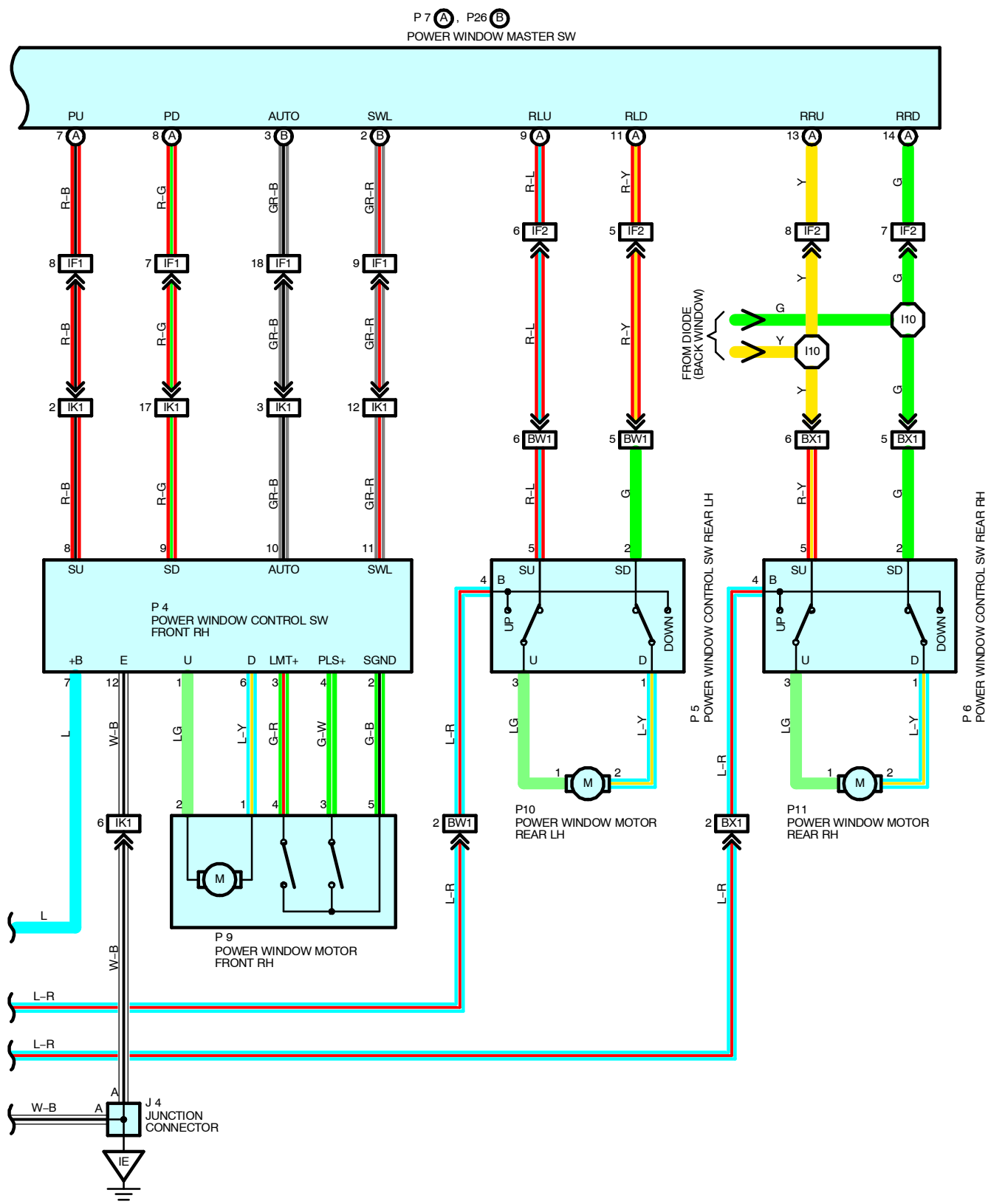






SYSTEM OUTLINE

With the ignition SW turned on, current flows through the ECU-IG fuse to TERMINAL 10 of the body ECU. This activates the ECU and at all times the current flowing to TERMINAL 3 of the ECU, TERMINAL (A) 3 of the power window master SW and TERMINAL 7 of the power window control SW front RH from POWER fuse. When the ignition SW turned on, current flows to TERMINAL 5 of the PWR relay to TERMINAL 3 to TERMINAL (A) 10 of the power window master SW and TERMINAL 4 (Rear LH, rear RH) of the power window control SW.

