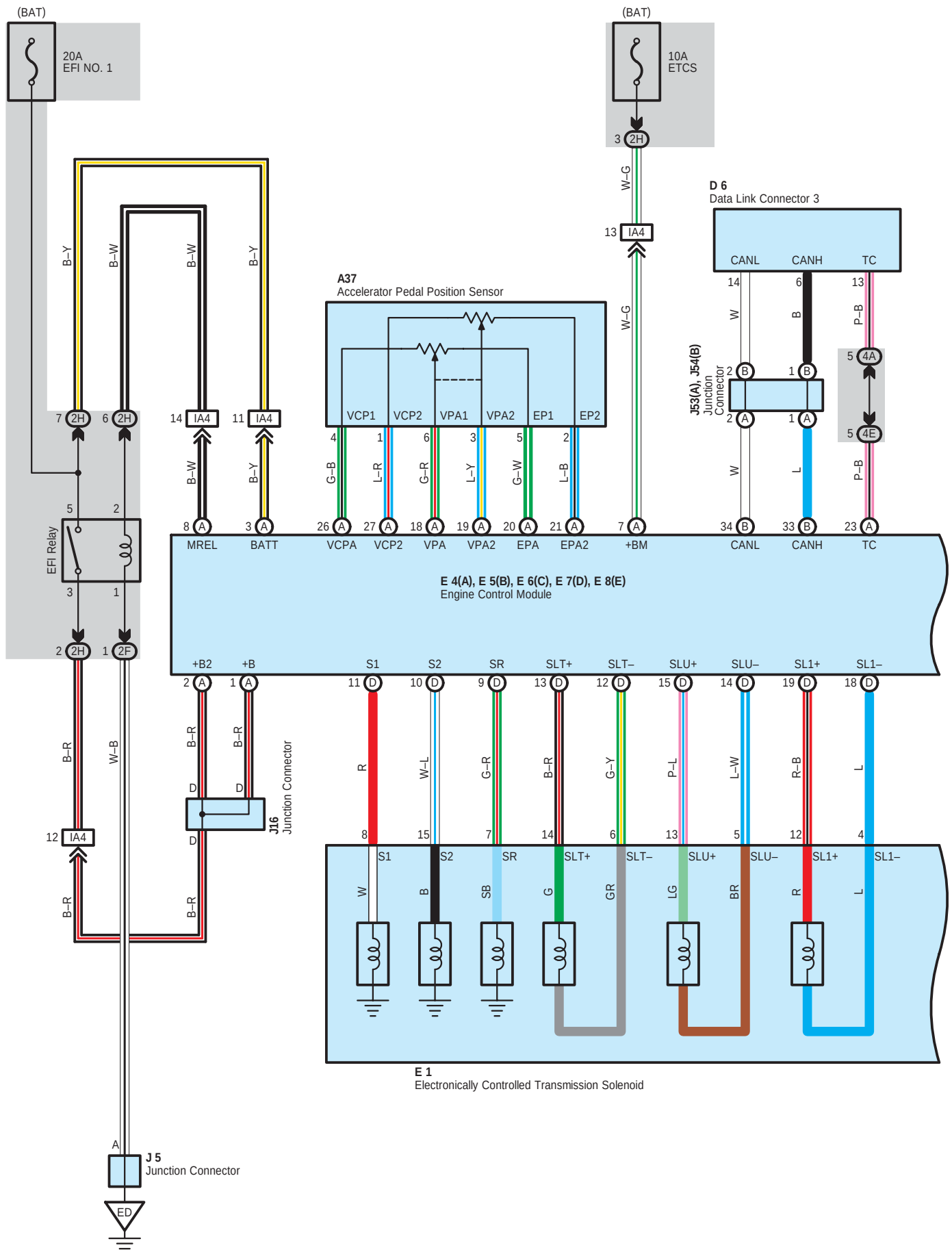
