SYSTEM OUTLINE

The cruise control system allows the driver to control the vehicle speed at a constant speed, such as on a high way, without depressing the accelerator pedal. By operating the SW, the engine throttle valve is automatically adjusted to control the vehicle speed at a constant speed.

1. SET OPERATION

The actual vehicle speed is compared with the memorized vehicle speed, and when the actual vehicle speed is faster than the memorized speed, a signal is output to rotate the electronic throttle motor to close the throttle valve. When the actual vehicle speed is slower than the memorized speed, a signal is output to rotate the electronic throttle motor to open the throttle valve.

2. SET SPEED CONTROL

While traveling (within the set speed limit) with the main SW on (power indicator on), the speed when the SET/COAST SW is operated to off is memorized and the vehicle is controlled at that speed.

3. COAST CONTROL

When the SET/COAST SW is operated to on during cruise control driving, the cruise control opening angle requirement is controlled to 0 to decrease the vehicle speed (however the throttle valve itself is not fully closed due to ISC etc.), and the speed when the SW is operated to off is memorized, and the vehicle is controlled at that speed. Furthermore, every time the SET/COAST SW is operated to on momentarily (approximately 0.5 seconds), the memorized vehicle speed is decreased by approximately 1.5km/h.In case of tap down operation where the difference between the memorized vehicle speed and the actual vehicle speed is more than 5km/h, the speed when the SW is operated to off is memorized, and the vehicle is controlled at that speed.

4. ACCEL CONTROL

When the RESUME/ACCEL SW is operated to on during cruise control driving, the electronic throttle motor is rotated so that the throttle valve opens to increase the vehicle speed, and the speed when the SW is operated to off is memorized, and the vehicle is controlled at that speed.
Furthermore, every time the RESUME/ACCEL SW is operated to on momentarily (approximately 0.5 seconds), the memorized vehicle speed is increased by approximately 1.5km/h.
In case of tap up operation where the difference between the memorized vehicle speed and the actual vehicle speed is more than 5km/h, the memorized speed will not be changed.

5. MANUAL CANCEL MECHANISM

If any of the following signals are input during cruise control driving, the current to the motor flows in the direction to close the throttle valve, and the cruise control is canceled. (Vehicle speed memory will not be not erased)

* Stop light SW is on (Brake pedal is depressed)
* D position circuit in the neutral start SW is turned from on to off

(Shift position is changed from D to N, 2, or 1)

* The CANCEL SW of the control SW is on
* The main SW is off (Vehicle speed memory will be erased)

6. RESUME CONTROL

After canceling the cruise control (except when the main SW is off) if the vehicle speed is above the minimum speed limit (approximately 40km/h, 25mph) operating the RESUME/ACCEL SW from off to on will cause the system to accelerate to resume the vehicle speed before manual cancellation.

7. OVERDRIVE CONTROL FUNCTION

During cruise control driving, the overdrive may be cut on an uphill grade.
After the overdrive is cut, if the vehicle speed reaches the overdrive resume speed (set speed minus 2km/h), and if the system determines that the uphill grade has finished, the overdrive will resume after overdrive resume timer operation. However, if the actual vehicle speed becomes slower than the overdrive resume speed before the timer operation has finished, the timer will be reset, and will start again when the vehicle speed reaches the overdrive resume speed.

8. AUTO CANCEL OPERATION

(1) If any of the following conditions are detected, the set speed is erased and the control is canceled.
At this time, the power indicator will blink, and control of the system will be prohibited until the main SW is turned on again.

* Disconnection and/or short in the stop light SW
* Failure in the vehicle speed signal
* Failure in the electronic throttle parts

(2) If any of the following conditions are detected, the set speed is erased and the control is canceled.
At this time, the power indicator will blink, and control of the system will be prohibited until the ignition SW is turned off.

* Failure in the stop light SW input circuit
* Failure in the cancel circuit

(3) If any of the following conditions are detected, the set speed is erased and the control is canceled. (Reset is possible)

* The actual speed becomes slower than the minimum speed limit.
* The actual speed becomes –16km/h slower than the set speed.

SERVICE HINTS

E2 (A), E3 (B), E4 (C), E5 (D), E6 (E) ENGINE AND ECT ECU

(A) 9–GROUND : Approx. **12** volts with ignition SW at **ON** or **ST** position
(A) 1–GROUND : Always approx. **12** volts
(A) 22, (D)17, (E) 9, (E)21, (E)29, (E)31–GROUND : Always continuity
(B) 6–GROUND : Approx. **12** volts with stop light SW at on
(B)22–GROUND : Continuity with cruise control main SW at on
Approx. **1540** Ω with CANCEL SW on in cruise control SW
Approx. **240** Ω with RES/ACC SW on in cruise control SW
Approx. **630** Ω with SET/COAST SW on in cruise control SW

C13 CRUISE CONTROL SW [COMB. SW]

5–4 : Approx. **1540** Ω with CANCEL SW on
Approx. **240** Ω with RES/ACC SW on
Approx. **630** Ω with SET/COAST SW on

