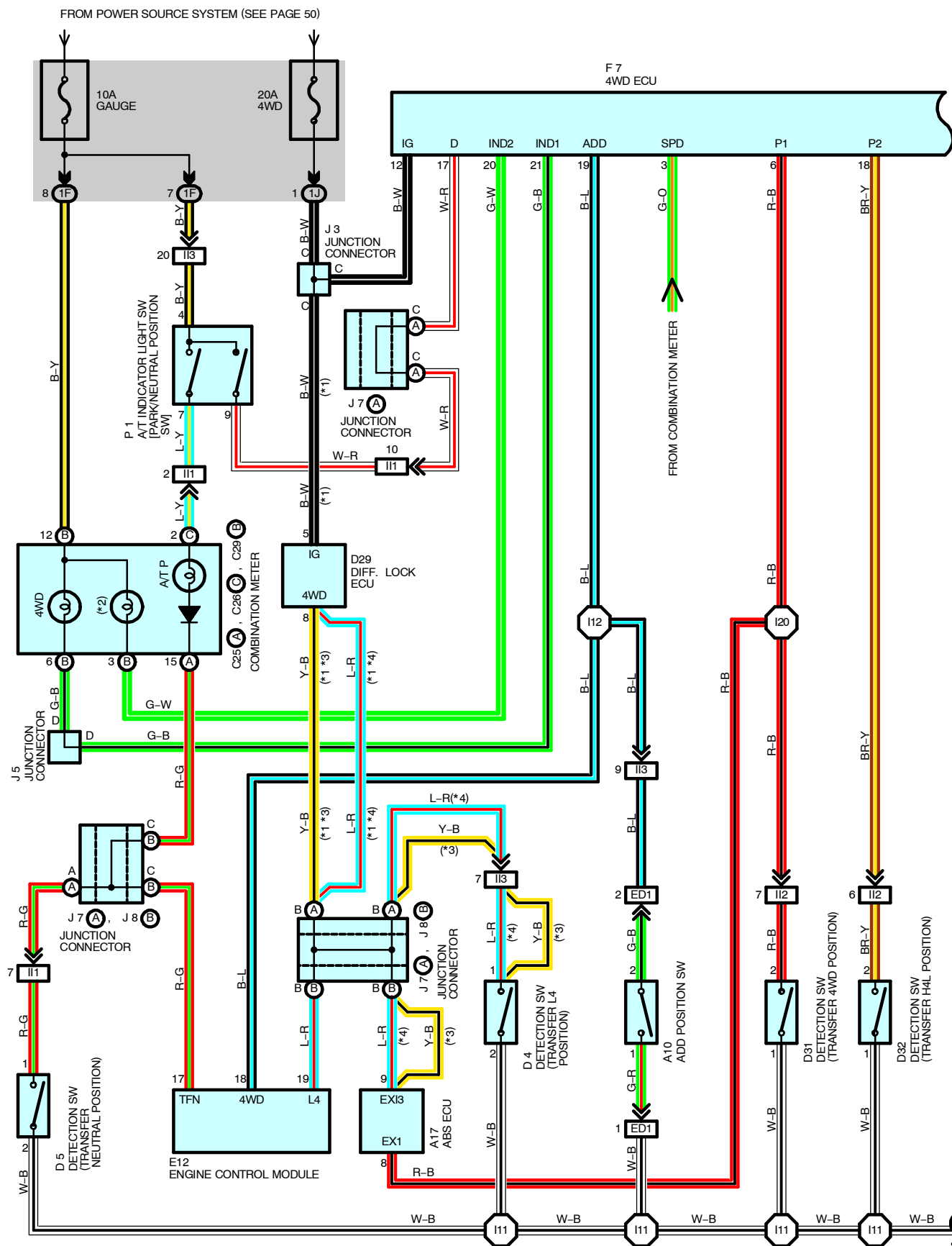
