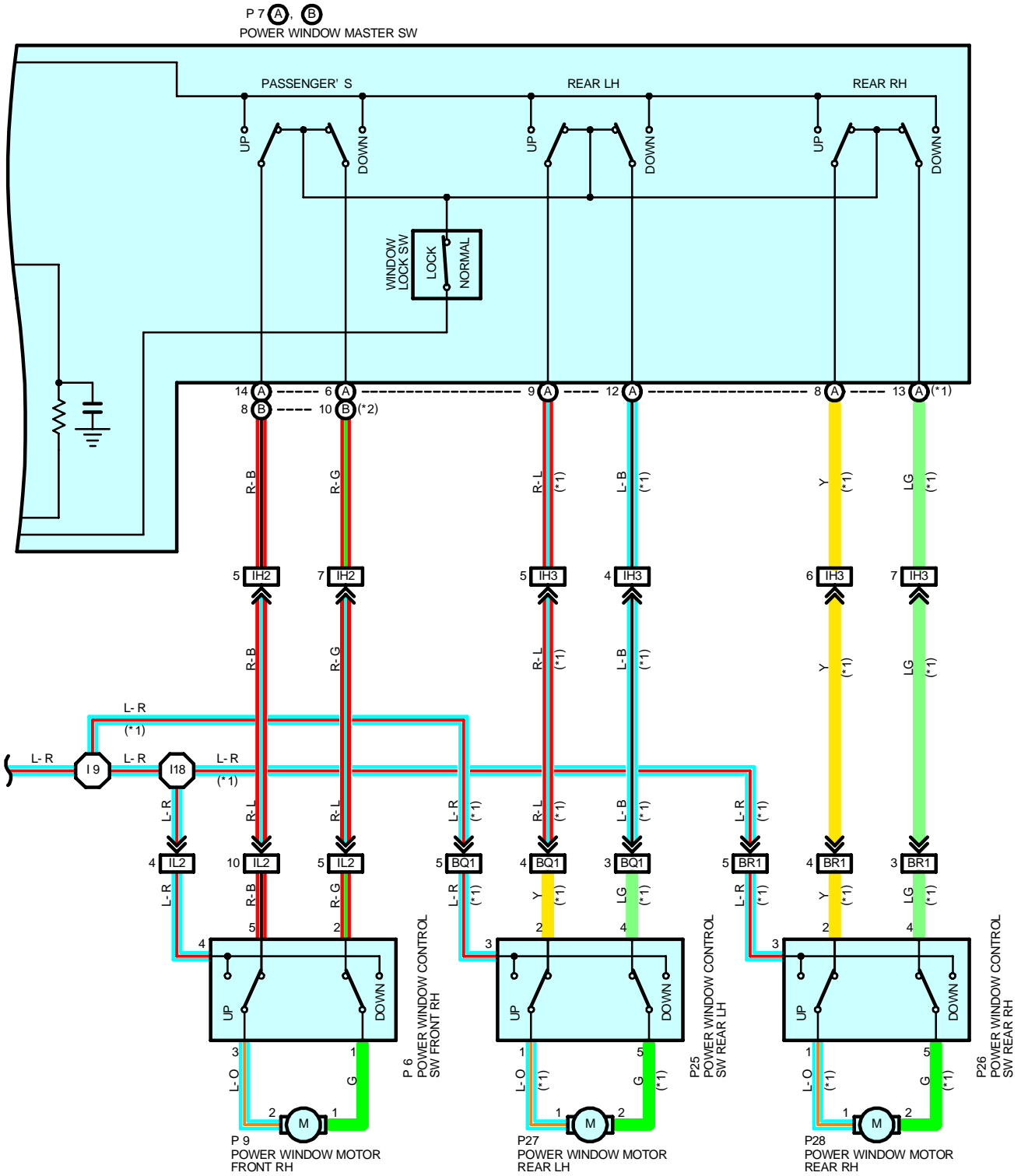


* 1 : DOUBLE CAB
 * 2 : EXCEPT DOUBLE CAB



POWER WINDOW

SYSTEM OUTLINE

With the ignition SW turned on, current flows through the ECU-IG fuse to TERMINAL 10 of the body ECU to TERMINAL 2 to TERMINAL 1 of the PWR relay to TERMINAL 2 to GROUND, activating the PWR relay, and the current flowing from TERMINAL 5 of the PWR relay flows to TERMINAL 3 to TERMINAL (A) 10 (Double cab), (B) 9 (Except double cab) of the power window master SW and TERMINAL 4 (Front RH), 3 (Rear) of the power window control SW.

