit (see page 22-331).

Power Windows

Front Passenger's MPCS Unit Input Test

1. Turn the ignition switch to LOCK (0).
2. Remove the front passenger's door panel (see page 20-9).
3. Disconnect front passenger's MPCS unit (A) connectors A (28P) and B (14P).



4. Inspect the connector and socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
 - If the terminals look OK, go to step 5.



5. With the connectors still disconnected, do these input tests at the following connectors.

- If any test indicates a problem, find and correct the cause, then recheck the system.
- If all the input tests prove OK, go to step 6.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
A4	GRY	Driver's under-dash fuse/relay box connector X (39P) and right rear power window switch 14P connector disconnected	Check for continuity between terminal A4 and driver's under-dash fuse/relay box connector X (39P) terminal No. 15, and terminal A4 and right rear power window switch 14P connector terminal No. 2: There should be continuity.	• Faulty passenger's under-dash fuse/relay box • An open in the wire
			Check for continuity to ground: There should be no continuity.	• Faulty passenger's under-dash fuse/relay box • A short to ground in the wire
B2 A24	LT BLU BLU	Front passenger's power window switch in AUTO position	Check for continuity between the terminals: There should be continuity.	• Faulty front passenger's power window switch • An open in the wire
B2 A24	LT BLU BLU	Front passenger's power window switch released	Check for continuity between the terminals: There should be no continuity.	• Faulty front passenger's power window switch • A short to ground in the wire
B13 A24	GRY BLU	Front passenger's power window switch in UP position	Check for continuity between the terminals: There should be continuity.	• Faulty front passenger's power window switch • An open in the wire
B13 A24	GRY BLU	Front passenger's power window switch released	Check for continuity between the terminals: There should be no continuity.	• Faulty front passenger's power window switch • A short to ground in the wire
B11 A24	BRN BLU	Front passenger's power window switch in DOWN position	Check for continuity between the terminals: There should be continuity.	• Faulty front passenger's power window switch • An open in the wire
B11 A24	BRN BLU	Front passenger's power window switch released	Check for continuity between the terminals: There should no continuity.	• Faulty front passenger's power window switch • A short to ground in the wire
B9 A24	WHT BLU	Under all conditions	Connect battery power to terminal A24 and ground terminal B9. The LED should come on.	• Faulty front passenger's power window switch • Faulty LED • An open in the wire

(cont'd)

Power Windows

Front Passenger's MPCS Unit Input Test (cont'd)

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
B10 B12 A22	RED PNK PUR	Front passenger's power window switch DOWN	Check for continuity between the terminals: There should be continuity between terminals B10 and A22, and no continuity between terminals B10 and B12.	- Faulty front passenger's power window switch - An open in the wire - A short to ground in the wire
B10 B12 A22	RED PNK PUR	Front passenger's power window switch in released	Check for continuity between the terminals: There should be continuity between terminals B10 and B12, and no continuity between terminals B10 and A22.	- Faulty front passenger's power window switch - An open in the wire - A short to ground in the wire
B1	LT GRN	Connect terminals B8 and B1 with a jumper wire, and connect terminal B7 to body ground.	Check the front passenger's power window motor operation: The motor should run (the window should go down).	- Blown No. 3 (30 A) fuse in the passenger's under-dash fuse/relay box - Faulty front passenger's power window motor - An open in the wire
B7	BLU	Connect terminals B8 and B7 with a jumper wire, and connect terminal B1 to body ground.	Check the front passenger's power window motor operation: The motor should run (the window should go up).	- Blown No. 3 (30 A) fuse in the passenger's under-dash fuse/relay box - Faulty front passenger's power window motor - An open in the motor

6. Reconnect the connectors to the front passenger's MPCS unit, and do these input tests at the following connectors.

- If any test indicates a problem, find and correct the cause, then recheck the system.
- If all the input tests prove OK, the control unit must be faulty; replace the front passenger's MPCS unit and go to step 7.