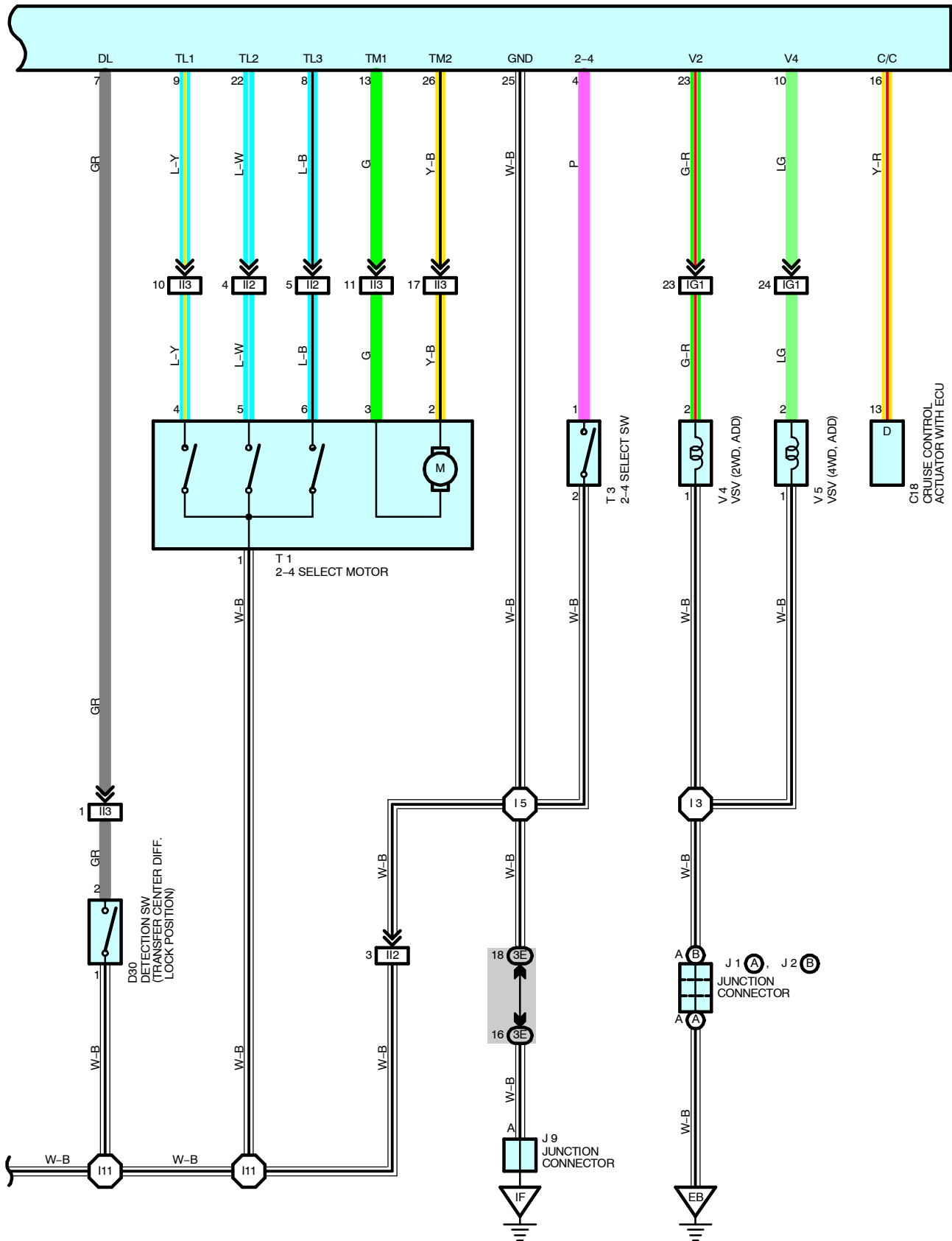