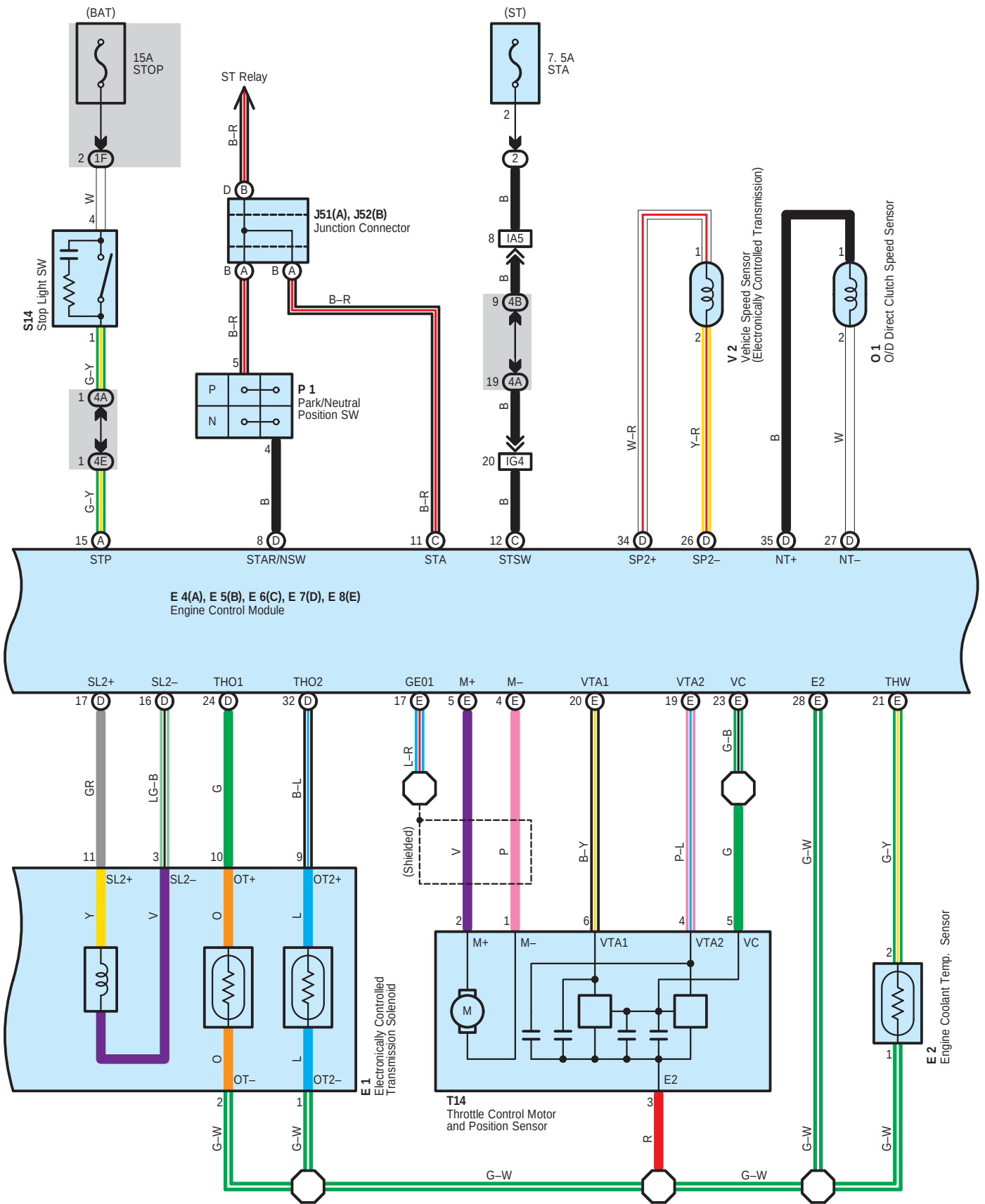
