

POWER TILT AND POWER TELESCOPIC

SYSTEM OUTLINE

THIS SYSTEM OPERATES WITH BOTH THE TILT FUNCTION AND TELESCOPIC FUNCTION DRIVER AUTOMATICALLY BY THE MOTOR AND CONTROLLED BY THE ECU. THE STEERING CAN BE ADJUSTED STEPLESSLY FORWARD AND BACK, AND UP AND DOWN, AND ALSO TO PROVIDE THE MOST SUITABLE STEERING POSITION FOR EASY DRIVING, AND AUTOMATIC MOVEMENT OF THE STEERING TO A POSITION WHICH FACILITATES GETTING IN AND OUT OF THE VEHICLE.

THE DRIVER CAN HAVE THE MOST APPROPRIATE DRIVING POSITION MEMORIZED BY OPERATING THE POWER SEAT, REMOTE CONTROL MIRROR AND SEAT BELT ANCHORAGE (DRIVER'S) TOGETHER WITH THE TILT AND POWER TELESCOPIC STEERING.

CURRENT IS ALWAYS APPLIED THROUGH THE POWER CB TO **TERMINAL +B** OF TILT AND POWER TELESCOPIC ECU AND THROUGH THE DOME FUSE TO **TERMINAL ECUB** OF TILT AND POWER TELESCOPIC ECU.

WITH THE IGNITION SW TURNED ON, THE CURRENT FLOWS FROM ECU-IG FUSE TO **TERMINAL IG** AND FROM GAUGE FUSE TO **TERMINAL 9** OF A/T INDICATOR SW.

1. MANUAL TILT OPERATION

WHEN THE IGNITION KEY IS INSERTED INTO THE IGNITION KEY CYLINDER (UNLOCK WARNING SW ON), A SIGNAL IS INPUT TO **TERMINAL UWSW** OF TILT AND POWER TELESCOPIC ECU. IF THE MANUAL SW IS PUSHED TO THE "TILT UP" SIDE, CURRENT FLOWS FROM **TERMINAL VC** OF TILT AND POWER TELESCOPIC ECU TO **TERMINAL NSW** OF TILT AND POWER TELESCOPIC ECU PASSING THROUGH THE MANUAL SW. (THE ECU DETECTS THE MANUAL SW POSITION BY THE VOLUME OF CURRENT.)

AS A RESULT, TILT AND POWER TELESCOPIC ECU OPERATES AND THE CURRENT TO **TERMINAL +B** OF ECU FLOWS FROM **TERMINAL TIM+** → **TERMINAL (B) 4** OF COMB. SW → **TERMINAL 2** OF TILT CONTROL MOTOR → **TERMINAL 1** → **TERMINAL (C) 20** OF COMB. SW → **TERMINAL TIM-** OF TILT AND POWER TELESCOPIC ECU → **TERMINAL GND** → **GROUND**, AND THE TILT UP FUNCTION OPERATES AS LONG AS THE MANUAL SW IS PUSHED TO THE "TILT UP" SIDE.

FOR "TILT DOWN" OPERATION, WHEN THE MANUAL SW IS PUSHED TO THE DOWN SIDE, THE CURRENT FLOWING FROM ECU TO MOTOR FLOWS TO **TERMINAL TIM-** OF TILT AND POWER TELESCOPIC ECU → **TERMINAL (C) 20** OF COMB. SW → **TERMINAL 1** OF TILT CONTROL MOTOR → **TERMINAL 2** → **(B) 4** OF COMB. SW → **TERMINAL TIM+** OF TILT AND POWER TELESCOPIC ECU, SO THE MOTOR ROTATES IN THE REVERSE DIRECTION TO TILT UP OPERATION, AND TILT DOWN OPERATION OCCURS ONLY WHILE THE MANUAL SW IS BEING PUSHED.

2. MANUAL TELESCOPIC OPERATION

WHEN THE IGNITION KEY IS INSERTED INTO THE IGNITION KEY CYLINDER (UNLOCK WARNING SW ON), A SIGNAL IS INPUT TO **TERMINAL UWSW** OF TILT AND TELESCOPIC ECU. WHEN THE MANUAL SW IS PUSHED TOWARD "TELESCOPIC SHORT" SIDE, CURRENT FLOWS FROM **TERMINAL VC** OF TILT AND POWER TELESCOPIC ECU TO **TERMINAL MSW** OF TILT AND POWER TELESCOPIC ECU THROUGH THE MANUAL SW.