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- * 1 : W/ REAR DIFF. LOCK
- * 2 : CENTER DIFF. LOCK
- * 3 : CALIFORNIA
- * 4 : EXCEPT CALIFORNIA

F 7
4WD ECU



4WD (w/ 2-4 SELECT SW)

SYSTEM OUTLINE

The 4WD ECU detects the condition of the detection SW ((Transfer center diff. lock position), (Transfer 4WD position), (Transfer H4L Position)), 2-4 select SW and the vehicle speed, and controls the 2-4 select motor and VSV ((2WD, ADD), (4WD, ADD)).

4WD CONTROL

(1) Shift position

The target shift position determined through the condition of the 2-4 select SW and detection SW (Transfer center diff. lock position), and operates the 2-4 select motor.

- * When the 2-4 select SW and the detection SW (Transfer center diff. lock position) are both off, put in to H2 position. At this time, current flows from the 4WD fuse to TERMINAL 12 of the 4WD ECU to TERMINAL 26 to TERMINAL 2 of the 2-4 select motor to TERMINAL 3 to TERMINAL 13 of the 4WD ECU to TERMINAL 25 to GROUND, so the 2-4 select motor rotates at H2 position.
- * When the 2-4 select SW is on and the detection SW (Transfer center diff. lock position) is off, put in to H4 position. At this time, current flows from the 4WD fuse to TERMINAL 12 of the 4WD ECU to TERMINAL 13 to TERMINAL 3 of the 2-4 select motor to TERMINAL 2 to TERMINAL 26 of the 4WD ECU to TERMINAL 25 to GROUND, so the 2-4 select motor rotates at H4 position.
- * When the 2-4 select SW and the detection SW (Transfer center diff. lock position) are both on, or the 2-4 select SW is off, and the detection SW (Transfer center diff. lock position) is on, put in to H4L position. When switched from H4F to H4L, current flows from the 4WD fuse to TERMINAL 12 of the 4WD ECU to TERMINAL 26 to TERMINAL 2 of the 2-4 select motor to TERMINAL 3 to TERMINAL 13 of the 4WD ECU to TERMINAL 25 to GROUND, so the 2-4 select motor rotates at H4L position. When switched from H2 to H4L, current flows from the 4WD fuse to TERMINAL 12 of the 4WD ECU to TERMINAL 13 to TERMINAL 3 of the 2-4 select motor to TERMINAL 2 to TERMINAL 26 of the 4WD ECU to TERMINAL 25 to GROUND, so the 2-4 select motor rotates at H4L position.

(2) Shift limit control

When the vehicle speed is over 100 km/h, shift change to H4 or H4L mode can not be made. The vehicle speed signal is input to TERMINAL 3 of the 4WD ECU. At this time, the 4WD indicator light and the center diff. lock indicator light flashes, and the buzzer installed in the 4WD ECU goes on. This condition can be canceled by decelerating the vehicle speed to below 100 km/h, or by selecting H2 mode.

(3) Shift control

When the 2-4 select motor will not switch after approximately 3 seconds from shifting (When there are no changes to the signals to TERMINAL 8, TERMINAL 9 and TERMINAL 22 of the 4WD ECU), the 4WD indicator light and the center diff. lock indicator light flashes. The cruise control is canceled if in use. When the 2-4 select motor switch is completed, the indicator lights go off and the cruise control can be set again.

(4) ADD valve control

When switching between 2WD to 4WD, the VSV is controlled to free or lock the ADD. At this time, current flows from the 4WD fuse to TERMINAL 12 of the 4WD ECU to TERMINAL 23 to VSV (2WD, ADD) to GROUND, or flows from the 4WD fuse to TERMINAL 12 of the 4WD ECU to TERMINAL 10 to VSV (4WD, ADD) to GROUND, so the VSV (2WD, ADD) or VSV (4WD, ADD) is controlled.

SERVICE HINTS

F7 4WD ECU

- 12-GROUND : Approx. 12 volts with ignition SW on
- 25-GROUND : Always continuity
- 3-GROUND : Pulse generation with vehicle moving

T3 2-4 SELECT SW

- 1-2 : Closed with 2-4 select SW on

P1 A/T INDICATOR LIGHT SW [PARK/NEUTRAL POSITION SW]

- 4-7 : Closed with A/T shift lever at **P** position
- 4-9 : Closed with A/T shift lever at **D** position

 : PARTS LOCATION

Code	See Page	Code	See Page	Code	See Page
A10	28 (5VZ-FE)	D30	28 (5VZ-FE)	J7	A 33
A17	32	D31	28 (5VZ-FE)	J8	B 33
C18	28 (5VZ-FE)	D32	28 (5VZ-FE)	J9	33
C25	A 32	E12	33	P1	29 (5VZ-FE)
C26	C 32	F7	33	T1	29 (5VZ-FE)
C29	B 32	J1	A 29 (5VZ-FE)	T3	33
D4	28 (5VZ-FE)	J2	B 29 (5VZ-FE)	V4	29 (5VZ-FE)
D5	28 (5VZ-FE)	J3	33	V5	29 (5VZ-FE)
D29	32	J5	33		

 : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

Code	See Page	Junction Block and Wire Harness (Connector Location)
1F	24	Cowl Wire and Driver Side J/B (Lower Finish Panel)
1J		
3E	26	Cowl Wire and Center J/B (Near the Steering Column Tube)

 : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
ED1	38 (5VZ-FE)	Engine Wire and Front Differential Wire (Near the Front Differential)
IG1	42	Engine Room Main Wire and Cowl Wire (Left Kick Panel)
II1	42	Engine Wire and Cowl Wire (On the Glove Box)
II2		
II3		

 : GROUND POINTS

Code	See Page	Ground Points Location
EB	38 (5VZ-FE)	Front Left Fender
IF	42	Cowl Side Panel RH

 : SPLICE POINTS

Code	See Page	Wire Harness with Splice Points	Code	See Page	Wire Harness with Splice Points
I3	42	Engine Room Main Wire	I12	42	Cowl Wire
I5	42	Cowl Wire	I20		
I11	42	Engine Wire			