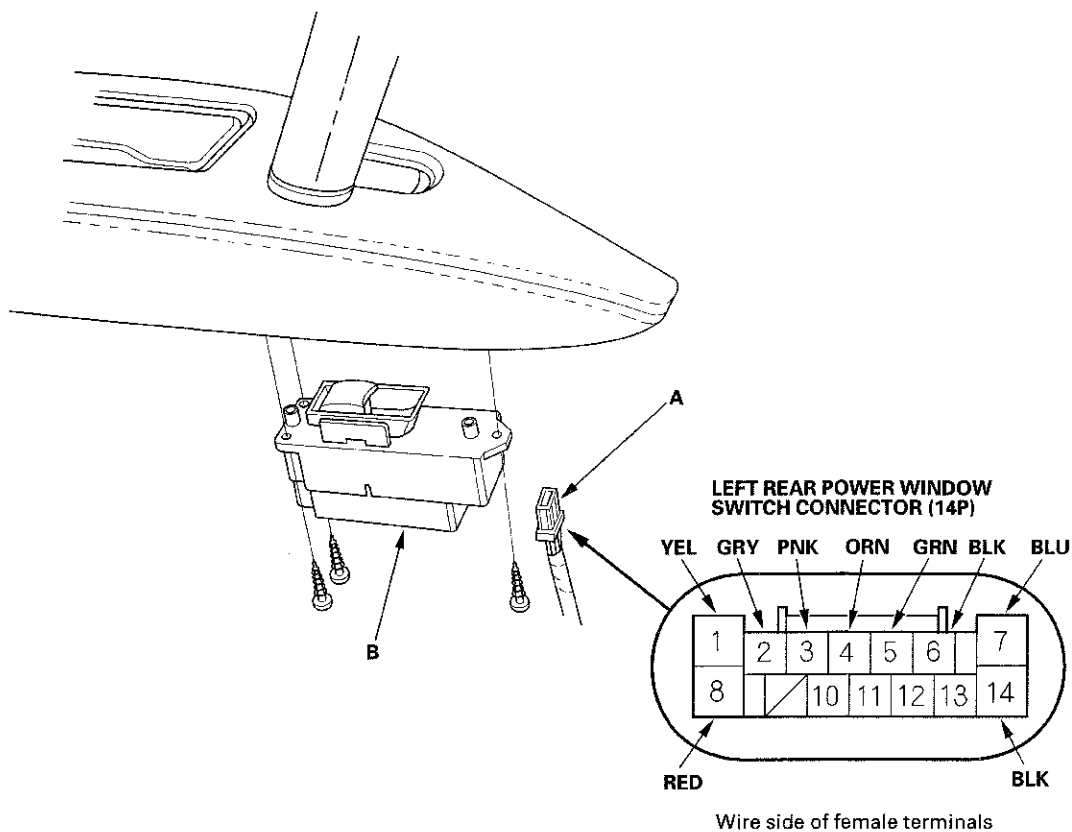
Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
A7	BLK	Under all conditions	Measure the voltage to ground: There should be less than 0.2 V.	- Poor ground (G506) - An open in the wire
B14	BLK	Under all conditions	Measure the voltage to ground: There should be less than 0.2 V.	- Poor ground (G506) - An open in the wire
A2	WHT	Under all conditions	Measure the voltage to ground: There should be battery voltage.	- Blown No. 15 (40 A) fuse in the under-hood fuse/relay box - Blown No. 7 (10 A) fuse in the driver's under-dash fuse/relay box - Faulty passenger's under-dash fuse/relay box - An open in the wire
B8	GRN	Under all conditions	Measure the voltage to ground: There should be battery voltage.	- Blown No. 22 (70 A) fuse in the under-hood fuse/relay box - Blown No. 3 (30 A) fuse in the passenger's under-dash fuse/relay box - Faulty passenger's under-dash fuse/relay box - An open in the wire
B3	GRN	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	- Faulty front passenger's MPCS unit - An open in the wire
B6	YEL	Under all conditions	Measure the continuity to ground: There should be continuity.	- Poor ground (G506) - Faulty front passenger's MPCS unit - An open in the wire
B5	BLU	Ignition switch ON (II) and front passenger's power window motor runs by connecting terminals B8 and B1 with a jumper wire, and connect terminal B7 to body ground.	Measure the voltage between terminals B5 and B6: An analog meter should alternate between 0 V and about 5 V (a digital voltmeter reads about 2.5 V while the window moves).	- Blown No. 3 (30 A) fuse in the passenger's under-dash fuse/relay box - Faulty front passenger's MPCS unit - Faulty front passenger's power window motor - An open in the wire
B4	ORN	Ignition switch ON (II) and front passenger's power window motor runs by connecting terminals B8 and B1 with a jumper wire, and connect terminal B7 to body ground.	Measure the voltage between terminals B4 and B6: An analog meter should alternate between 0 V and about 5 V (a digital voltmeter reads about 2.5 V while the window moves).	- Blown No. 3 (30 A) fuse in the passenger's under-dash fuse/relay box - Faulty front passenger's MPCS unit - Faulty front passenger's power window motor - An open in the wire