AS A RESULT, THE TILT AND POWER TELESCOPIC ECU OPERATES AND THE CURRENT TO **TERMINAL +B** OF TILT AND POWER TELESCOPIC ECU FLOWS FROM **TERMINAL TEM+** OF TILT AND POWER TELESCOPIC ECU → **TERMINAL (D) 1** OF COMB. SW → **TERMINAL 2** OF TELESCOPIC CONTROL MOTOR → **TERMINAL 1** → **TERMINAL (D) 4** OF COMB. SW → **TERMINAL TEM-** OF TILT AND POWER TELESCOPIC ECU → **TERMINAL GND** → **GROUND**, AND "TELESCOPIC SHORT" OPERATION OCCURS AS LONG AS THE MANUAL SW IS PUSHED TO THE "TELESCOPIC SHORT" SIDE.

FOR "TELESCOPIC LONG" OPERATION, WHEN THE MANUAL SW IS PUSHED TO THE TELESCOPIC LONG SIDE, CURRENT FLOWING FROM TILT AND POWER TELESCOPIC ECU TO THE MOTOR FLOWS THROUGH **TERMINAL TEM** OF TILT AND POWER TELESCOPIC ECU → **TERMINAL (D) 4** OF COMB. SW → **TERMINAL 1** OF TELESCOPIC CONTROL MOTOR → **TERMINAL 2** → **TERMINAL (D) 1** OF COMB. SW → **TERMINAL TEM+** OF TILT AND POWER TELESCOPIC ECU → **TERMINAL GND** → **GROUND**.

AS A RESULT, THE MOTOR ROTATES IN REVERSE TO THE TELESCOPIC SHORT MODE AND TELESCOPIC LONG OPERATION OCCURS AS LONG AS THE MANUAL SW IS PUSHED TO THE "TELESCOPIC LONG" SIDE.

3. AUTO AWAY OPERATION

WHEN THE IGNITION SW IS TURNED FROM ON TO OFF, THE CURRENT STOPS FLOWING FROM ECU-IG TO **TERMINAL IG** OF TILT AND POWER TELESCOPIC ECU AND IS INPUT AS A SIGNAL THAT THE IGNITION SW IS OFF. WHEN THE AUTO SW IS TURNED ON, AN "AUTO SW ON" IS INPUT TO **TERMINAL ASW** OF TILT AND POWER TELESCOPIC ECU.

IF THE IGNITION KEY IS REMOVED FROM THE IGNITION KEY CYLINDER (UNLOCK WARNING SW OFF) AT THIS TIME, A SIGNAL IS INPUT FROM **TERMINAL UWSW** OF TILT AND POWER TELESCOPIC ECU. ALSO, THE TILT POSITION SENSOR (COMB. SW) INPUTS INTO **TERMINAL TIS** OF THE TILT AND TELESCOPIC ECU A SIGNAL OF THE STEERING TILT POSITION JUST BEFORE THE IGNITION SW (FOR UNLOCK WARNING) IS TURNED FROM ON TO OFF.

AS A RESULT, THE TILT AND POWER TELESCOPIC ECU OPERATES AND THE CURRENT TO **TERMINAL +B** OF TILT AND POWER TELESCOPIC ECU FLOWS FROM **TERMINAL TIM+** OF TILT AND POWER TELESCOPIC ECU → **TERMINAL (B) 4** OF COMB. SW → **TERMINAL 2** OF TILT CONTROL MOTOR → **TERMINAL 1** → **TERMINAL (C) 20** OF COMB. SW → **TERMINAL TIM-** OF TILT AND POWER TELESCOPIC ECU → **TERMINAL GND** → **GROUND**, CAUSING THE MOTOR TO ROTATE SO THAT "TILT UP" OPERATION OCCURS AUTOMATICALLY.

AT A SAME TIME, THE CURRENT FROM **TERMINAL +B** OF TILT AND POWER TELESCOPIC ECU TO **TERMINAL TEM+** FLOWS FROM **TERMINAL (D) 1** OF COMB. SW → **TERMINAL 2** OF TELESCOPIC CONTROL MOTOR → **TERMINAL 1** → **(D) 4** OF COMB. SW → **TERMINAL TEM-** OF TILT AND POWER TELESCOPIC ECU → **TERMINAL GND** → **GROUND**, CAUSING THE MOTOR TO ROTATE SO THAT TELESCOPIC SHORT OPERATION OCCURS ON AUTO AND WITH TILT UP OPERATION OCCURRING SIMULTANEOUSLY ON AUTO, AUTO AWAY OPERATION OCCURS.