1. MANUAL OPERATION (DRIVER'S SW)

With the ignition SW turned on and with the power window master SW (Manual SW) in UP position, the current flowing to TERMINAL (A) 10 of the power window master SW flows to TERMINAL (A) 1 to TERMINAL 1 of the power window motor front LH to TERMINAL 2 to TERMINAL (A) 2 of the power window master SW to TERMINAL (A) 4 to GROUND and causes the power window motor to rotate in the up direction. The window ascends only while the SW is being pushed (Manual up position). In down operation, the flow of current from TERMINAL (A) 10 of the power window master SW to TERMINAL (A) 2 to TERMINAL 2 of the power window motor front LH to TERMINAL 1 to TERMINAL (A) 1 of the power window master SW to TERMINAL (A) 4 to GROUND, flowing in the opposite direction to manual up operation and causing the motor to rotate in reverse, lowering the window.

For the other windows, as the power window master SW is operated, the relevant door window is opened or closed.

2. MANUAL OPERATION (FRONT PASSENGER'S SW)

With the power window control SW pulled to the up side, current flowing from TERMINAL 7 of the power window control SW to TERMINAL 1 to TERMINAL 2 of the power window motor to TERMINAL 1 to TERMINAL 6 of the power window control SW to TERMINAL 12 to GROUND and causes the power window motor to rotate in the up direction. Up operation continues only while the power window control SW is pulled to the up side (Manual up position). When the window descends, the current flowing to the motor flows in the opposite direction, from TERMINAL 2 to TERMINAL 1, and the motor rotates in reverse. When the window lock SW is pushed to the lock side, the ground circuit to the front passenger's SW becomes open. As a result, even if Open/Close operation of the front passenger's window is tried, the current from TERMINAL 12 of the power window control SW is not grounded and the motor does not rotate, so the front passenger's window can not be operated and window lock occurs.

3. MANUAL OPERATION (REAR LH, RH SW)

With the power window control SW pulled to the up side, current flowing from TERMINAL 4 of the power window control SW to TERMINAL 3 to TERMINAL 1 of the power window motor to TERMINAL 2 to TERMINAL 1 of the power window control SW to TERMINAL 2 to TERMINAL (A) 11 or (A) 14 of the power window master SW to TERMINAL (A) 4 to GROUND and causes the power window motor to rotate in the up direction. Up operation continues only while the power window control SW is pulled to the up side. When the window descends, the current flowing to the motor flows in the opposite direction, from TERMINAL 1 to TERMINAL 2, and the motor rotates in reverse. When the window lock SW is pushed to the lock side, the ground circuit to the rear LH, RH window becomes open. As a result, even if Open/Close operation of the rear LH, RH window is tried, the current from TERMINAL (A) 4 of the power window master SW is not grounded and the motor does not rotate, so the rear LH, RH window can not be operated and window lock occurs.

4. STOPPING OF AUTO DOWN (DRIVER'S WINDOW)

When the manual SW (Power window master SW) is pulled to the up side during auto down operation, a ground circuit opens in the master SW and current does not flow from TERMINAL (A) 1 of the power window master SW to TERMINAL (A) 4, so the motor stops, causing auto down operation to stop. If the manual SW is pulled continuously, the motor rotates in the up direction in manual up operation.

5. STOPPING OF AUTO DOWN (FRONT PASSENGER'S WINDOW)

When the manual SW (Power window master SW or power window control SW front RH) is pulled to the up side during auto down operation, a ground circuit opens in the control SW and current does not flow from TERMINAL 1 of the power window control SW front RH to TERMINAL 12, so the motor stops, causing auto down operation to stop. If the manual SW is pulled continuously, the motor rotates in the up direction in manual up operation.