7. Reset the power window control unit (see page 22-331).



Left Rear Power Window Switch Input Test

1. Turn the ignition switch to LOCK (0).
2. Remove the left rear power window switch (see page 22-372).
3. Disconnect the 14P connector (A) from the left rear power window switch (B).



4. Inspect the connector and socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
 - If the terminals look OK, go to step 5.

(cont'd)

Power Windows

Left Rear Power Window Switch Input Test (cont'd)

5. With the connector still disconnected, do these input tests at the following connector.

- If any test indicates a problem, find and correct the cause, then recheck the system.
- If all the input tests prove OK, go to step 6.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
2	GRY	Driver's under-dash fuse/relay box connector H (14P) disconnected	Check for continuity between terminal No. 2 and driver's under-dash fuse/relay box connector H (14P) terminal No. 4: There should be continuity.	An open in the wire
			Check for continuity to ground: There should be no continuity.	A short to ground in the wire
1	YEL	Connect terminals No. 8 and No. 1 with a jumper wire, and connect terminal No. 7 to body ground.	Check the left rear power window motor operation: The motor should run (the window should go down).	• Blown No. 24 (20 A) fuse in the driver's under-dash fuse/relay box • Faulty left rear power window motor • An open in the wire
7	BLU	Connect terminals No. 8 and No. 7 with a jumper wire, and connect terminal No. 1 to body ground.	Check the left rear power window motor operation: The motor should run (the window should go up).	• Blown No. 24 (20 A) fuse in the driver's under-dash fuse/relay box • Faulty left rear power window motor • An open in the wire

