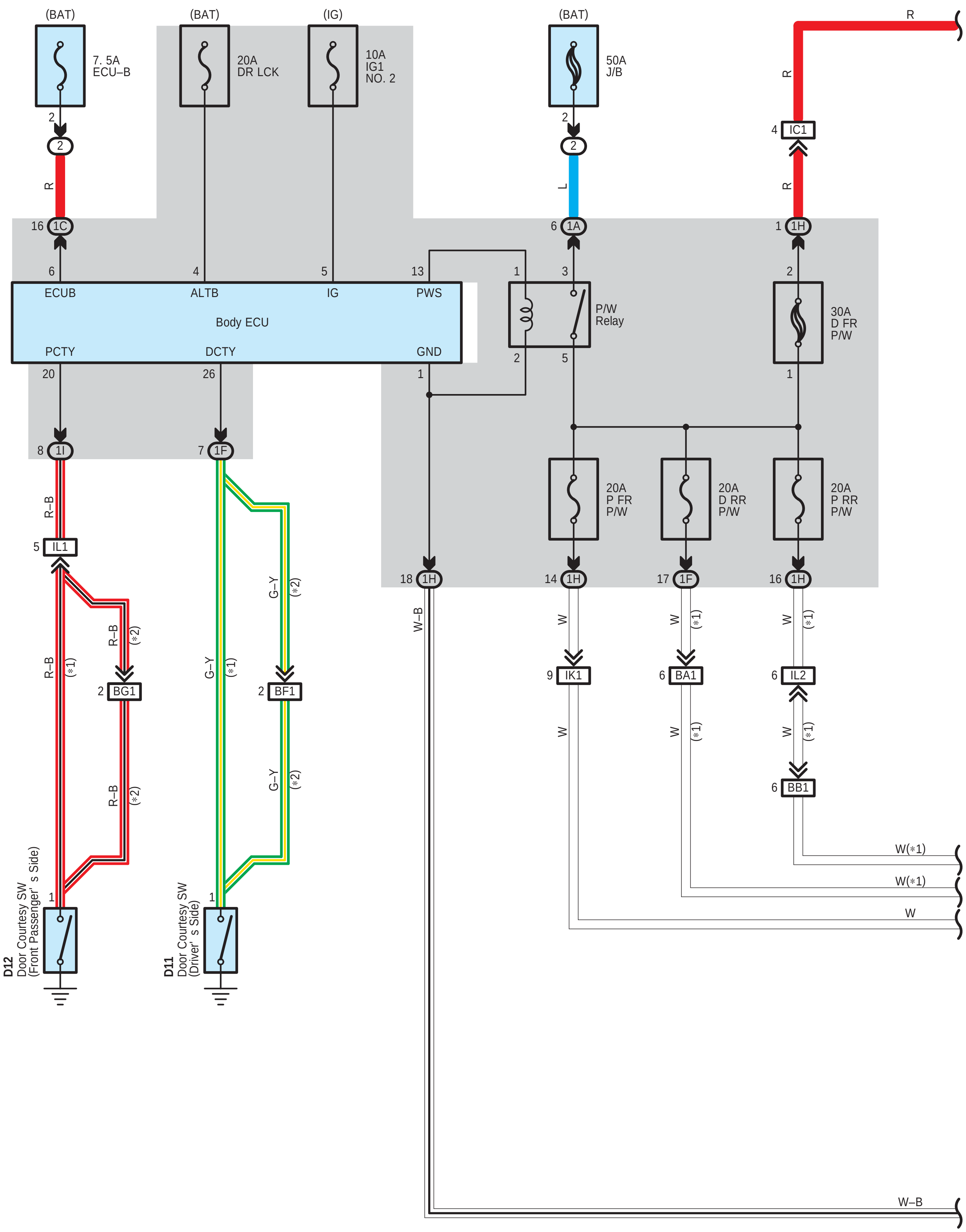
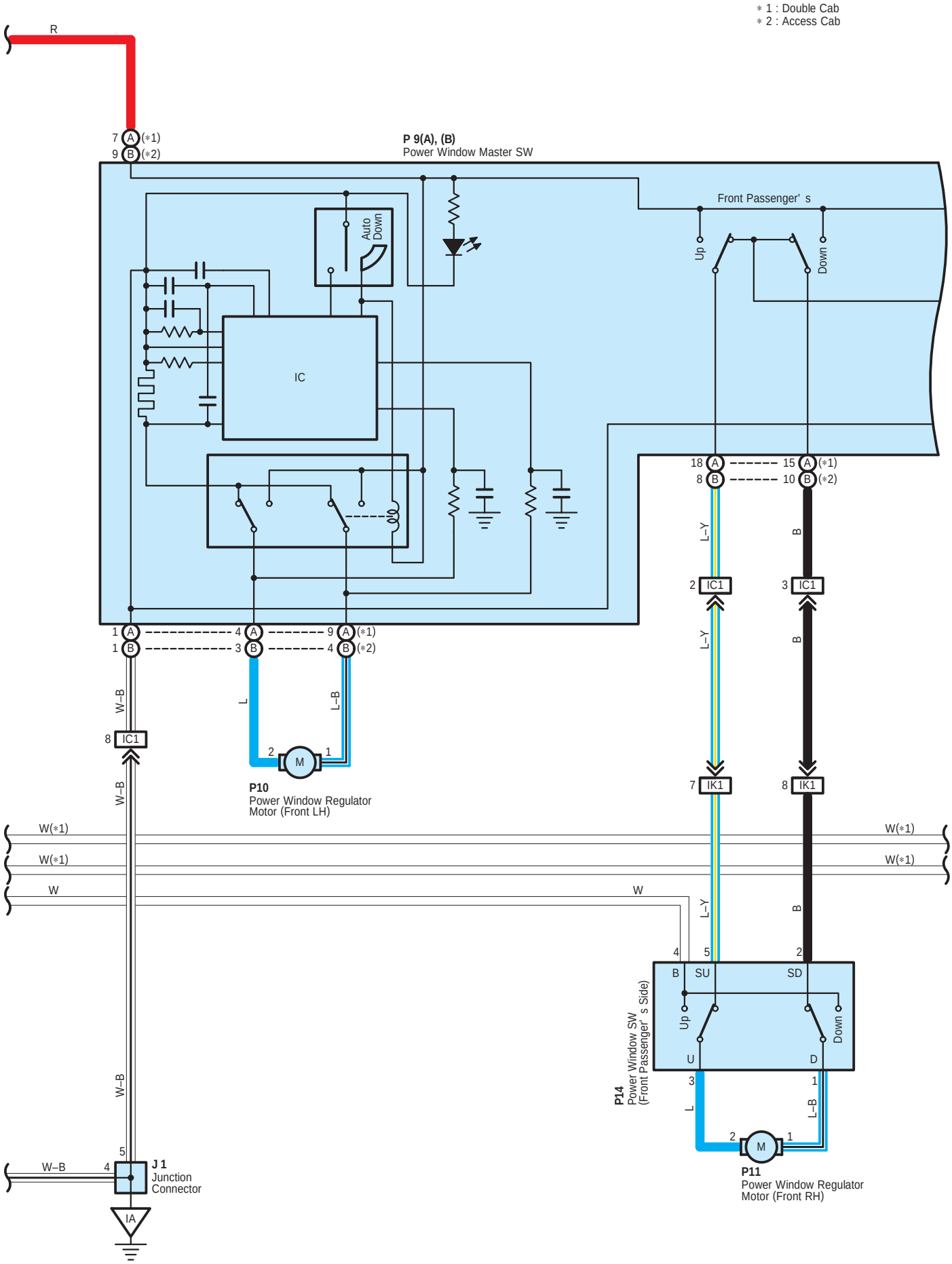