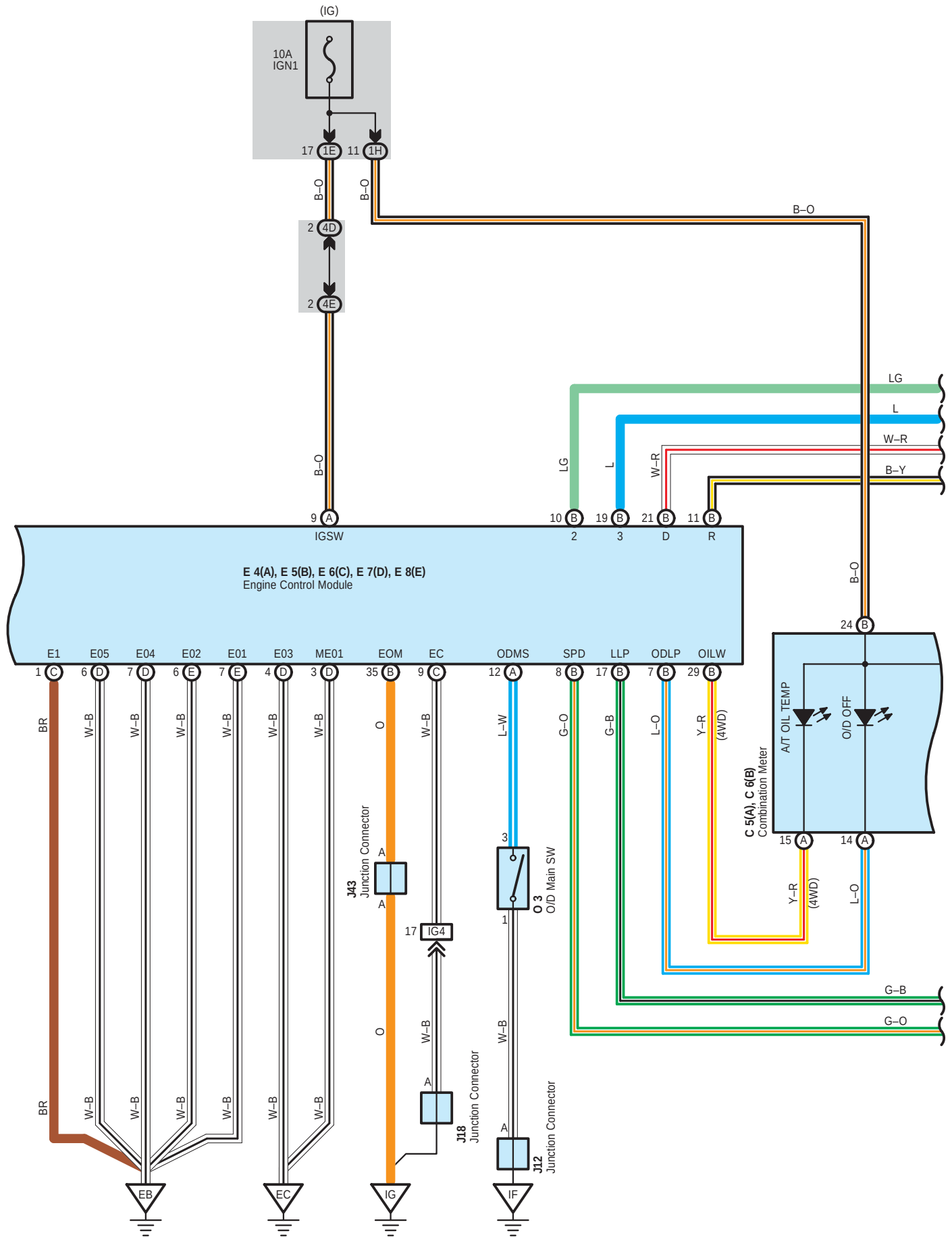