6. Reconnect the connector to the left rear power window switch, and do these input tests at the following connector.

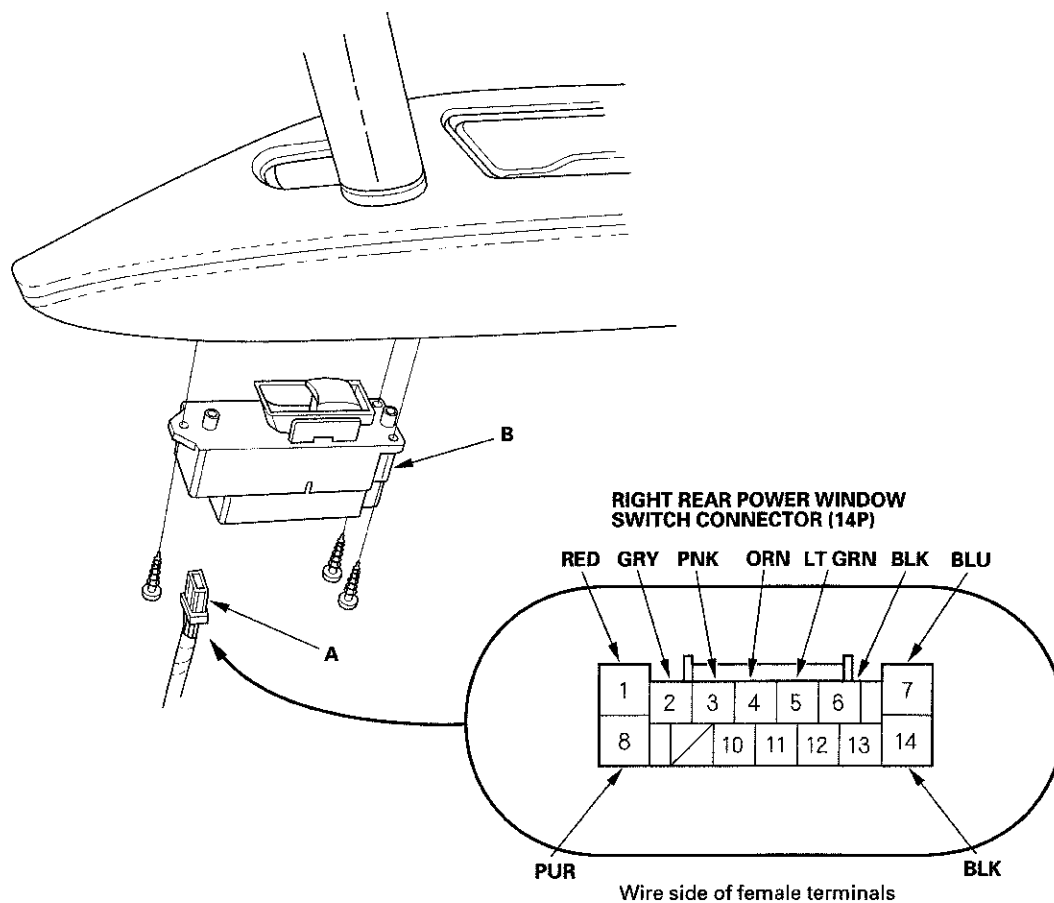
- If any test indicates a problem, find and correct the cause, then recheck the system.
- If all the input tests prove OK, the left rear power window switch must be faulty; replace it (see page 22-372) and go to step 7.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
6	BLK	Under all conditions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G601) • An open in the wire
14	BLK	Under all conditions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G601) • An open in the wire
8	RED	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 23 (P/W) (50 A) fuse in the under-hood fuse/relay box • Blown No. 24 (20 A) fuse in the driver's under-dash fuse/relay box • Faulty driver's under-dash fuse/relay box • An open in the wire
3	PNK	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Faulty left rear power window switch • An open in the wire
5	GRN	Ignition switch ON (II) and left rear power window motor runs by connecting terminals No. 8 and No. 1 with a jumper wire, and connect terminal No. 7 to body ground.	Measure the voltage between terminals No. 5 and No. 6: An analog meter should alternate between 0 V and about 5 V (a digital voltmeter reads about 2.5 V while the window moves).	• Blown No. 24 (20 A) fuse in the driver's under-dash fuse/relay box • Faulty left rear power window switch • Faulty left rear power window motor • An open in the wire
4	ORN	Ignition switch ON (II) and left rear power window motor runs by connecting terminals No. 8 and No. 1 with a jumper wire, and connect terminal No. 7 to body ground.	Measure the voltage between terminals No. 4 and No. 6: An analog meter should alternate between 0 V and about 5 V (a digital voltmeter reads about 2.5 V while the window moves).	• Blown No. 24 (20 A) fuse in the driver's under-dash fuse/relay box • Faulty left rear power window switch • Faulty left rear power window motor • An open in the wire

7. Reset the power window control unit (see page 22-331).

Right Rear Power Window Switch Input Test

1. Turn the ignition switch to LOCK (0).
2. Remove the right rear power window switch (see page 22-372).
3. Disconnect the 14P connector (A) from the right rear power window switch (B).



4. Inspect the connector and socket terminals to be sure they are all making good contact.
 - If the terminals are bent, loose or corroded, repair them as necessary and recheck the system.
 - If the terminals look OK, go to step 5.

(cont'd)

Power Windows

Right Rear Power Window Switch Input Test (cont'd)

5. With the connector still disconnected, do these input tests at the following connector.

- If any test indicates a problem, find and correct the cause, then recheck the system.
- If all the input tests prove OK, go to step 6.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
2	GRY	Driver's under-dash fuse/relay box connector X (39P) and passenger's MPCs unit connector A (28P) disconnected	Check for continuity between terminal No. 2 and driver's under-dash fuse/relay box connector X (39P) terminal No. 15: There should be continuity. Check for continuity to ground: There should be no continuity.	• Faulty passenger's under-dash fuse/relay box • An open in the wire
1	RED	Connect terminals No. 8 and No. 1 with a jumper wire, and connect terminal No. 7 to body ground.	Check the right rear power window motor operation: The motor should run (the window should go down).	• Faulty passenger's under-dash fuse/relay box • A short to ground in the wire • Blown No. 5 (20 A) fuse in the passenger's under-dash fuse/relay box • Faulty right rear power window motor • An open in the wire
7	BLU	Connect terminals No. 8 and No. 7 with a jumper wire, and connect terminal No. 1 to body ground.	Check the right rear power window motor operation: The motor should run (the window should go up).	• Blown No. 5 (20 A) fuse in the passenger's under-dash fuse/relay box • Faulty right rear power window motor • An open in the wire