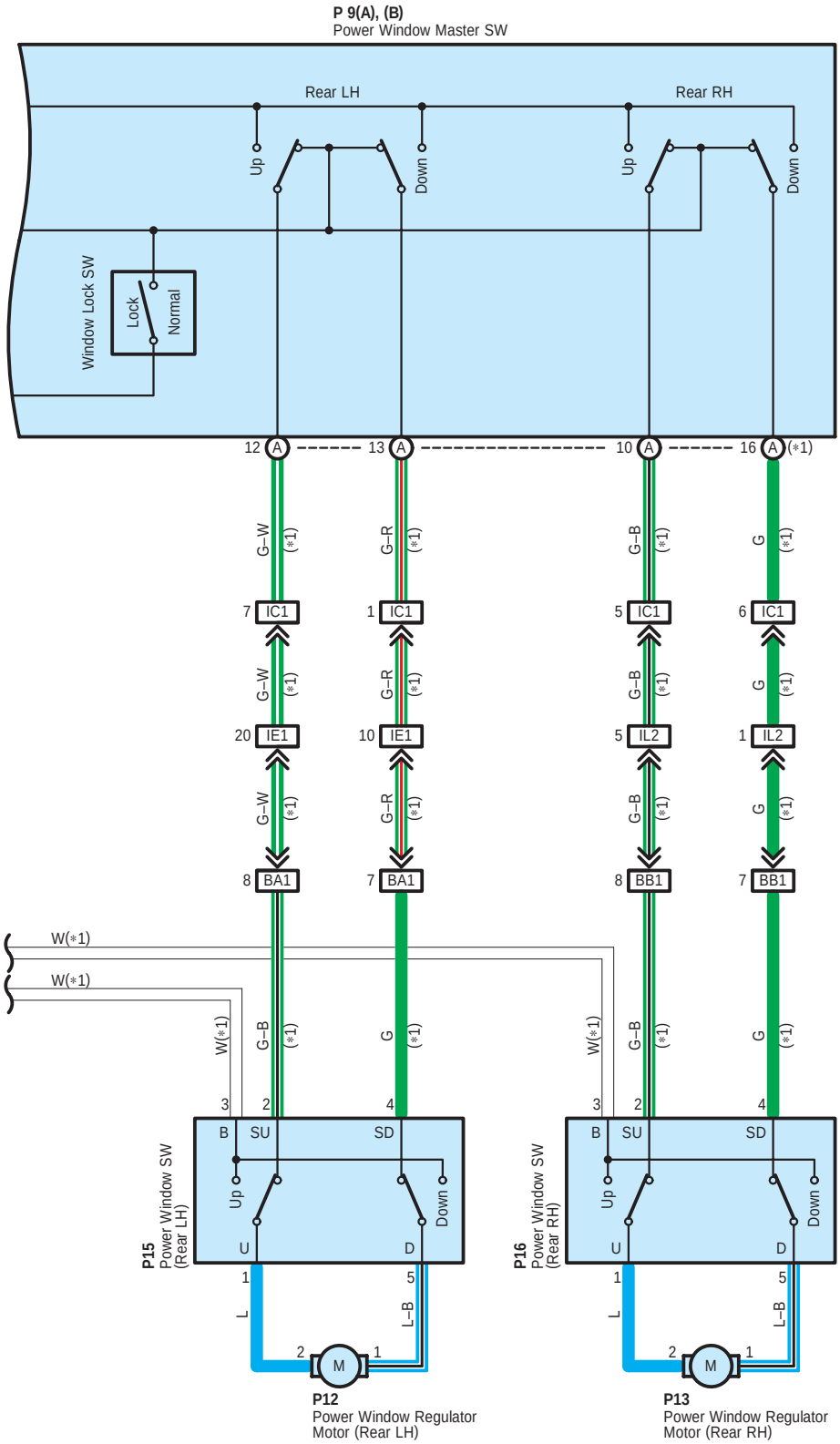