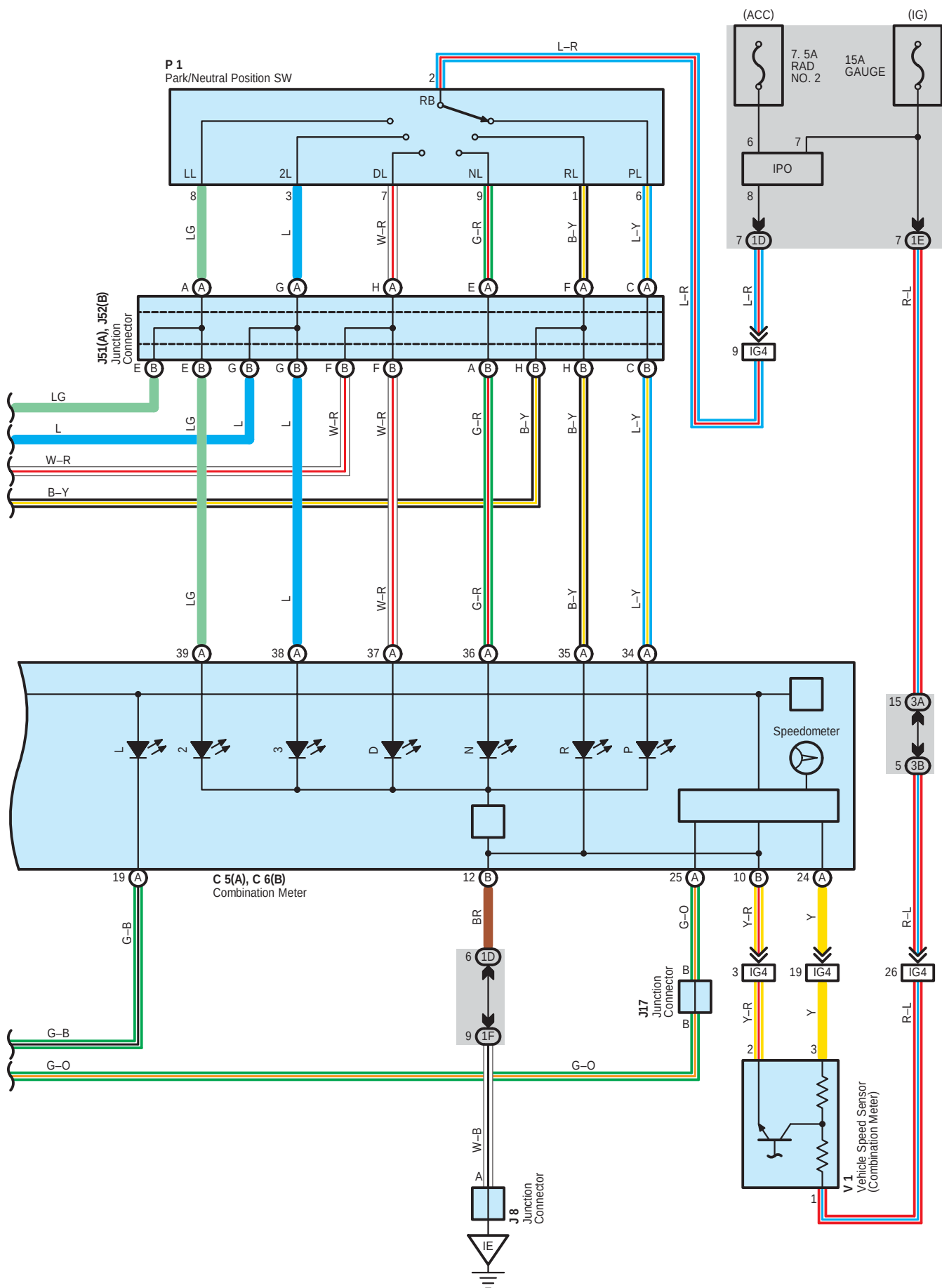
ECT and A/T Indicator





ECT and A/T Indicator





System Outline

Previous automatic transmissions have selected each gear shift using mechanically controlled throttle hydraulic pressure, governor hydraulic pressure and lock-up hydraulic pressure. The electronically controlled transmission, however, electrically controls the line pressure, throttle pressure, lock-up pressure and accumulator pressure etc. through the solenoid valve. The electronically controlled transmission is a system which precisely controls gear shift timing and lock-up timing in response to the vehicle's driving conditions and the engine condition detected by various sensors. It makes smooth driving possible by shift selection for each gear which is the most appropriate to the driving conditions at that time, and by preventing downing, squat and gear shift shock when starting off.

1. Gear Shift Operation

When driving, the engine warm up condition is input as a signal to TERMINAL THW of the engine control module from the engine coolant temp. sensor and the vehicle speed signal from vehicle speed sensor is input to TERMINAL SP2+ of the engine control module. At the same time, the throttle valve opening signal from the throttle position sensor is input to TERMINALS VTA1 and VTA2 of the engine control module as throttle angle signal.

