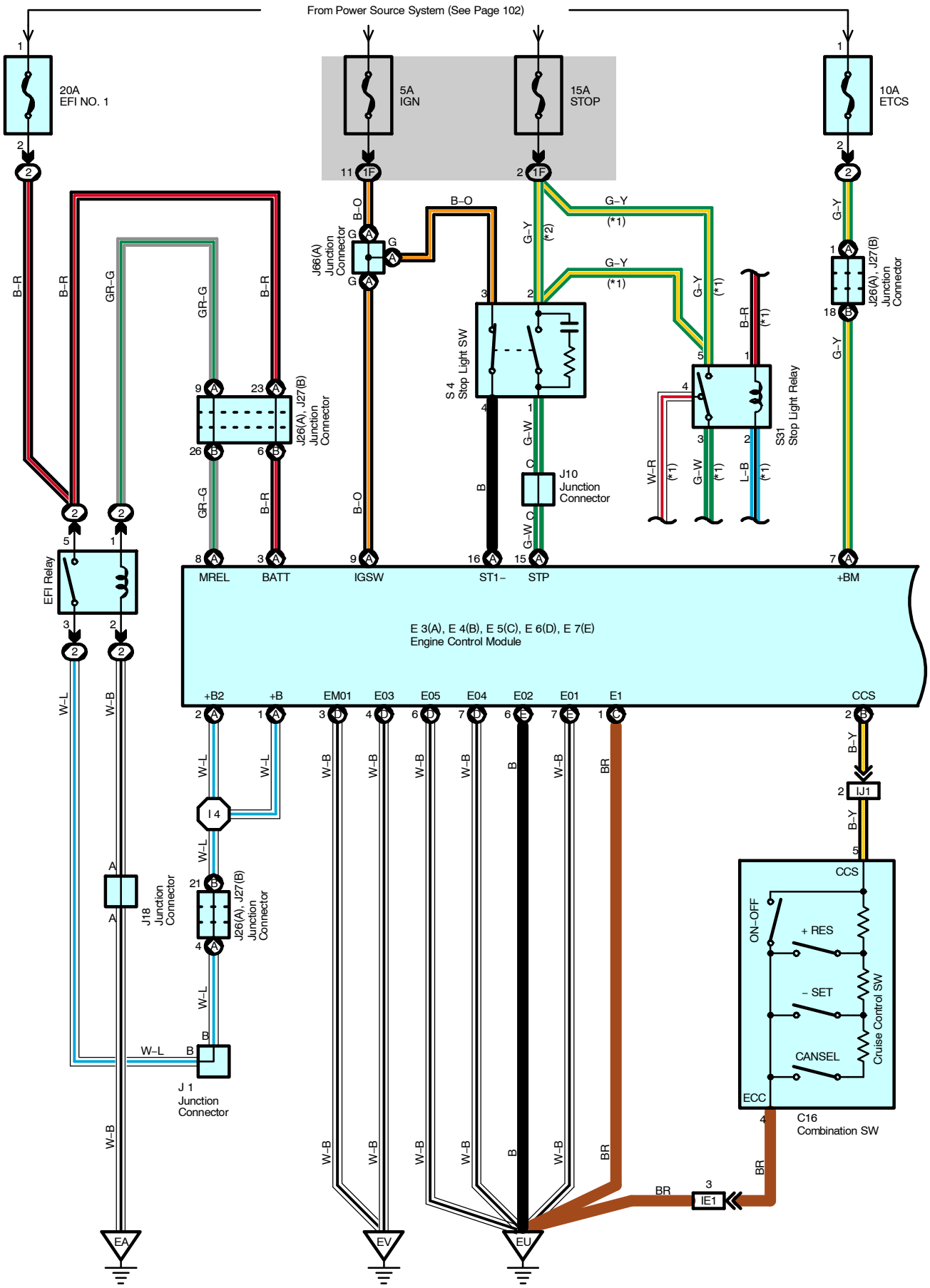
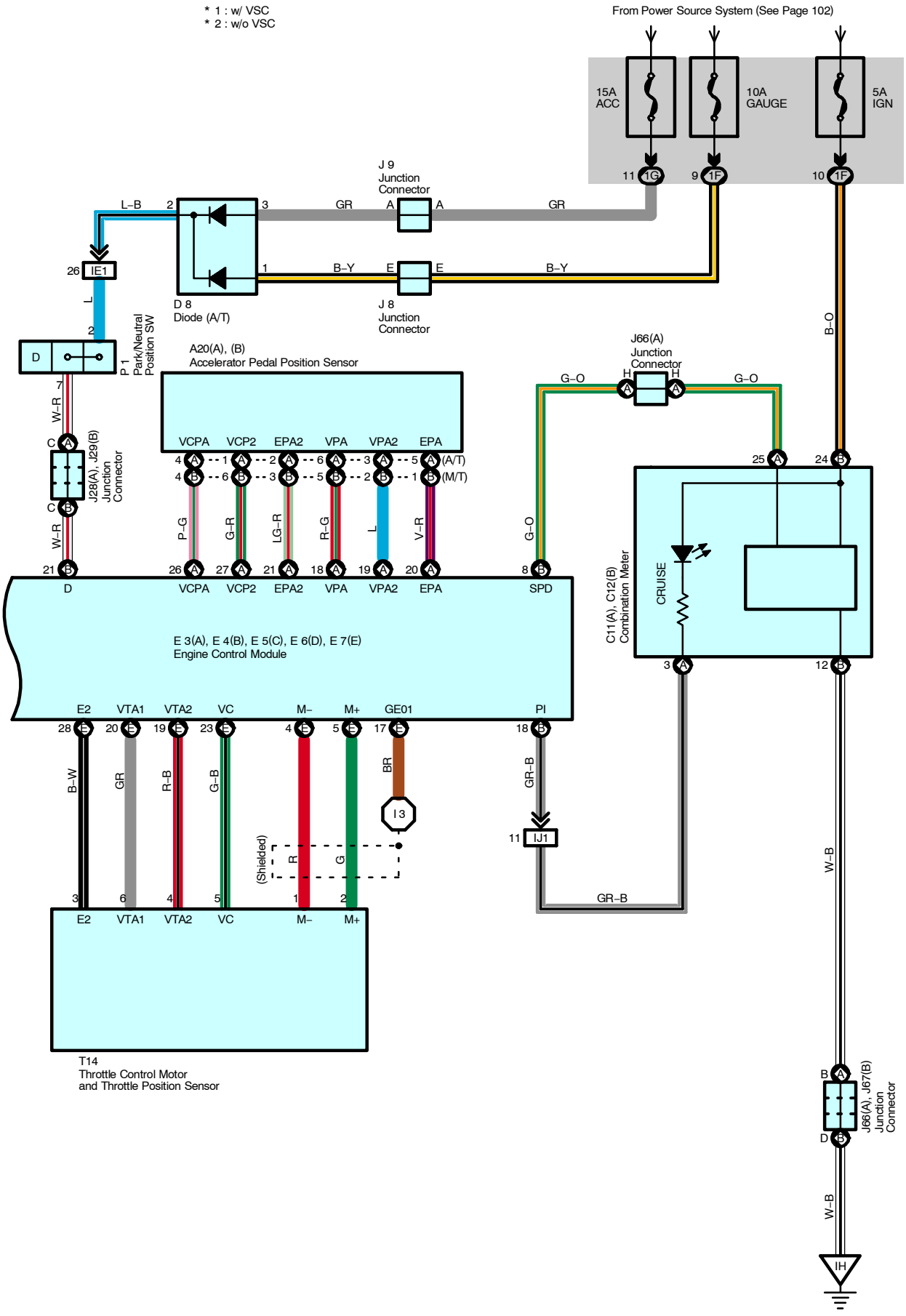
Cruise Control for 1GR–FE (Access/Standard Cab)