6. Reconnect the connector to the right rear power window switch, and do these input tests at the following connector.

- If any test indicates a problem, find and correct the cause, then recheck the system.
- If all the input tests prove OK, the right rear power window switch must be faulty; replace it (see page 22-372) and go to step 7.

Cavity	Wire	Test condition	Test: Desired result	Possible cause if desired result is not obtained
6	BLK	Under all conditions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G651) • An open in the wire
14	BLK	Under all conditions	Measure the voltage to ground: There should be less than 0.2 V.	• Poor ground (G651) • An open in the wire
8	PUR	Under all conditions	Measure the voltage to ground: There should be battery voltage.	• Blown No. 22 (70 A) fuse in the under-hood fuse/relay box • Blown No. 5 (20 A) fuse in the passenger's under-dash fuse/relay box • Faulty passenger's under-dash fuse/relay box • An open in the wire
3	PNK	Ignition switch ON (II)	Measure the voltage to ground: There should be battery voltage.	• Faulty right rear power window switch • An open in the wire
5	LT GRN	Ignition switch ON (II) and right rear power window motor runs by connecting terminals No. 8 and No. 1 with a jumper wire, and connect terminal No. 7 to body ground.	Measure the voltage between terminals No. 5 and No. 6: An analog meter should alternate between 0 V and about 5 V (a digital voltmeter reads about 2.5 V while the window moves).	• Blown No. 5 (20 A) fuse in the passenger's under-dash fuse/relay box • Faulty right rear power window switch • Faulty right rear power window motor • An open in the wire
4	ORN	Ignition switch ON (II) and right rear power window motor runs by connecting terminals No. 8 and No. 1 with a jumper wire, and connect terminal No. 7 to body ground.	Measure the voltage between terminals No. 4 and No. 6: An analog meter should alternate between 0 V and about 5 V (a digital voltmeter reads about 2.5 V while the window moves).	• Blown No. 5 (20 A) fuse in the passenger's under-dash fuse/relay box • Faulty right rear power window switch • Faulty right rear power window motor • An open in the wire

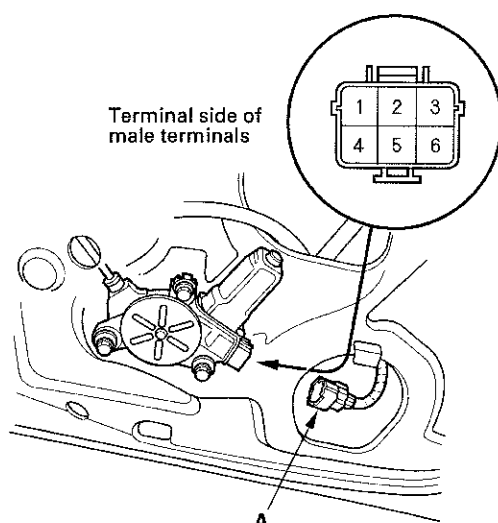
7. Reset the power window control unit (see page 22-331).



Power Window Motor Test

Motor Test

1. Remove the door panel (see page 20-9).
2. Disconnect the 6P connector (A) from the power window motor.



3. Test the motor in each direction by connecting battery power and ground according to the table. When the motor stops running, disconnect one lead immediately.

Terminal Direction	4 (3)*	1 (6)*
UP	⊕	⊖
DOWN	⊖	⊕

*: Front passenger's and left rear

4. If the motor does not run or fails to run smoothly, replace it.

Hall IC Unit (Pulser) Test

5. Measure the voltage between the terminals.

Common

There should be battery voltage between terminals No. 6 (No. 1)* (⊕) and No. 5 (No. 2)* (⊖) when the ignition switch is turned to ON (II).

