







POWER WINDOW

SYSTEM OUTLINE

WITH THE IGNITION SW TURNED ON, CURRENT FLOWS THROUGH THE **ECU-IG** FUSE TO **TERMINAL (B)7** OF THE THEFT DETERRENT AND DOOR LOCK CONTROL ECU → **TERMINAL (B)6** → **TERMINAL 1** OF THE POWER MAIN RELAY → **TERMINAL 2** → **GROUND**, THIS ACTIVATES THE RELAY AND THE CURRENT FLOWING TO **TERMINAL 5** OF THE RELAY FROM **PWR** FUSE FLOWS TO **TERMINAL 3** OF THE RELAY → **TERMINAL 4** OF THE POWER WINDOW MASTER SW, **TERMINAL 3** 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 (DRIVER'S) IN **UP** POSITION, THE CURRENT FLOWING TO **TERMINAL 4** OF THE POWER WINDOW MASTER SW FLOWS TO **TERMINAL 10** OF THE MASTER SW → **TERMINAL 1** OF THE POWER WINDOW MOTOR LH → **TERMINAL 2** → **TERMINAL 9** OF THE MASTER SW → **TERMINAL 8** → **GROUND** AND CAUSES THE POWER WINDOW MOTOR TO ROTATE IN THE UP DIRECTION. THE WINDOW ASCENDS ONLY WHILE THE SW IS BEING PULLED UP.

IN DOWN OPERATION, THE FLOW OF CURRENT FROM **TERMINAL 4** OF THE POWER WINDOW MASTER SW TO **TERMINAL 9** OF THE MASTER SW CAUSES THE FLOW OF CURRENT FROM **TERMINAL 2** OF THE POWER WINDOW MOTOR LH → **TERMINAL 1** → **TERMINAL 10** OF THE MASTER SW → **TERMINAL 8** → **GROUND**, FLOWING IN THE OPPOSITE DIRECTION TO MANUAL UP OPERATION AND CAUSING THE MOTOR TO ROTATE IN REVERSE, LOWERING THE WINDOW.

2. DRIVER'S WINDOW AUTO DOWN OPERATION

WHEN THE DRIVER'S WINDOW SW IS PUSHED STRONGLY ON THE DOWN SIDE, THE CURRENT FLOWING TO **TERMINAL 4** OF THE POWER WINDOW MASTER SW FLOWS TO THE DOWN CONTACT POINT AND AUTO DOWN CONTACT POINT OF THE DRIVER'S SW.

THIS ACTIVATES THE RELAY (DOWN SIDE) INSIDE THE POWER WINDOW MASTER SW AND THE HOLD CIRCUIT ALSO TURNS ON AT THE SAME TIME, SO THE RELAY (DOWN SIDE) REMAINS ACTIVATED EVEN WHEN THE SW IS RELEASED.

CURRENT FLOWS AT THIS TIME FROM **TERMINAL 4** OF THE POWER WINDOW MASTER SW → **TERMINAL 9** → **TERMINAL 2** OF THE POWER WINDOW MOTOR LH → **TERMINAL 1** → **TERMINAL 10** OF THE POWER WINDOW MASTER SW → **TERMINAL 8** → **GROUND**, SO THE MOTOR CONTINUES TO OPERATE UNTIL THE DRIVER'S WINDOW IS FULLY DOWN.

WHEN THE DRIVER'S WINDOW FINISHES DOWN OPERATION THE HOLD CIRCUIT GOES OFF, SO THE RELAY (DOWN SIDE) ALSO TURNS OFF. THIS STOPS THE CURRENT FLOW FROM **TERMINAL 4** OF THE POWER WINDOW MASTER SW TO **TERMINAL 9**, SO THE POWER WINDOW MOTOR STOPS AND AUTO DOWN OPERATION STOPS.

WHEN THE DRIVER'S SW IS PULLED ON THE UP SIDE DURING AUTO DOWN OPERATION, THE HOLD CIRCUIT IS TURNED OFF SO CURRENT FLOW FROM **TERMINAL 4** OF THE POWER WINDOW MASTER SW TO **TERMINAL 9** IS CUT OFF AND THE POWER WINDOW MOTOR STOPS. IF THE SW REMAINS PULLED UP THE RELAY (UP SIDE) IS ACTIVATED, SO CURRENT FLOWS FROM **TERMINAL 4** OF THE POWER WINDOW MASTER SW → **TERMINAL 10** → **TERMINAL 1** OF THE POWER WINDOW MOTOR LH → **TERMINAL 2** → **TERMINAL 9** OF THE POWER WINDOW MASTER SW → **TERMINAL 8** → **GROUND**, THE POWER WINDOW MOTOR ROTATES IN THE UP DIRECTION AND MANUAL UP OPERATION OCCURS WHILE THE SW IS PULLED UP.