(BAT)
7. 5A
ECU–B
(BAT)
20A
DR LCK
(IG)
10A
IG1
NO. 2
(BAT)
50A
J/B
R
IC1
1C
1A
1H
ECUB
ALTB
IG
PWS
Body ECU
PCTY
DCTY
GND
P/W
Relay
30A
D FR
P/W
1I
1F
20A
P FR
P/W
20A
D RR
P/W
20A
P RR
P/W
R–B
IL1
G–Y
BG1
BF1
(*1)
(*2)
W–B
W
IK1
BA1
IL2
BB1
W(*1)
W(*1)
W
W–B
D12
Door Courtesy SW
(Front Passenger' s Side)
D11
Door Courtesy SW
(Driver' s Side)


∗1 : Double Cab
∗2 : Access Cab
R
7 A (∗1)
9 B (∗2)
P 9(A), (B)
Power Window Master SW
Auto Down
IC
Front Passenger' s
Up
Down
18 A
8 B
15 A (∗1)
10 B (∗2)
L–Y
B
2 IC1
3 IC1
1 A
1 B
4 A
3 B
9 A (∗1)
4 B (∗2)
W–B
L
L–B
8 IC1
2
M
1
P10
Power Window Regulator
Motor (Front LH)
7 IK1
8 IK1
W(∗1)
W
4
5
2
B
SU
SD
Up
Down
U
D
P14
Power Window SW
(Front Passenger' s Side)
3
1
2
M
1
P11
Power Window Regulator
Motor (Front RH)
5
W–B
4
J 1
Junction
Connector
IA

