

POWER WINDOW

SYSTEM OUTLINE

WITH THE IGNITION SW TURNED ON, CURRENT FLOWS THROUGH THE **ECU-IG FUSE** → **TERMINAL (A)2** OF THE THEFT DETERRENT ECU → **(B)8** → **TERMINAL 2** OF THE POWER MAIN RELAY → **TERMINAL 3** → TO **GROUND**, THIS ACTIVATES THE RELAY AND THE CURRENT FLOWING TO **TERMINAL 4** OF THE RELAY FROM **POWER FUSE** FLOWS TO **TERMINAL 1** OF THE RELAY → **TERMINAL 4** OF THE POWER WINDOW MASTER SW, **TERMINAL 3** OF THE POWER WINDOW 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 → **TERMINAL 2** → **TERMINAL 9** OF THE MASTER SW → **TERMINAL 8** → 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 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 MOTOR → **TERMINAL 1** → **TERMINAL 10** OF THE MASTER SW → **TERMINAL 8** → TO **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 POWER WINDOW MOTOR → MOTOR → **TERMINAL 1** → **TERMINAL 10** OF 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 POWER WINDOW MOTOR → MOTOR → **TERMINAL 2** → **TERMINAL 9** → **TERMINAL 8** → **GROUND**, THE POWER WINDOW MOTOR ROTATES IN THE UP DIRECTION AND MANUAL UP OPERATION OCCURS WHILE THE SWITCH 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 3** OF THE POWER WINDOW CONTROL SW FLOWS TO **TERMINAL 5** OF THE POWER WINDOW SW → **TERMINAL 1** OF THE POWER WINDOW MOTOR → **TERMINAL 2** → **TERMINAL 1** OF THE POWER WINDOW SW → **TERMINAL 2** → **TERMINAL 7** OF THE MASTER SW → **TERMINAL 8** → TO **GROUND** AND CAUSES THE POWER WINDOW MOTOR (PASSENGER'S) TO ROTATE IN THE UP DIRECTION. 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 GROUNDING 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 ECU OPERATES AND CURRENT FLOWS FROM **DOOR FUSE** TO **TERMINAL (A)8** OF THE ECU OR **DOME FUSE** TO **TERMINAL (A)20** OF THE ECU → **TERMINAL (B)8** → **TERMINAL 2** OF POWER MAIN RELAY → **TERMINAL 3** → TO **GROUND** FOR ABOUT 60 SECONDS. THE SAME AS NORMAL OPERATION, THE CURRENT FLOWS FROM **POWER FUSE** → **TERMINAL 4** OF THE POWER MAIN RELAY → **TERMINAL 1** → **TERMINAL 4** OF THE POWER WINDOW MASTER SW AND **TERMINAL 5** OF THE POWER WINDOW 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 DETECT SW ON) WITHIN ABOUT 60 SECONDS AFTER TURNING THE IGNITION SW TO OFF, A SIGNAL IS INPUT TO **TERMINALS (A)12** OR **(A)13** OF THEFT DETERRENT ECU. AS A RESULT, THE ECU TURNS OFF AND UP AND DOWN MOVEMENT OF THE POWER WINDOW STOPS.

SERVICE HINTS

P 5 POWER WINDOW MASTER 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
D10	29	P 5	29	T 8	B 29
D11	29	P 6	29	T 9	A 29
P 4	29	P 7	29		

○ : RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	19	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
1D	20	FRONT DOOR LH WIRE
1H	20	COWL WIRE
1I		
1J		
1K		

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
IF2	36	FRONT DOOR LH WIRE AND COWL WIRE (LEFT KICK PANEL)
IP1	38	FRONT DOOR RH WIRE AND COWL WIRE (RIGHT KICK PANEL)

▽ : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
IF	36	LEFT KICK PANEL
IJ	36	RIGHT KICK PANEL

○ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
B 4	40	FRONT DOOR LH WIRE			

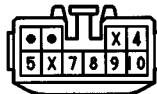
D10, D11 GRAY



P 4



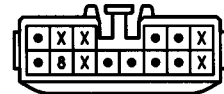
P 5



P 6, P 7



T 8 ⑥ ORANGE



T 9 ① ORANGE