○ : PARTS LOCATION

Code		See Page	Code		See Page	Code	See Page
A9		96 (LHD)	E4	C	96 (LHD)	J9	99 (LHD)
		104 (RHD)			104 (RHD)		107 (RHD)
A14	A	98 (LHD)	E5	D	96 (LHD)	N1	97 (LHD)
		106 (RHD)			104 (RHD)		105 (RHD)
A15	B	98 (LHD)	E6	E	96 (LHD)	S2	97 (LHD)
		106 (RHD)			104 (RHD)		105 (RHD)
B6	A	98 (LHD)	J1	A	97 (LHD)	S3	97 (LHD)
		106 (RHD)			105 (RHD)		105 (RHD)
C10		98 (LHD)		B	97 (LHD)	S11	99 (LHD)
		106 (RHD)			105 (RHD)		107 (RHD)
C13		98 (LHD)	J2	A	97 (LHD)	T1	97 (LHD)
		106 (RHD)			105 (RHD)		105 (RHD)
D2		106 (RHD)	J3	B	97 (LHD)	T2	97 (LHD)
E2	A	96 (LHD)			105 (RHD)		105 (RHD)
		104 (RHD)	J4		97 (LHD)	T5	107 (RHD)
E3	B	96 (LHD)			105 (RHD)		
		104 (RHD)	J5		107 (RHD)		

: RELAY BLOCKS

Code	See Page	Relay Blocks (Relay Block Location)
1	80 (LHD)	Engine Room No.1 R/B (Engine Compartment Right)
	81 (RHD)	Engine Room No.1 R/B (Engine Compartment Left)
2	80 (LHD)	Engine Room No.2 R/B (Engine Compartment Right)
	81 (RHD)	Engine Room No.2 R/B (Engine Compartment Left)

: JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

Code	See Page	Junction Block and Wire Harness (Connector Location)
1A	88 (RHD)	Engine Room Main Wire and Driver Side J/B (Right Kick Panel)
1E	82 (LHD)	Instrument Panel Wire and Driver Side J/B (Left Kick Panel)
	88 (RHD)	Instrument Panel Wire and Driver Side J/B (Right Kick Panel)
1G	82 (LHD)	Engine Room Main Wire and Driver Side J/B (Left Kick Panel)
	88 (RHD)	Instrument Panel Wire and Driver Side J/B (Right Kick Panel)
1H	88 (RHD)	Instrument Panel Wire and Driver Side J/B (Right Kick Panel)
1K	82 (LHD)	Engine Room Main Wire and Driver Side J/B (Left Kick Panel)
2A	84 (LHD)	Engine Room Main Wire and Passenger Side J/B (Right Kick Panel)
2B	84 (LHD)	Engine Room Main Wire and Passenger Side J/B (Right Kick Panel)
	90 (RHD)	Front Door LH Wire and Passenger Side J/B (Left Kick Panel)
2G	84 (LHD)	Instrument Panel Wire and Passenger Side J/B (Right Kick Panel)
	90 (RHD)	Engine Room Main Wire and Passenger Side J/B (Left Kick Panel)
2H	90 (RHD)	Instrument Panel Wire and Passenger Side J/B (Left Kick Panel)
2I	90 (RHD)	Floor No.2 Wire and Passenger Side J/B (Left Kick Panel)
2K	90 (RHD)	Engine Room Main Wire and Passenger Side J/B (Left Kick Panel)
2L	84 (LHD)	Floor Wire and Passenger Side J/B (Right Kick Panel)
	90 (RHD)	Instrument Panel Wire and Passenger Side J/B (Left Kick Panel)
2N	90 (RHD)	Engine Room Main Wire and Passenger Side J/B (Left Kick Panel)

: CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
IA2	124 (RHD)	Instrument Panel Wire and Engine Room Main Wire (Near the Passenger Side J/B)
IA3	114 (LHD)	Instrument Panel Wire and Engine Room Main Wire (Near the Driver Side J/B)
	124 (RHD)	Instrument Panel Wire and Engine Room Main Wire (Near the Passenger Side J/B)
IF1	126 (RHD)	Instrument Panel No.3 Wire and Instrument Panel Wire (Right Side of the Instrument Panel)

: GROUND POINTS

Code	See Page	Ground Points Location
EA	112 (LHD)	Front Side of Cylinder Head
	122 (RHD)	
EB	112 (LHD)	Rear Side of Cylinder Head
	122 (RHD)	
EC	112 (LHD)	Left Fender Apron
	122 (RHD)	
ID	114 (LHD)	Cowl Side Panel LH
	124 (RHD)	
IH	114 (LHD)	Front Floor Panel Center LH
	124 (RHD)	Front Floor Panel Center RH
BJ	128 (RHD)	Front Floor Panel LH
BL	118 (LHD)	Front Floor Panel RH

: SPLICE POINTS

Code	See Page	Wire Harness with Splice Points	Code	See Page	Wire Harness with Splice Points
E7	112 (LHD)	Engine Wire	E8	112 (LHD)	Engine Wire
	122 (RHD)			122 (RHD)	