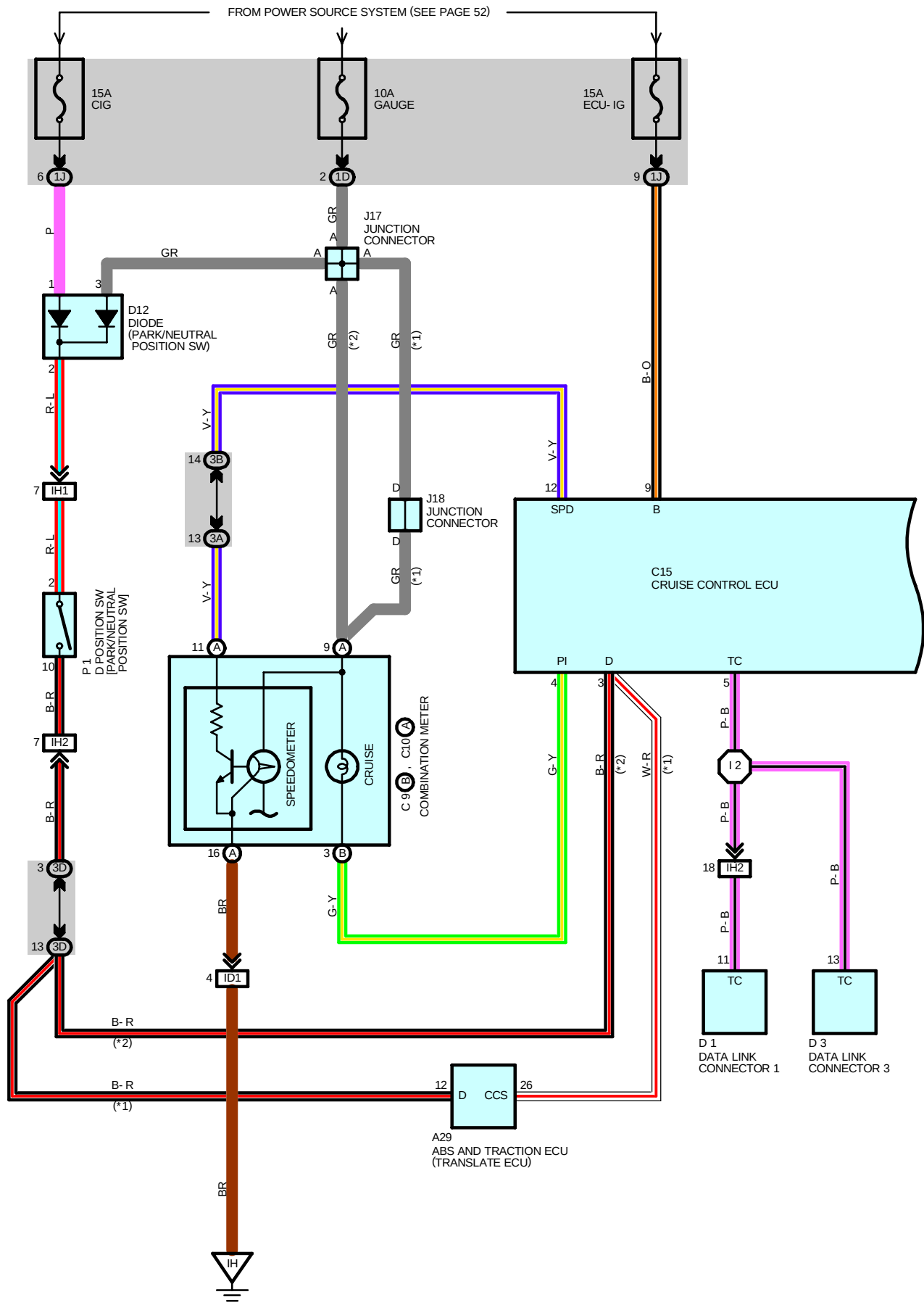