* 1 : w/ VSC
* 2 : w/o VSC
From Power Source System (See Page 102)
15A ACC
10A GAUGE
5A IGN
11 1G
9 1F
10 1F
J 9 Junction Connector
L–B
GR
B–Y
26 IE1
D 8 Diode (A/T)
J 8 Junction Connector
B–O
D
P 1 Park/Neutral Position SW
A20(A), (B) Accelerator Pedal Position Sensor
J66(A) Junction Connector
G–O
W–R
J28(A), J29(B) Junction Connector
VCPA VCP2 EPA2 VPA VPA2 EPA
(A/T)
(M/T)
P–G
G–R
LG–R
R–G
L
V–R
21 D
26 VCPA
27 VCP2
21 EPA2
18 VPA
19 VPA2
20 EPA
8 SPD
25
24
C11(A), C12(B) Combination Meter
CRUISE
3
12
E 3(A), E 4(B), E 5(C), E 6(D), E 7(E) Engine Control Module
E2 VTA1 VTA2 VC M– M+ GE01 PI
28 E2
20 VTA1
19 VTA2
23 VC
4 M–
5 M+
17 GE01
18 PI
B–W
GR
R–B
G–B
BR
GR–B
I 3
(Shielded)
R
G
11 IJ1
3 E2
6 VTA1
4 VTA2
5 VC
1 M–
2 M+
T14 Throttle Control Motor and Throttle Position Sensor
W–B
B
D
J66(A), J67(B) Junction Connector
IH

Cruise Control for 1GR–FE (Access/Standard Cab)

System Outline

The cruise control system is a constant vehicle speed controller which controls the opening angle of the engine throttle valve by the SW, and allows driving at a constant speed without depressing the accelerator pedal.

1. Set Control

When the – SET SW is operated while traveling with the ON–OFF SW on, the speed when the – SET SW is operated to off is memorized, and the vehicle speed is controlled at that speed.