4. AUTO RETURN OPERATION

WHEN THE STEERING IS IN "AUTO AWAY" CONDITION AND THE IGNITION KEY IS INSERTED INTO THE IGNITION KEY CYLINDER (UNLOCK WARNING SW ON), A SIGNAL IS INPUT TO **TERMINAL UWSW** OF TILT AND POWER TELESCOPIC ECU.

AS A RESULT, THE TILT AND POWER TELESCOPIC ECU OPERATES AND THE CURRENT TO **TERMINAL +B** OF TILT AND POWER TELESCOPIC ECU FLOWS FROM **TERMINAL TEM-** OF TILT AND POWER TELESCOPIC ECU → **TERMINAL (D) 4** OF COMB. SW → **TERMINAL 1** OF TELESCOPIC CONTROL MOTOR → **TERMINAL 2** → **TERMINAL (D) 1** OF COMB. SW → **TERMINAL TEM+** OF TILT AND POWER TELESCOPIC ECU → **TERMINAL GND** → **GROUND**, AND AT THE SAME TIME, CURRENT FLOWS FROM **TERMINAL TIM-** OF TILT AND POWER TELESCOPIC ECU → **TERMINAL (C) 20** OF COMB. SW → **TERMINAL 1** OF TILT CONTROL MOTOR → **TERMINAL 2** → **TERMINAL (B) 4** OF COMB. SW > **TERMINAL TIM+** OF TILT AND POWER TELESCOPIC ECU → **TERMINAL GND** → **GROUND**, CAUSING BOTH THE TILT CONTROL MOTOR AND TELESCOPIC CONTROL MOTOR TO ROTATE, THE MOTORS CONTINUE TO ROTATE UNTIL THE SIGNALS INPUT FROM THE TILT POSITION SENSOR TO **TERMINAL TIS** OF TILT AND POWER TELESCOPIC ECU AND FROM THE TELESCOPIC POSITION SENSOR **TERMINAL TES** OF TILT AND POWER TELESCOPIC ECU (SIGNALS INFORMING THE ECU OF THE CURRENT POSITION OF THE STEERING.) MATCH THE POSITION MEMORIZED BY THE ECU PRIOR TO AUTO AWAY OPERATION.

IN THIS WAY, THE STEERING POSITION IS AUTOMATICALLY RETURNED TO THE ORIGINAL POSITION.

WHEN THE IGNITION SW IS TURNED FROM OFF TO ON OR THE SHIFT LEVER IS SHIFTED TO A POSITION OTHER THAN P OR N, AUTO OPERATION IS STOPPED.

SERVICE HINTS

C15 (C), C16 (B), C17 (A) TILT AND POWER TELESCOPIC UNIT (COMB. SW)

- (A) 3- (A) 5 : APPROX. **180Ω** WITH TELESCOPIC LONG OPERATION
- : APPROX. **380Ω** WITH TILT UP OPERATION
- : APPROX. **920Ω** WITH TELESCOPIC SHORT OPERATION
- : APPROX. **2.1KΩ** WITH TILT DOWN OPERATION

(A) 2- (A) 6 : CONTINUITY WITH AUTO SW ON

(A) 2- (A) 3 : APPROX. **5KΩ**

T 9 (D) TELESCOPIC POSITION SENSOR

(D) 6- (D) 3 : APPROX. **5KΩ**

D 7 DOOR COURTESY SW FRONT LH

1-GROUND : CLOSED WITH FRONT DOOR LH OPEN

D18 DRIVING POSITION MEMORY AND RETURN SW

7-3 : CLOSED WITH DRIVING POSITION MEMORY SW (NO.1) ON

6-3 : CLOSED WITH DRIVING POSITION MEMORY SW (NO.2) ON

4-3 : CLOSED WITH DRIVING POSITION MEMORY SW (SET) ON

I16 UNLOCK WARNING SW (IGNITION SW)

9-10 : CLOSED WITH IGNITION KEY IN CYLINDER

N 1 A/T INDICATOR SW [NEUTRAL START SW]