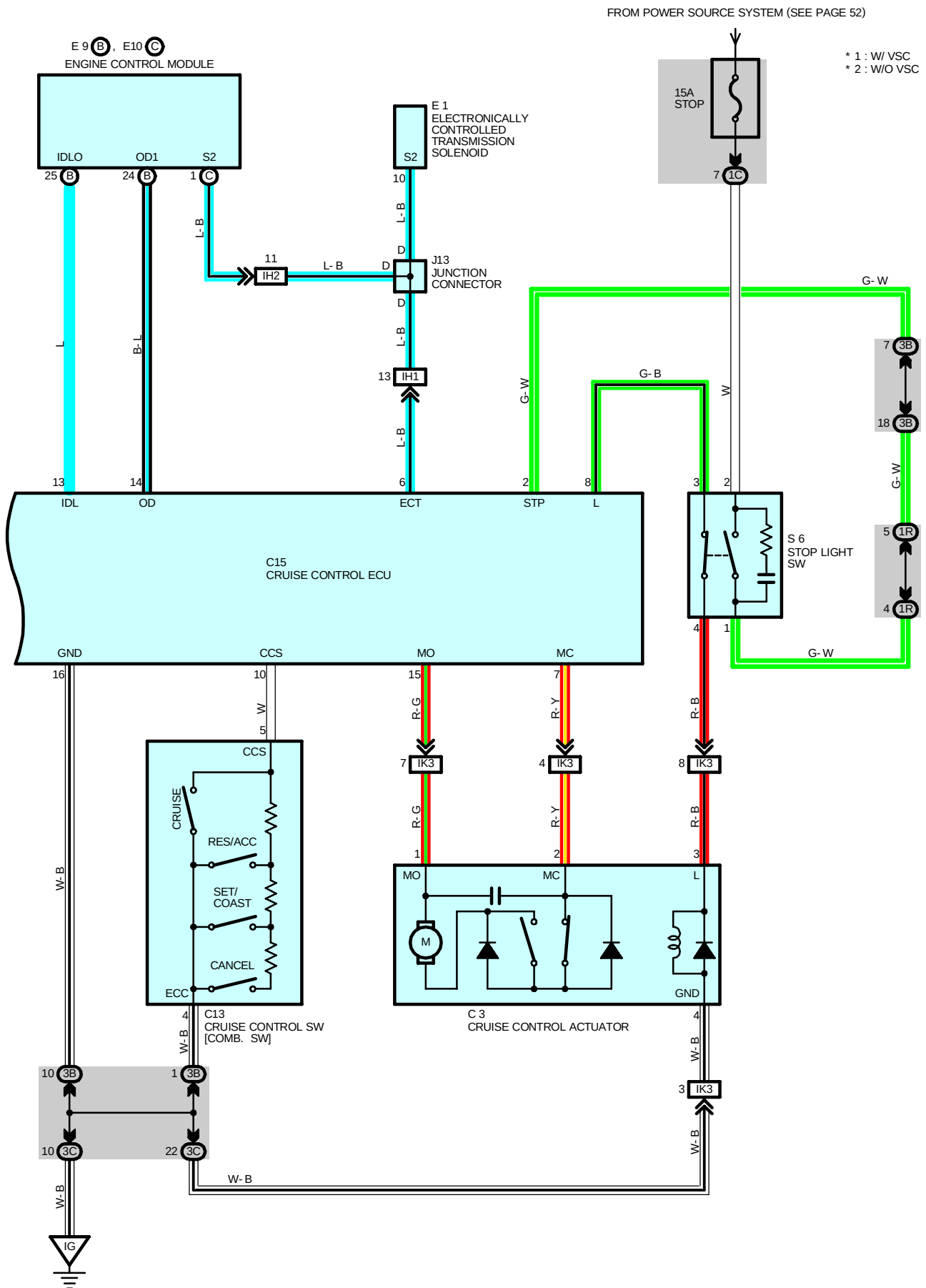