6. STOPPING OF AUTO UP (DRIVER'S WINDOW)

When the manual SW (Power window master SW) is pushed to the down side during auto up operation, a ground circuit opens in the master SW and current does not flow from TERMINAL (A) 2 of the power window master SW to TERMINAL (A) 4, so the motor stops, causing auto up operation to stop. If the manual SW is pushed continuously, the motor rotates in the down direction in manual down operation.

7. STOPPING OF AUTO UP (FRONT PASSENGER'S WINDOW)

When the manual SW (Power window master SW or power window control SW front RH) is pushed to the down side during auto up operation, a ground circuit opens in the control SW and current does not flow from TERMINAL 6 of the power window control SW front RH to TERMINAL 12, so the motor stops, causing auto up operation to stop. If the manual SW is pushed continuously, the motor rotates in the down direction in manual down operation.

8. AUTO DOWN OPERATION (DRIVER'S WINDOW)

With the ignition SW on and with the auto SW of the power window master SW in DOWN position, current flowing to TERMINAL (A) 10 of the power window master SW to TERMINAL (A) 2 to TERMINAL 2 of the power window motor front LH to TERMINAL 1 to TERMINAL (A) 1 of the power window master SW to TERMINAL (A) 4 to GROUND, causing the motor to rotate towards the down side. Then the solenoid in the power window master SW is activated and it locks the auto SW being pushed, causing the motor to continue to rotate in auto down operation. When the window has completely descended, the current flow between TERMINAL (A) 1 of the power window master SW and TERMINAL (A) 4 increases. As a result, the solenoid stops operating, the auto SW turns off and flow from TERMINAL (A) 10 of the power window master SW to TERMINAL (A) 2 is cut off, stopping the motor so that auto stop occurs.

9. AUTO DOWN OPERATION (FRONT PASSENGER'S WINDOW)

With the ignition SW on and with the auto SW of the power window master SW or power window control SW front RH in DOWN position, current flowing to TERMINAL 7 of the power window control SW front RH to TERMINAL 6 to TERMINAL 1 of the power window motor front RH to TERMINAL 2 to TERMINAL 1 of the power window control SW front RH to TERMINAL 12 to GROUND, causing the motor to rotate towards the down side. Then the solenoid in the power window control SW front RH is activated and it locks the auto SW being pushed, causing the motor to continue to rotate in auto down operation. When the window has completely descended, the current flow between TERMINAL 6 of the power window control SW front RH and TERMINAL 12 increases. As a result, the solenoid stops operating, the auto SW turns off and flow from TERMINAL 7 of the power window control SW front RH to TERMINAL 6 is cut off, stopping the motor so that auto stop occurs.

10. AUTO UP OPERATION (DRIVER'S WINDOW)

With the ignition SW on and with the auto SW of the power window master SW in UP position, current flowing to TERMINAL (A) 10 of the power window master SW to TERMINAL (A) 1 to TERMINAL 1 of the power window motor front LH to TERMINAL 2 to TERMINAL (A) 2 of the power window master SW to TERMINAL (A) 4 to GROUND, causing the motor to rotate towards the up side. Then the solenoid in the power window master SW is activated and it locks the auto SW being pulled, causing the motor to continue to rotate in auto up operation. When the window has completely descended, the current flow between TERMINAL (A) 2 of the power window master SW and TERMINAL (A) 4 increases. As a result, the solenoid stops operating, the auto SW turns off and flow from TERMINAL (A) 10 of the power window master SW to TERMINAL (A) 1 is cut off, stopping the motor so that auto stop occurs.

11. AUTO UP OPERATION (FRONT PASSENGER'S WINDOW)

With the ignition SW on and with the auto SW of the power window master SW or power window control SW front RH in UP position, current flowing to TERMINAL 7 of the power window control SW front RH to TERMINAL 1 to TERMINAL 2 of the power window motor front RH to TERMINAL 1 to TERMINAL 6 of the power window control SW front RH to TERMINAL 12 to GROUND, causing the motor to rotate towards the up side. Then the solenoid in the power window control SW front RH is activated and it locks the auto SW being pulled, causing the motor to continue to rotate in auto up operation. When the window has completely descended, the current flow between TERMINAL 6 of the power window control SW front RH and TERMINAL 12 increases. As a result, the solenoid stops operating, the auto SW turns off and flow from TERMINAL 7 of the power window control SW front RH to TERMINAL 1 is cut off, stopping the motor so that auto stop occurs.