Based on these signals, the engine control module selects the best shift position for the driving conditions and sends current to the electronically controlled transmission solenoid.

2. Line Hydraulic Pressure Control

The engine control module adjusts the line hydraulic pressure to the optimal level by controlling TERMINAL SLT+ of the module according to the engine torque data. This realizes the smooth gear shifting.

3. High Response Gear Shifting Control

The engine control module performs the high response engine torque up control to control the ignition-timing lag as well as opening the electronic throttle when shifting down. By doing this, the gear shifting is performed in a short period of time. Moreover, the engine control module uses the orifice switching control, which optimizes the speed of applying and reducing the hydraulic pressure. And it realizes the fine shifting condition by applying and reducing hydraulic pressure slowly when the gear shifting shock is important and quickly when the high response is required.

4. Clutch Hydraulic Pressure Control

The engine control module controls the clutch operation in the optimal timing and with the best hydraulic pressure according to the engine torque data and the number of the clutch revolution

5. Lock-Up and Flexible Lock-Up Control

The engine control module carries out the lock-up control by controlling the TERMINAL SLU+ of the module according to the shift position, vehicle speed, throttle opening degree and running conditions. The engine control module also steadily keeps applying the lock-up clutch a delicate slippage to improve the transmission efficiency (Fuel efficiency) of the torque converter.

6. Stop Light SW Circuit

If the brake pedal is depressed (Stop light SW on) when driving in lock-up condition, a signal is input to TERMINAL STP of the engine control module. The engine control module operates and cuts the current to the solenoid to release lock-up.

7. AI-Shift Control

The engine control module judges whether the road is downslope or upslope by detecting the throttle opening degree or the vehicle's speed. Moreover it can expect the winding roads by detecting the turning condition of the vehicle. The engine control module keeps unnecessary shifting up from the fourth gear from operating and carries out the automatic shifting down to the third gear in order to control the vehicle running according to the road conditions. The engine control module also reads the driver's intention during driving from his (her) accelerating operation and the running conditions of the vehicle. As a result of that, ideal shifting patters for each driver are automatically selected without any switching operations.

○ : Parts Location

Code		See Page	Code		See Page	Code		See Page
A37		42	E8	E	43	J53	A	44
C5	A	42	J5		41	J54	B	44
C6	B	42	J8		44	O1		41
D6		43	J12		44	O3		45
E1		40	J16		44	P1		41
E2		40	J17		44	S14		45
E4	A	43	J18		44	T14		41
E5	B	43	J43		44	V1		41
E6	C	43	J51	A	44	V2		41
E7	D	43	J52	B	44			

 : **Relay Blocks**

Code	See Page	Relay Blocks (Relay Block Location)
2	26	Engine Room R/B No.2 (Engine Compartment Left)

 : **Junction Block and Wire Harness Connector**

Code	See Page	Junction Block and Wire Harness (Connector Location)
1D	33	Cowl Wire and Instrument Panel J/B (Lower Finish Panel)
1E		
1F		
1H		
2F	29	Engine Room Main Wire and Engine Room J/B (Engine Compartment Left)
2H		
3A	36	Cowl Wire and Sub J/B No.3 (Upper the Accelerator Pedal)
3B		
4A	38	Cowl Wire and Sub J/B No.4 (Upper the Accelerator Pedal)
4B		
4D		
4E		

 : **Connector Joining Wire Harness and Wire Harness**

Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
IA4	51	Engine Room Main Wire and Cowl Wire (Cowl Side Panel LH)
IA5		
IG4	51	Engine Wire and Cowl Wire (Right Side of Instrument Panel)

 : **Ground Points**

Code	See Page	Ground Points Location
EB	50	Rear Left Side of Cylinder Head
EC	50	Front Left Side of Cylinder Head
ED	50	Front Fender Apron LH
IE	51	Cowl Side Panel LH
IF	51	Instrument Panel Brace LH
IG	51	Cowl Side Panel RH