*: Front passenger's and left rear power window motor

Driver's power window motor

Connect an analog voltmeter between terminals No. 2 (PLSA) (⊕) and No. 5 (SGND) (⊖), and between terminals No. 3 (PLSB) (⊕) and No. 5 (SGND) (⊖), then run the power window motor down or up. The voltmeter needle should move back and forth alternately (a digital voltmeter should show the average voltage between 0—5 V).

Front passenger's power window motor/Left rear power window motor

Connect an analog voltmeter between terminals No. 5 (PLSA) (⊕) and No. 2 (SGND) (⊖), and between terminals No. 4 (PLSB) (⊕) and No. 2 (SGND) (⊖), then run the power window motor down or up. The voltmeter needle should move back and forth alternately (a digital voltmeter should show the average voltage between 0—5 V).

Right rear power window motor

Connect an analog voltmeter between terminals No. 2 (PLSA) (⊕) and No. 5 (SGND) (⊖), and between terminals No. 3 (PLSB) (⊕) and No. 5 (SGND) (⊖), then run the power window motor down or up. The voltmeter needle should move back and forth alternately (a digital voltmeter should show the average voltage between 0—5 V).

6. If the voltage is not as specified, do these input tests:

- Driver's MPCS unit input test (see page 22-361).
- Front passenger's MPCS unit input test (see page 22-364).
- Left power window switch input test (see page 22-367).
- Right power window switch input test (see page 22-369).

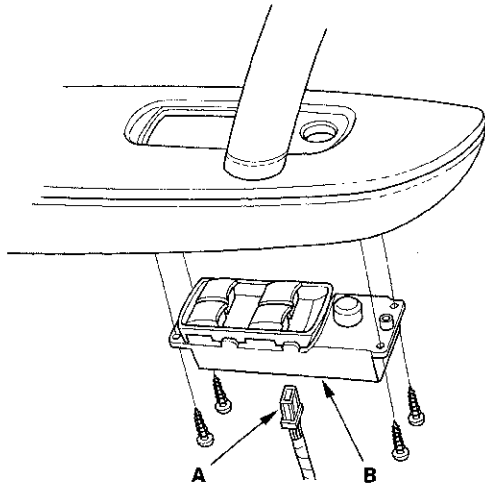
7. If the input tests are OK, replace the power window motor.

8. Reset the power window control unit (see page 22-331).

Power Windows

Power Window Master Switch Replacement

1. Remove the driver's door armrest (see page 20-9).
2. Disconnect the 6P connector (A) from the power window master switch (B).

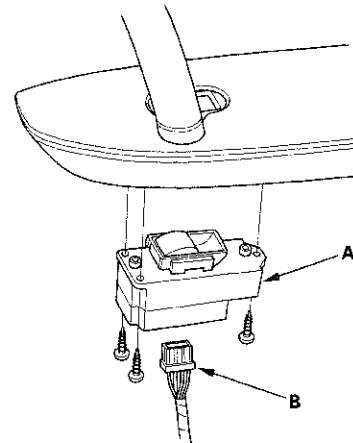


3. Remove the four screws and the switch.
4. Install the switch in the reverse order of removal.
5. After replacement, reset the power window control unit (see page 22-331).

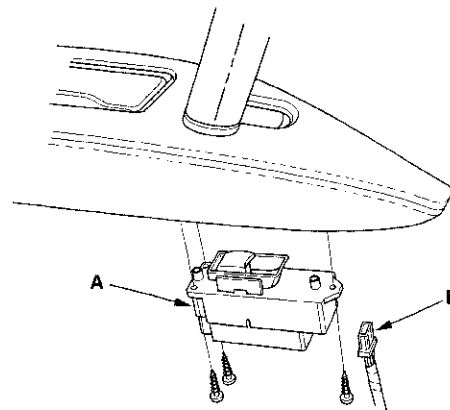
Passenger's Power Window Switch Test/Replacement

1. Remove the passenger's door armrest (see page 20-9).
2. Disconnect the 10P (or 14P)* connector (A) from the passenger's power window switch (B).
*: Rear power window switch

Front Passenger's



Rear



3. Remove the three screws and the switch.
4. Swap the power window switch with another known-good switch and test. If the original window switch is faulty; replace it.
5. Install the switch in the reverse order of removal.
6. After replacement, reset the power window control unit (see page 22-331).