1. MANUAL OPERATION (DRIVER'S WINDOW)

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 (Double cab), (B) 9 (Except double cab) of the power window master SW flows to TERMINAL (A) 1 (Double cab), (B) 3 (Except double cab) to TERMINAL 1 of the power window motor LH to TERMINAL 2 to TERMINAL (A) 5 (Double cab), (B) 4 (Except double cab) of the master SW to TERMINAL (A) 3 (Double cab), (B) 1 (Except double cab) to GROUND and causes the power window motor to rotate in the up direction. The window ascends only while the SW is being pushed.

In down operation, the current flowing from TERMINAL (A) 10 (Double cab), (B) 9 (Except double cab) of the power window master SW to TERMINAL (A) 5 (Double cab), (B) 4 (Except double cab) flows to TERMINAL 2 of the motor LH to TERMINAL 1 to TERMINAL (A) 1 (Double cab), (B) 3 (Except double cab) of the master SW to TERMINAL (A) 3 (Double cab), (B) 1 (Except double cab) to GROUND, flowing in the opposite direction to manual up operation, causing the motor to rotate in reverse and lowering the window.

2. 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, the current flowing to TERMINAL (A) 10 (Double cab), (B) 9 (Except double cab) of the master SW flows to TERMINAL (A) 5 (Double cab), (B) 4 (Except double cab) of the master SW to TERMINAL 2 of the power window motor LH to TERMINAL 1 to TERMINAL (A) 1 (Double cab), (B) 3 (Except double cab) of the master SW to TERMINAL (A) 3 (Double cab), (B) 1 (Except double cab) to GROUND, causing the motor to rotate towards the down side.

Then the solenoid in the 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 flowing between TERMINAL (A) 1 (Double cab), (B) 3 (Except double cab) of the master SW and TERMINAL (A) 3 (Double cab), (B) 1 (Except double cab) increases. As a result, the solenoid stops operating, the auto SW turns off and the flowing from TERMINAL (A) 10 (Double cab), (B) 9 (Except double cab) of the master SW to TERMINAL (A) 5 (Double cab), (B) 4 (Except double cab) is cut off, stopping the motor so that auto stop occurs.

3. STOPPING OF AUTO DOWN AT DRIVER'S WINDOW

When the manual SW (Driver's) is pushed 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 (Double cab), (B) 3 (Except double cab) of the master SW to TERMINAL (A) 3 (Double cab), (B) 1 (Except double cab), so the motor stops, causing auto down operation to stop. If the manual SW is pushed continuously, the motor rotates in the up direction in manual up operation.

4. MANUAL OPERATION BY POWER WINDOW CONTROL SW (FRONT RH WINDOW)

With the power window control SW front RH is pushed to the up side, the current flowing from TERMINAL 4 of the power window control SW front RH flows to TERMINAL 3 to TERMINAL 2 of the power window motor front RH to TERMINAL 1 to TERMINAL 1 of the power window control SW front RH to TERMINAL 2 to TERMINAL (A) 6 (Double cab), (B) 10 (Except double cab) of the master SW to TERMINAL (A) 3 (Double cab), (B) 1 (Except double cab) to GROUND. This causes the power window motor front RH to rotate in the up direction. Up operation is continuous only while the power window control SW RH is pushed 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 front RH window becomes open. As a result, even if Open/Close operation of the front RH window is tried, the current from TERMINAL (A) 3 (Double cab), (B) 1 (Except double cab) of the power window master SW is not grounded and the motor does not rotate, so the front RH window can not be operated and window lock occurs.

5. MANUAL OPERATION (REAR LH, RH WINDOW) [DOUBLE CAB]

With the power window control SW rear LH, RH pulled to the up side, the current flowing from TERMINAL 3 of the power window control SW flows to TERMINAL 1 to TERMINAL 1 of the power window motor to TERMINAL 2 to TERMINAL 5 of the power window control SW to TERMINAL 4 to TERMINAL (A) 12 (LH) or (A) 13 (RH) of the master SW to TERMINAL (A) 3 (Double cab), (B) 1 (Except double cab) to GROUND and causes the power window motor rear LH, RH to rotate in the up direction. The 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) 3 (Double cab), (B) 1 (Except double cab) 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.