12. KEY OFF POWER WINDOW OPERATION

With the ignition SW turned from on to off, the body ECU operates and current flows from the POWER fuse to TERMINAL 3 of the body ECU to TERMINAL 2 to TERMINAL 1 of the PWR relay to TERMINAL 2 to GROUND for about 43 seconds. The same as normal operation, the current flows from the POWER fuse to TERMINAL 5 of the PWR relay to TERMINAL 3 to TERMINAL (A) 10 of the power window master SW, TERMINAL 4 (Rear LH, RH) of the power window control SW and signal input in to the TERMINAL 11 of the power window control SW front RH. As a result, for about 43 seconds after the ignition SW is turned off, it is possible to raise and lower the power window by the functioning of this ECU. Also, by opening the front door LH (the door courtesy SW front LH on) within about 43 seconds after turning the ignition SW to off, a signal is input to TERMINAL (A) 19 of the body ECU. As a result, the ECU turns off and up and down movement of the window stops. Furthermore, front RH, rear LH, RH window operate the same as the above circuit.

13. CATCHING PREVENTION FUNCTION (DRIVER'S, FRONT PASSENGER'S WINDOW)

When any foreign matter is caught in the window during power window auto up operation, the pulse sensor in the power window motor detects the changes in the number of motor rotations and forcibly opens the door window 50 mm, or when the window opening is less than 200 mm, it opens the window until the opening is 200 mm.

POWER WINDOW

SERVICE HINTS

B16 (A) BODY ECU

3-GROUND : Always approx. **12** volts

10-GROUND : Approx. **12** volts with ignition SW at **ON** position

(A)19-GROUND : Continuity with front LH door opened

PWR RELAY [DRIVER SIDE J/B]

5-3 : Closed with ignition SW on and stays at **12** volts for **43** seconds after the ignition SW is turned off, but if a door is opened in this **43** seconds period, voltage will drop to **0** volts

D16 DOOR COURTESY SW FRONT LH

1-GROUND : Continuity with door opened

P4 POWER WINDOW CONTROL SW FRONT RH

7-GROUND : Always approx. **12** volts

12-GROUND : Always continuity

P5, P6 POWER WINDOW CONTROL SW REAR LH, RH

4-GROUND : Approx. **12** volts with ignition SW on and stays at **12** volts for **43** seconds after the ignition SW is turned off, but if a door is opened in this **43** seconds period, voltage will drop to **0** volts

P7 (A) POWER WINDOW MASTER SW

(A) 4-GROUND : Always continuity

(A)10-GROUND : Approx. **12** volts with ignition SW on and stays at **12** volts for **43** seconds after the ignition SW is turned off, but if a door is opened in this **43** seconds period, voltage will drop to **0** volts

(A) 3-GROUND : Always approx. **12** volts

WINDOW LOCK SW

Open with window lock SW at **LOCK** position

○ : PARTS LOCATION

Code	See Page	Code	See Page	Code	See Page
B16 A	32	J11 B	33	P8	35
D16	34	P4	35	P9	35
J4	33	P5	35	P10	35
J9	33	P6	35	P11	35
J10 A	33	P7 A	35	P26 B	35

○ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

Code	See Page	Junction Block and Wire Harness (Connector Location)
1C	24	Cowl Wire and Driver Side J/B (Lower Finish Panel)
1J		
3E	26	Cowl Wire and Center J/B (Near the Steering Column Tube)

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
IF1	42	Front Door LH Wire and Cowl Wire (Left Kick Panel)
IF2		
IK1	42	Front Door RH Wire and Cowl Wire (Right Kick Panel)
BW1	44	Rear Door LH Wire and Cowl Wire (Left Center Pillar)
BX1	44	Rear Door RH Wire and Cowl Wire (Right Center Pillar)

▽ : GROUND POINTS

Code	See Page	Ground Points Location
IE	42	Cowl Side Panel LH
IF	42	Cowl Side Panel RH

**: SPLICE POINTS**

Code	See Page	Wire Harness with Splice Points	Code	See Page	Wire Harness with Splice Points
I1	42	Cowl Wire	I10	42	Cowl Wire
I5					