9-1 : CLOSED WITH SHIFT LEVER AT **P** OR **N** POSITION

T13 (B), T14 (A) TILT AND POWER TELESCOPIC ECU

(A) 4-GROUND : ALWAYS APPROX. **12 VOLTS**

(A) 1-GROUND : APPROX. **12 VOLTS** WITH IGNITION SW AT **ON** POSITION

(B) 18-GROUND : ALWAYS APPROX. **12 VOLTS**

(A) 6-GROUND : APPROX. **12 VOLTS** WITH IGNITION SW ON AND SHIFT LEVER AT "P" OR "N" RANGE

(B) 10-GROUND : CONTINUITY WITH IGNITION KEY IN CYLINDER

(A) 7-GROUND : ALWAYS CONTINUITY

(B) 8-GROUND : ALWAYS CONTINUITY

(B) 2-GROUND : CONTINUITY WITH FRONT DOOR LH OPEN

(B) 3-GROUND : CONTINUITY WITH DRIVING POSITION MEMORY SW (NO.1) ON

(B) 12-GROUND : CONTINUITY WITH DRIVING POSITION MEMORY SW (NO.2) ON

(B) 11-GROUND : CONTINUITY WITH DRIVING POSITION MEMORY SW (SET) ON

(A) 10-GROUND : APPROX. **12 VOLTS** WITH TILT UP OPERATION

(A) 3-GROUND : APPROX. **12 VOLTS** WITH TILT DOWN OPERATION

(A) 2-GROUND : APPROX. **12 VOLTS** WITH TELESCOPIC SHORT OPERATION

(A) 11-GROUND : APPROX. **12 VOLTS** WITH TELESCOPIC LONG OPERATION

POWER TILT AND POWER TELESCOPIC

○ : PARTS LOCATION

CODE		SEE PAGE	CODE		SEE PAGE	CODE		SEE PAGE
C15	C	26	D18	28	P13		30	
C16	B	26	I16	26	T 9	D	27	
C17	A	26	J 1	27	T13	B	27	
D 7		28	N 1	25	T14	A	27	

○ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1A	18	COWL WIRE AND J/B NO.1 (LEFT SIDE OF STEERING COLUMN TUBE)
1D		
1G		
2B	20	COWL WIRE AND J/B NO.2 (ENGINE COMPARTMENT LEFT)
4A	23	COWL WIRE AND J/B NO.4 (BEHIND THE COMBINATION METER)

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
IG1	34	FRONT DOOR LH WIRE AND COWL WIRE (LEFT KICK PANEL)
IG2		
IH2	34	INSTRUMENT PANEL WIRE AND COWL WIRE (BEHIND GLOVE BOX)
IL3	36	ENGINE WIRE AND COWL WIRE (UNDER THE GLOVE BOX)
BQ1	38	COWL WIRE AND FLOOR NO.2 WIRE (LEFT KICK PANEL)
BQ2		
BS1	40	FLOOR NO.2 WIRE AND FRONT SEAT LH WIRE (UNDER THE FRONT LH SEAT)

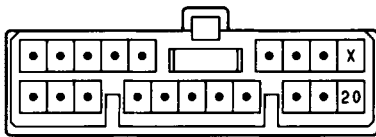
▽ : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
IE	34	LEFT KICK PANEL
IH	34	RIGHT KICK PANEL

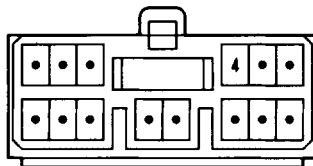
○ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I20	36	COWL WIRE	I68	36	COWL WIRE
I36			I85		
I46			I86		
I51			I87		
I54			I88		
I58					

C15 (C) BLACK



C16 (B) BLACK



C17 (A)



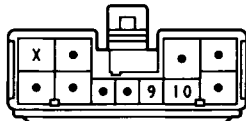
D 7



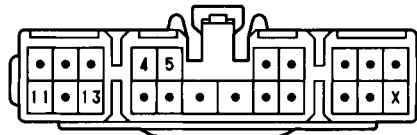
D18



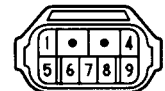
I16 BLACK



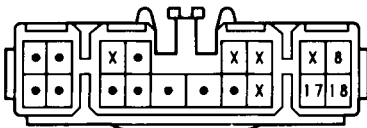
J 1



N 1 GRAY



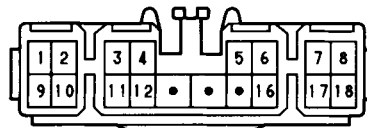
P13



T 9 (D)



T13 (B)



T14 (A)