6. KEY OFF POWER WINDOW OPERATION

With the ignition SW turned from on to off, the body ECU operates for about 45 seconds and current flows from TERMINAL 1 of the PWR relay to TERMINAL 2 to GROUND. For this period, current also flows TERMINAL 5 to TERMINAL 3. This current flows to TERMINAL (A) 10 (Double cab), (B) 9 (Except double cab) of the power window master SW and to TERMINAL 4 (Front RH), 3 (Rear) of the power window control SW. As a result, for about 45 seconds after the ignition SW is turned off, it is possible to raise and lower the power window by the functioning of the body ECU. Also, by opening the door (Door courtesy SW on) within about 45 seconds after turning the ignition SW to off, a signal is input to the body ECU. As a result, the body ECU turns off, and up and down movement of the window stops.

SERVICE HINTS

D15, D16 DOOR COURTESY SW LH, RH

1-GROUND : Continuity with door open

BODY ECU

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

3, 4-GROUND : Always approx. **12** volts

P7 POWER WINDOW MASTER SW

(A) 3, (B) 1-GROUND : Always continuity

(A) 10, (B) 9-GROUND : Approx. **12** volts with ignition SW on and stays at **12** volts for **45** seconds after the ignition SW is turned off, but if a door is opened in this **45** seconds period, voltage will drop to **0** volts

(A) 1, (B) 3-GROUND : Approx. **12** volts with ignition SW at **ON** position and master SW at **UP** position

(A) 5, (B) 4-GROUND : Approx. **12** volts with ignition SW at **ON** position and master SW at **DOWN** or **AUTO DOWN** position

WINDOW LOCK SW

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

○ : PARTS LOCATION

| Code | See Page | Code | See Page | Code | See Page |
|------|--|------|--|------|---------------------------------|
| D15 | 34 | P7 | 37 (Except Double Cab) | P25 | 36 (Double Cab) |
| D16 | 34 | P8 | 36 (Double Cab) | P26 | 36 (Double Cab) |
| P6 | 36 (Double Cab) | | 37 (Except Double Cab) | P27 | 36 (Double Cab) |
| | 37 (Except Double Cab) | P9 | 36 (Double Cab) | P28 | 36 (Double Cab) |
| P7 | A | | 36 (Double Cab) | | |

○ : RELAY BLOCKS

| Code | See Page | Relay Blocks (Relay Block Location) |
|------|--------------------|-------------------------------------|
| 2 | 21 | R/B No.2 (Engine Compartment Left) |

○ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

| Code | See Page | Junction Block and Wire Harness (Connector Location) |
|------|--------------------|---|
| 1C | 23 | Cowl Wire and J/B No.1 (Lower Finish Panel) |
| 1E | 23 | Engine Room Main Wire and J/B No.1 (Lower Finish Panel) |
| 1J | 23 | Cowl Wire and J/B No.1 (Lower Finish Panel) |
| 1L | 22 | |
| 3B | 24 | Cowl Wire and J/B No.3 (Behind the Instrument Panel Left) |

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

| Code | See Page | Joining Wire Harness and Wire Harness (Connector Location) |
|------|---------------------------------|---|
| IH2 | 44 | Front Door LH Wire and Cowl Wire (Left Kick Panel) |
| IH3 | | |
| IL2 | 44 | Front Door RH Wire and Cowl Wire (Right Kick Panel) |
| BQ1 | 46 (Double Cab) | Rear Door No.2 Wire and Cowl Wire (Under the Left Center Pillar) |
| BR1 | 46 (Double Cab) | Rear Door No.1 Wire and Cowl Wire (Under the Right Center Pillar) |

POWER WINDOW



: GROUND POINTS

| Code | See Page | Ground Points Location |
|------|--------------------|--|
| IE | 44 | Around the Right Edge of the Reinforcement |
| IG | 44 | Around the Left Edge of the Reinforcement |



: SPLICE POINTS

| Code | See Page | Wire Harness with Splice Points | Code | See Page | Wire Harness with Splice Points |
|------|--------------------|---------------------------------|------|--------------------|---------------------------------|
| I9 | 44 | Cowl Wire | I18 | 44 | Cowl Wire |