∗ 1 : Double Cab


P 9(A), (B)
Power Window Master SW
Rear LH
Rear RH
Up
Down
Window Lock SW
Lock
Normal
12 A
13 A
10 A
16 A (∗1)
G–W (∗1)
G–R (∗1)
G–B (∗1)
G (∗1)
7 IC1
1 IC1
5 IC1
6 IC1
20 IE1
10 IE1
5 IL2
1 IL2
8 BA1
7 BA1
8 BB1
7 BB1
W(∗1)
W(∗1)
3
2
4
B
SU
SD
U
D
1
5
L
L–B
2
M
1
P15
Power Window SW
(Rear LH)
P16
Power Window SW
(Rear RH)
P12
Power Window Regulator
Motor (Rear LH)
P13
Power Window Regulator
Motor (Rear RH)

System Outline

With the ignition SW turned on, current flows through the IG1 NO.2 fuse to TERMINAL 5 of the body ECU to TERMINAL 13 to TERMINAL 1 of the P/W relay to TERMINAL 2 to GROUND, activating the P/W relay, and the current flowing from TERMINAL 3 of the P/W relay flows to TERMINAL 5 to D FR P/W fuse to TERMINAL (A) 7 (Double cab), (B) 9 (Access cab) of the power window master SW, P FR P/W fuse to TERMINAL 4 of the power window SW (Front passenger's side), D RR P/W fuse to TERMINAL 3 of the power window SW (Rear LH), P RR P/W fuse to TERMINAL 3 of the power window SW (Rear RH).

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) 7 (Double cab), (B) 9 (Access cab) of the power window master SW flows to TERMINAL (A) 4 (Double cab), (B) 3 (Access cab) to TERMINAL 2 of the power window regulator motor (Front LH) to TERMINAL 1 to TERMINAL (A) 9 (Double cab), (B) 4 (Access cab) of the master SW to TERMINAL (A) 1 (Double cab), (B) 1 (Access cab) to GROUND and causes the power window regulator 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) 7 (Double cab), (B) 9 (Access cab) of the power window master SW to TERMINAL (A) 9 (Double cab), (B) 4 (Access cab) flows to TERMINAL 1 of the motor LH to TERMINAL 2 to TERMINAL (A) 4 (Double cab), (B) 3 (Access cab) of the master SW to TERMINAL (A) 1 (Double cab), (B) 1 (Access 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) 7 (Double cab), (B) 9 (Access cab) of the master SW flows to TERMINAL (A) 9 (Double cab), (B) 4 (Access cab) of the master SW to TERMINAL 1 of the power window regulator motor (Front LH) to TERMINAL 2 to TERMINAL (A) 4 (Double cab), (B) 3 (Access cab) of the master SW to TERMINAL (A) 1 (Double cab), (B) 1 (Access 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) 4 (Double cab), (B) 3 (Access cab) of the master SW and TERMINAL (A) 1 (Double cab), (B) 1 (Access cab) increases. As a result, the solenoid stops operating, the auto SW turns off and the flowing from TERMINAL (A) 7 (Double cab), (B) 9 (Access cab) of the master SW to TERMINAL (A) 9 (Double cab), (B) 4 (Access 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) 4 (Double cab), (B) 3 (Access cab) of the master SW to TERMINAL (A) 1 (Double cab), (B) 1 (Access 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 SW (Front passenger's side) is pushed to the up side, the current flowing from TERMINAL 4 of the power window SW (Front passenger's side) flows to TERMINAL 3 to TERMINAL 2 of the power window regulator motor (Front RH) to TERMINAL 1 to TERMINAL 1 of the power window SW (Front passenger's side) to TERMINAL 2 to TERMINAL (A) 15 (Double cab), (B) 10 (Access cab) of the master SW to TERMINAL (A) 1 (Double cab), (B) 1 (Access cab) to GROUND. This causes the power window regulator 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 revers.