3. MANUAL OPERATION BY POWER WINDOW SW (PASSENGER'S WINDOW)

WITH POWER WINDOW SW (PASSENGER'S) PULLED TO THE UP SIDE, CURRENT FLOWING FROM **TERMINAL 4** OF THE POWER WINDOW CONTROL SW RH FLOWS TO **TERMINAL 5** OF THE POWER WINDOW CONTROL SW RH → **TERMINAL 1** OF THE POWER WINDOW MOTOR RH → **TERMINAL 2** → **TERMINAL 1** OF THE POWER WINDOW CONTROL SW → **TERMINAL 2** → **TERMINAL 7** OF THE MASTER SW → **TERMINAL 8** → **GROUND** AND CAUSES THE POWER WINDOW MOTOR RH TO ROTATE IN THE UP DIRECTION. THE UP OPERATION CONTINUES ONLY WHILE THE POWER WINDOW 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 PASSENGER'S WINDOW BECOMES OPEN.

AS A RESULT, EVEN IF OPEN/CLOSE OPERATION OF THE PASSENGER'S WINDOW IS TRIED, THE CURRENT FROM **TERMINAL 8** OF THE POWER WINDOW MASTER SW IS NOT GROUNDED AND THE MOTOR DOES NOT ROTATE, SO THE PASSENGER'S WINDOW CAN NOT BE OPERATED AND WINDOW LOCK OCCURS.

4. KEY OFF POWER WINDOW OPERATION

WITH THE IGNITION SW TURNED FROM ON TO OFF, THE THEFT DETERRENT AND DOOR LOCK CONTROL ECU OPERATES AND CURRENT FLOWS FROM **DOOR** FUSE TO **TERMINAL (B)9** OF THE ECU OR **DOVE** FUSE TO **TERMINAL (A)1** OF THE ECU → **TERMINAL (B)6** → **TERMINAL 1** OF THE POWER MAIN RELAY → **TERMINAL 2** → **GROUND** FOR ABOUT 60 SECONDS. THE SAME AS NORMAL OPERATION, THE CURRENT FLOWS FROM **PWR** FUSE → **TERMINAL 5** OF THE POWER MAIN RELAY → **TERMINAL 3** → **TERMINAL 4** OF THE POWER WINDOW MASTER SW AND **TERMINAL 3** OF THE POWER WINDOW CONTROL SW. AS A RESULT, FOR ABOUT 60 SECONDS AFTER THE IGNITION SW IS TURNED OFF, THE FUNCTIONING OF THIS RELAY MAKES IT POSSIBLE TO RAISE AND LOWER THE POWER WINDOW. ALSO, BY OPENING THE FRONT DOOR (DOOR OPEN DETECTION SW ON) WITHIN ABOUT 60 SECONDS AFTER TURNING THE IGNITION SW TO OFF, A SIGNAL IS INPUT TO **TERMINALS (A)7** OR **(A)19** OF THE THEFT DETERRENT AND DOOR LOCK CONTROL ECU. AS A RESULT, THE ECU TURNED OFF AND UP AND DOWN MOVEMENT OF THE POWER WINDOW STOPS.

SERVICE HINTS

P 8 POWER WINDOW MASTER SW AND DOOR LOCK CONTROL SW LH

- 4-GROUND : APPROX. 12 VOLTS WITH IGNITION SW AT **ON** POSITION
- 8-GROUND : ALWAYS CONTINUITY
- 10-GROUND : APPROX. 12 VOLTS WITH IGNITION SW **ON** AND MASTER SW (DRIVER'S WINDOW) AT **UP** POSITION
- 9-GROUND : APPROX. 12 VOLTS WITH IGNITION SW **ON** AND MASTER SW (DRIVER'S WINDOW) 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
D16	32	P 8	33	T7	B 31
D17	32	P 9	33	T 8	A 31
P 7	33	P10	33		

○ : RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	19	R/B NO.2 (ENGINE COMPARTMENT LEFT)

○ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1B	20	ENGINE ROOM MAIN WIRE AND J/B NO.1 (LEFT KICK PANEL)
1D	20	FRONT DOOR LH WIRE AND J/B NO.1 (LEFT KICK PANEL)
1H	20	COWL WIRE AND J/B NO.1 (LEFT KICK PANEL)
1I		
1J		
1K		

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
IF2	40	FRONT DOOR LH WIRE AND COWL WIRE (LEFT KICK PANEL)
IP1	42	FRONT DOOR RH WIRE AND COWL WIRE (RIGHT KICK PANEL)

▽ : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
IF	40	LEFT KICK PANEL
IJ	40	RIGHT KICK PANEL

○ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
B 1	44	FRONT DOOR LH WIRE			