CRUISE CONTROL





SYSTEM OUTLINE

Current is applied at all times through the STOP fuse to TERMINAL 2 of the stop light SW.

With the ignition SW turned on, current flows through the GAUGE fuse to TERMINAL (A) 9 of the cruise control indicator light and the current through the ECU-IG fuse flows to TERMINAL 9 of the cruise control ECU.

When the ignition SW is on and the cruise SW is turned on, a signal is input from TERMINAL 5 of the cruise control SW to TERMINAL 10 of the cruise control ECU. As a result, the cruise control ECU functions and the current flows from the ECU-IG fuse to TERMINAL 9 of the cruise control ECU to TERMINAL 16 to GROUND, and the cruise control system is ready for operation.

At the same time, the current through the GAUGE fuse flows to TERMINAL (A) 9 of the cruise control indicator light to TERMINAL (B) 3 to TERMINAL 4 of the cruise control ECU to TERMINAL 16 to GROUND, which lights up the cruise control indicator light, indicating that the cruise control is ready for operation.

1. SET OPERATION

When the cruise SW is turned on and the set SW is pushed with the vehicle speed within the set limit (Approx. 40 km/h, 25 mph to 200 km/h, 124 mph), a signal is input to TERMINAL 10 of the cruise control ECU, and the vehicle speed when the set SW is released is memorized in the ECU as the set speed.

2. SET SPEED CONTROL

During cruise control driving, the ECU compares the set speed memorized in the ECU with the actual vehicle speed input into TERMINAL 12 of the cruise control ECU from the speed sensor, and controls the cruise control actuator to maintain the set speed.

When the actual speed is lower than the set speed, the ECU causes the current to the cruise control actuator to flow from TERMINAL 15 of the cruise control ECU to TERMINAL 1 of the cruise control actuator to TERMINAL 2 to TERMINAL 7 of the cruise control ECU. As a result, the motor in the cruise control actuator is rotated to open the throttle valve and pull the throttle cable to increase the vehicle speed.

When the actual vehicle speed is higher than the set speed, the current to the cruise control actuator flows from TERMINAL 7 of the ECU to TERMINAL 2 of the cruise control actuator to TERMINAL 1 to TERMINAL 15 of the cruise control ECU.

This causes the motor in the cruise control actuator to rotate and close the throttle valve to return the throttle cable, thus decrease the vehicle speed.

3. COAST CONTROL

During the cruise control driving, while the coast SW is turned on, the cruise control actuator returns the throttle cable to close the throttle valve and decrease the driving speed. The vehicle speed when the coast SW is turned off is memorized, and the vehicle continues at the new set speed.

4. ACCEL CONTROL

During cruise control driving, while the accel SW is turned on, the cruise control actuator pulls the throttle cable to open the throttle valve and increase the driving speed.

The vehicle speed when the accel SW is turned off is memorized, and the vehicle continues at the new set speed.

5. RESUME CONTROL

Unless the vehicle speed falls below the minimum speed limit (Approx. 40 km/h, 25 mph) after canceling the set speed by the cancel SW, pushing the resume SW will resume the speed which was set before cancellation.

6. MANUAL CANCEL MECHANISM

If any of the following operations occurs during cruise control operation, the magnetic clutch of the actuator turns off and the motor rotates to close the throttle valve and the cruise control is released.

- * Placing the shift lever to a position except "D" position (Park/Neutral position SW except "D" position). "Signal is not input to TERMINAL 3 of the ECU".
- * Depressing the brake pedal (Stop light SW on). "Signal input to TERMINAL 2 of the ECU".
- * Pushing the cancel switch (Cancel SW on). "Signal input to TERMINAL 10 of the ECU".
- * Pushing the cruise SW (Cruise SW off).

7. TAP-UP CONTROL FUNCTION

When the difference between the actual vehicle speed and the set speed is less than 5 km/h (3 mph), the set speed can be increased 1.5 km/h (0.9 mph) each time by operation the RES/ACC SW quickly, within approx. 0.5 seconds.

8. TAP-DOWN CONTROL FUNCTION

When the difference between the actual vehicle speed and the set speed is less than 5 km/h (3 mph), the set speed can be lowered 1.5 km/h (0.9 mph) each time by operating the SET/COAST SW quickly, within approx. 0.6 seconds.