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) 1 (Double cab), (B) 1 (Access 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 SW (Rear LH, RH) pulled to the up side, the current flowing from TERMINAL 3 of the power window SW flows to TERMINAL 1 to TERMINAL 2 of the power window regulator motor to TERMINAL 1 to TERMINAL 5 of the power window SW to TERMINAL 4 to TERMINAL (A) 13 (LH) or (A) 16 (RH) of the master SW to TERMINAL (A) 1 to GROUND and causes the power window regulator 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 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 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) 1 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 P/W relay to TERMINAL 2 to GROUND. For this period, current also flows TERMINAL 1 to TERMINAL 2. This current flows to TERMINAL (A) 7 (Double cab), (B) 9 (Access cab) of the power window master SW and to TERMINAL 4 (Front RH), 3 (Rear) of the power window SW. As a result, for about approx. 43 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.

: Parts Location

Code	See Page	Code	See Page	Code	See Page
D11	46 (*1)	P9 B	48 (*2)	P13	47 (*1)
	48 (*2)	P10	47 (*1)	P14	47 (*1)
D12	46 (*1)		48 (*2)		48 (*2)
	48 (*2)	P11	47 (*1)	P15	47 (*1)
J1	45		48 (*2)	P16	47 (*1)
P9 A	47 (*1)	P12	47 (*1)		

: Relay Blocks

Code	See Page	Relay Blocks (Relay Block Location)
2	24	Engine Room R/B (Engine Compartment Left)

: Junction Block and Wire Harness Connector

Code	See Page	Junction Block and Wire Harness (Connector Location)
1A	28	Engine Room Main Wire and Driver Side J/B (Lower Finish Panel)
1C		
1F	28	Floor No.2 Wire and Driver Side J/B (Lower Finish Panel)
1H	29	Instrument Panel Wire and Driver Side J/B (Lower Finish Panel)
1I		

: Connector Joining Wire Harness and Wire Harness

Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
IC1	54	Front Door LH Wire and Instrument Panel Wire (Left Kick Panel)
IE1	54	Instrument Panel Wire and Floor No.2 Wire (Left Kick Panel)
IK1	55	Front Door RH Wire and Instrument Panel Wire (Right Kick Panel)
IL1	55	Instrument Panel Wire and Floor Wire (Right Kick Panel)
IL2		
BA1	56 (*1)	Rear Door No.2 Wire and Floor No.2 Wire (Under the Left Center Pillar)
BB1	56 (*1)	Rear Door No.1 Wire and Floor Wire (Under the Right Center Pillar)
BF1	57 (*2)	Rear Door No.2 Wire and Floor No.2 Wire (Under the Left Quarter Panel)
BG1	57 (*2)	Rear Door No.1 Wire and Floor Wire (Under the Right Quarter Panel)

* 1 : Double Cab * 2 : Access Cab * 3 : Regular Cab * 4 : Separate Seat * 5 : Bench Seat

▽ : **Ground Points**

Code	See Page	Ground Points Location
IA	54	Left Kick Panel