2. Coast Control

When the – SET SW is operated to on, the cruise control opening angle requirement is turned to 0 to decrease the vehicle speed, and the speed when the – SET SW is operated to off is memorized, and the vehicle speed is controlled at that speed. Furthermore, every time the – SET SW is operated momentarily (Approx. 0.5 sec.) to on, the memorized vehicle speed is decreased by approx. 1.6 km/h (1.0 mph).

3. Accel Control

When the + RES SW is operated to on, the throttle motor rotates the throttle valve to open direction to increase the vehicle speed, and the speed when the + RES SW is operated to off is memorized, and the vehicle speed is controlled at that speed.
Furthermore, every time the + RES SW is operated momentarily (Approx. 0.5 sec.) to on, the memorized vehicle speed is increased by approx. 1.6 km/h (1.0 mph).

4. Manual Cancel Mechanism

If any of the following signals are input during cruise control traveling, the current to the motor flows in the direction to close the throttle valve, and cancel the cruise control.

(1) Stop lamp SW is on (Brake pedal is depressed)

(2) The CANCEL SW of the control SW is on

(3) ON–OFF SW is off

(4) Gear is shifted from D position to other positions than D.

5. Resume Control

After canceling the cruise control (Except when the ON–OFF SW is off) if the vehicle speed is above the minimum speed limit (Approx. 40km/h, 25mph), operating the + RES SW to on from off will cause the system to accelerate and resume to the vehicle speed before manual cancellation.

6. Overdrive Function

The overdrive may be cut on an uphill grade, while traveling with the cruise control.
After the overdrive is cut, when the throttle opening information indicates the hill climbing is finished after the overdrive is canceled, the vehicle returns to overdrive mode again as the overdrive return timer is completed, and if the system determines that the uphill grade has finished, the overdrive will resume after the overdrive timer operation.

7. Auto Cancel Operation

If any of the following conditions are detected, the control is canceled.

(1) Disconnection and/or short in the stop light SW

(2) Malfunction in the vehicle speed signal

(3) Malfunction in the electronic throttle parts

(4) Malfunction in the stop light SW input circuit

(5) Malfunction in the cancel circuit

(6) When the vehicle speed gets slower than the low speed limit.

(7) The actual vehicle speed becomes –16 km/h (10 mph) slower than the set speed

Service Hints

E3 (A), E4 (B), E5 (C), E7 (E) Engine Control Module

IGSW–E1 : 9.0–14.0 volts with ignition SW at ON or ST position
BATT–E1 : Always 9.0–14.0 volts
STP–E1 : 9.0–14.0 volts with brake pedal depressed
: Below 1.5 volts with brake pedal released

C16 Combination SW

5–4 : Approx. 1540Ω with CANCEL SW on
Approx. 240Ω with + RES SW on
Approx. 630Ω with – SET SW on

: Parts Location

Code		See Page	Code		See Page	Code		See Page
A20	A	56	E6	D	57	J28	A	58
	B	56	E7	E	57	J29	B	58
C11	A	56	J1		55 (1GR–FE)	J66	A	58
C12	B	56	J8		58	J67	B	58
C16		56	J9		58	P1		55 (1GR–FE)
D8		57	J10		58	S4		59
E3	A	57	J18		55 (1GR–FE)	S31		59
E4	B	57	J26	A	58	T14		55 (1GR–FE)
E5	C	57	J27	B	58			

: Relay Blocks

Code	See Page	Relay Blocks (Relay Block Location)
2	23	Engine Room R/B (Engine Compartment Left)

: Junction Block and Wire Harness Connector

Code	See Page	Junction Block and Wire Harness (Connector Location)
1F	24 (*2)	Cowl Wire and Driver Side J/B (Lower Finish Panel)
	28 (*1)	
1G	24 (*2)	
	28 (*1)	

: Connector Joining Wire Harness and Wire Harness

Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
IE1	80	Engine Wire and Cowl Wire (Right Side of Instrument Panel)
IJ1	80	Cowl Wire and Cowl Wire (Instrument Panel Reinforcement RH)

: Ground Points

Code	See Page	Ground Points Location
EA	76 (1GR–FE)	Front Left Fender
EU	76 (1GR–FE)	Rear Bank of Right Cylinder Head
EV	76 (1GR–FE)	Rear Bank of Left Cylinder Head
IH	78	Right Kick Panel

: Splice Points

Code	See Page	Wire Harness with Splice Points	Code	See Page	Wire Harness with Splice Points
I3	80	Engine Wire	I4	80	Cowl Wire

* 1 : w/ Daytime Running Light * 2 : w/o Daytime Running Light * 3 : Access Cab * 4 : Standard Cab * 5 : Bench Seat
* 6 : Captain Seat * 7 : Access Cab Captain Seat * 8 : Standard Cab Bench Seat * 9 : Access Cab w/o Power Seat

Memo