9. AUTO CANCEL FUNCTION

A) If any of the following conditions are detected, the set vehicle speed memory is erased, and the cruise control is released. In addition, the power indicator will blink until the cruise SW is turned on again, and the cruise SW will not accept further operations unless the ignition SW is turned on again.

* When current continues to flow to the motor inside the actuator, in the throttle valve "OPEN" direction.

* The motor does not operate despite the motor drive signal being output.

B) If any of the following conditions are detected, the set vehicle speed memory is erased, and the cruise control is released. In addition, the power indicator will blink until the cruise SW is turned on again, and the system can not be operated until the cruise SW is turned on again.

* Over current to transistor driving the motor or the magnetic clutch.

* Open circuit in the magnetic clutch.

* Momentary interruption of vehicle speed signal.

C) If any of the following conditions are detected, the set vehicle speed memory is erased, and the cruise control is released. (Reset is accepted)

* When the vehicle speed falls below the minimum speed limit, approx. 40 km/h (25 mph)

* When the vehicle speed becomes - 16 km/h slower than the set speed.

10. AUTOMATIC TRANSAXLE CONTROL FUNCTION

* In overdrive, if the vehicle speed becomes lower than the overdrive cut speed (Set speed minus approx. 4 km/h, 2.5 mph) during cruise control operation, such as driving up a hill, the overdrive is released and the power is increased to prevent reduction in the vehicle speed.

* After releasing the overdrive, if the vehicle speed becomes higher than the overdrive return speed (Set speed minus approx. 2 km/h, 1.2 mph), and the ECU judges by the signals from the actuator's potentiometer that the upward slope has finished, the overdrive is resumed after.

* During cruise control driving, the cruise control operation signal is output from the cruise control ECU to the engine control module. Upon receiving this signal, the engine control module changes the shift pattern to normal.

To maintain smooth cruise control operation (on a downward slope etc.), the lock-up release of the transaxle when the idling point of the throttle position is "ON" is forbidden.

SERVICE HINTS

C3 CRUISE CONTROL ACTUATOR

3-4 : Approx. 38.5 Ω

C13 CRUISE CONTROL SW [COMB. SW]

5-4 : Continuity with the CRUISE SW on

5-4 : Approx. 1540 Ω with the CANCEL SW on

Approx. 240 Ω with the RES/ACC SW on

Approx. 630 Ω with the SET/COAST SW on

C15 CRUISE CONTROL ECU

9-GROUND : Approx. 12 volts with the ignition SW at ON position

12-GROUND : 4 pulses with 1 rotation of rotor shaft

10-GROUND : Approx. 1540 Ω with the CANCEL SW on in the control SW

Approx. 630 Ω with the SET/COAST SW on in the control SW

Approx. 240 Ω with the RES/ACC SW on in the control SW

16-GROUND : Always continuity

CRUISE CONTROL

: PARTS LOCATION

Code	See Page	Code	See Page	Code	See Page
A29	34	D1	32	J13	35
C3	32	D3	34	J17	35
C9	34	D12	34	J18	35
C10	34	E1	32	P1	33
C13	34	E9	34	S6	35
C15	34	E10	34		

: JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

Code	See Page	Junction Block and Wire Harness (Connector Location)
1C	22	Cowl Wire and Driver Side J/B No.1 (Lower Finish Panel)
1D		
1J		
1R		
3A	26	Cowl Wire and J/B No.3 (Behind the Combination Meter)
3B		
3C		
3D		

: CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
ID1	42	Instrument Panel Wire and Cowl Wire (The Back Side of the Lower Finish Panel)
IH1	44	Engine Wire and Cowl Wire (Front Side of the Blower Motor)
IH2		
IK3	44	Engine Room Main Wire and Cowl Wire (Right Cowl Side Panel)

: GROUND POINTS

Code	See Page	Ground Points Location
IG	42	Left Cowl Side Panel
IH	42	Right Instrument Panel Brace

: SPLICE POINTS

Code	See Page	Wire Harness with Splice Points	Code	See Page	Wire Harness with Splice Points
I2	44	Cowl Wire			