

SERVICE HINTS

D15 DOOR LOCK ECU

- 2-GROUND : ALWAYS APPROX. **12** VOLTS
- 11-GROUND : ALWAYS CONTINUITY
- 8-GROUND : APPROX. **12** VOLTS WITH IGNITION SW AT **ON** POSITION
- 7, 14-GROUND : CONTINUITY WITH DOOR OPEN
- 5-GROUND : APPROX. **12** VOLTS WITH IGNITION SW ON AND STAYS AT **12** VOLTS FOR **60** SECONDS AFTER THE IGNITION SW IS TURNED OFF, BUT IF A DOOR IS OPENED IN THIS **60** SECONDS PERIOD, VOLTAGE WILL DROP TO **0** VOLTS

D13, D14 DOOR COURTESY SW

- 1-GROUND : CONTINUITY WITH DOOR OPENED

P 4 POWER WINDOW CONTROL SW (PASSENGER'S)

- 4-GROUND : APPROX. **12** VOLTS WITH IGNITION SW ON AND STAYS AT **12** VOLTS FOR **60** SECONDS AFTER THE IGNITION SW IS TURNED OFF, BUT IF A DOOR IS OPENED IN THIS **60** SECONDS PERIOD, VOLTAGE WILL DROP TO **0** VOLTS

P 5 POWER WINDOW MASTER SW

- 6-GROUND : ALWAYS CONTINUITY
- 9-GROUND : APPROX. **12** VOLTS WITH IGNITION SW ON AND STAYS AT **12** VOLTS FOR **60** SECONDS AFTER THE IGNITION SW IS TURNED OFF, BUT IF A DOOR IS OPENED IN THIS **60** SECONDS PERIOD, VOLTAGE WILL DROP TO **0** VOLTS
- 3-GROUND : APPROX. **12** VOLTS WITH IGNITION SW AT **ON** POSITION AND MASTER SW AT **UP** POSITION
- 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
D10	24	I11	24	P 7	25
D13	24	P 4	25	R10	24
D14	24	P 5	25		
D15	24	P 6	25		



: JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1D	20	COWL WIRE AND J/B NO.1 (LEFT KICK PANEL)



: CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
IC2	28	DOOR LEFT WIRE AND COWL WIRE (LEFT KICK PANEL)
IF2	28	DOOR RIGHT WIRE AND COWL WIRE (RIGHT KICK PANEL)



: GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
IE	28	LEFT KICK PANEL



: SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I 7	28	COWL WIRE	I11	28	COWL WIRE
I 9					



SYSTEM OUTLINE

WITH THE IGNITION SW TURNED ON, CURRENT FLOWS THROUGH THE **GAUGE** FUSE TO **TERMINAL 8** OF THE DOOR CONTROL REALY → **TERMINAL 11** → TO **GROUND**. THIS ACTIVATES THE ECU AND THE CURRENT FLOWING TO **TERMINAL 2** OF THE ECU FROM **POWER** FUSE FLOWS TO **TERMINAL 5** OF THE ECU → **TERMINAL 9** OF THE POWER WINDOW MASTER SW → TO **TERMINAL 4** OF THE POWER WINDOW SW.

1. MANUAL UP 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 9** OF THE POWER WINDOW MASTER SW FLOWS TO **TERMINAL 3** → **TERMINAL 2** OF THE POWER WINDOW MOTOR → **TERMINAL 1** → **TERMINAL 4** OF THE MASTER SW → **TERMINAL 6** → 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 9** OF THE POWER WINDOW MASTER SW TO **TERMINAL 4** CAUSES THE FLOW OF CURRENT FROM **TERMINAL 1** OF THE MOTOR → **TERMINAL 2** → **TERMINAL 3** OF THE MASTER SW → **TERMINAL 6** → TO **GROUND**, FLOWING IN THE OPPOSITE DIRECTION TO MANUAL UP OPERATION AND CAUSING THE MOTOR TO ROTATE IN REVERSE, LOWERING THE WINDOW.

2. AUTO DOWN OPERATION

WITH THE IGNITION SW ON AND WITH THE AUTO SW OF THE POWER WINDOW MASTER SW IN **DOWN** POSITION, CURRENT FLOWING TO **TERMINAL 9** OF THE MASTER SW FLOWS TO **TERMINAL 4** OF THE MASTER SW → **TERMINAL 1** OF THE POWER WINDOW MOTOR → **TERMINAL 2** → **TERMINAL 3** OF THE MASTER SW → **TERMINAL 6** → 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 FLOW BETWEEN **TERMINAL 3** OF THE MASTER SW AND **TERMINAL 6** INCREASES. AS A RESULT, THE SOLENOID STOPS OPERATING, THE AUTO SW TURNS OFF AND FLOW FROM **TERMINAL 9** OF THE MASTER SW TO **TERMINAL 4** 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 3** OF THE MASTER SW → TO **TERMINAL 6**, 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 (PASSENGER'S)

WITH POWER WINDOW SW (PASSENGER'S) PUSHED TO THE UP SIDE, CURRENT FLOWING FROM **TERMINAL 4** OF THE POWER WINDOW SW FLOWS TO **TERMINAL 3** OF THE POWER WINDOW SW → **TERMINAL 2** OF THE POWER WINDOW MOTOR → **TERMINAL 1** → **TERMINAL 1** OF THE POWER WINDOW SW → **TERMINAL 2** → **TERMINAL 7** OF THE MASTER SW → **TERMINAL 6** → TO **GROUND** AND CAUSES THE POWER WINDOW MOTOR (PASSENGER'S) TO ROTATE IN THE UP DIRECTION. UP OPERATIONS ONLY WHILE THE POWER WINDOW SW 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 PASSENGER'S WINDOW BECOMES OPEN. AS A RESULT, EVEN IF OPEN/CLOSE OPERATION OF THE PASSENGER'S WINDOW IS TRIED, THE CURRENT FROM **TERMINAL 6** 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.

5. KEY OFF POWER WINDOW OPERATION

WITH THE IGNITION SW TURNED FROM ON TO OFF, THE ECU OPERATES AND CURRENT FLOWS FROM **TERMINAL 2** → **TERMINAL 11** → TO **GROUND** FOR ABOUT **60** SECONDS. THE SAME AS NORMAL OPERATION, THE CURRENT FLOWS FROM **TERMINAL 2** OF THE DOOR LOCK ECU → **TERMINAL 5** → **TERMINAL 9** OF THE POWER WINDOW MASTER SW AND FROM **TERMINAL 5** OF THE DOOR LOCK ECU → TO **TERMINAL 4** OF POWER WINDOW SW. AS A RESULT, FOR ABOUT **60** SECONDS AFTER THE IGNITION SW IS TURNED OFF, IT IS POSSIBLE TO RAISE AND LOWER THE POWER WINDOW BY THE FUNCTIONING OF THIS RELAY. ALSO, BY OPENING THE DOOR (DOOR COURTESY SW ON) WITHIN ABOUT **60** SECONDS AFTER TURNING THE IGNITION SW TO OFF, A SIGNAL IS INPUT TO **TERMINAL 14** OR **7** OF DOOR LOCK ECU. AS A RESULT, THE RELAY TURNS OFF AND UP AND DOWN MOVEMENT OF THE WINDOW STOPS.