

Electronically Controlled Transmission and A/T Indicator

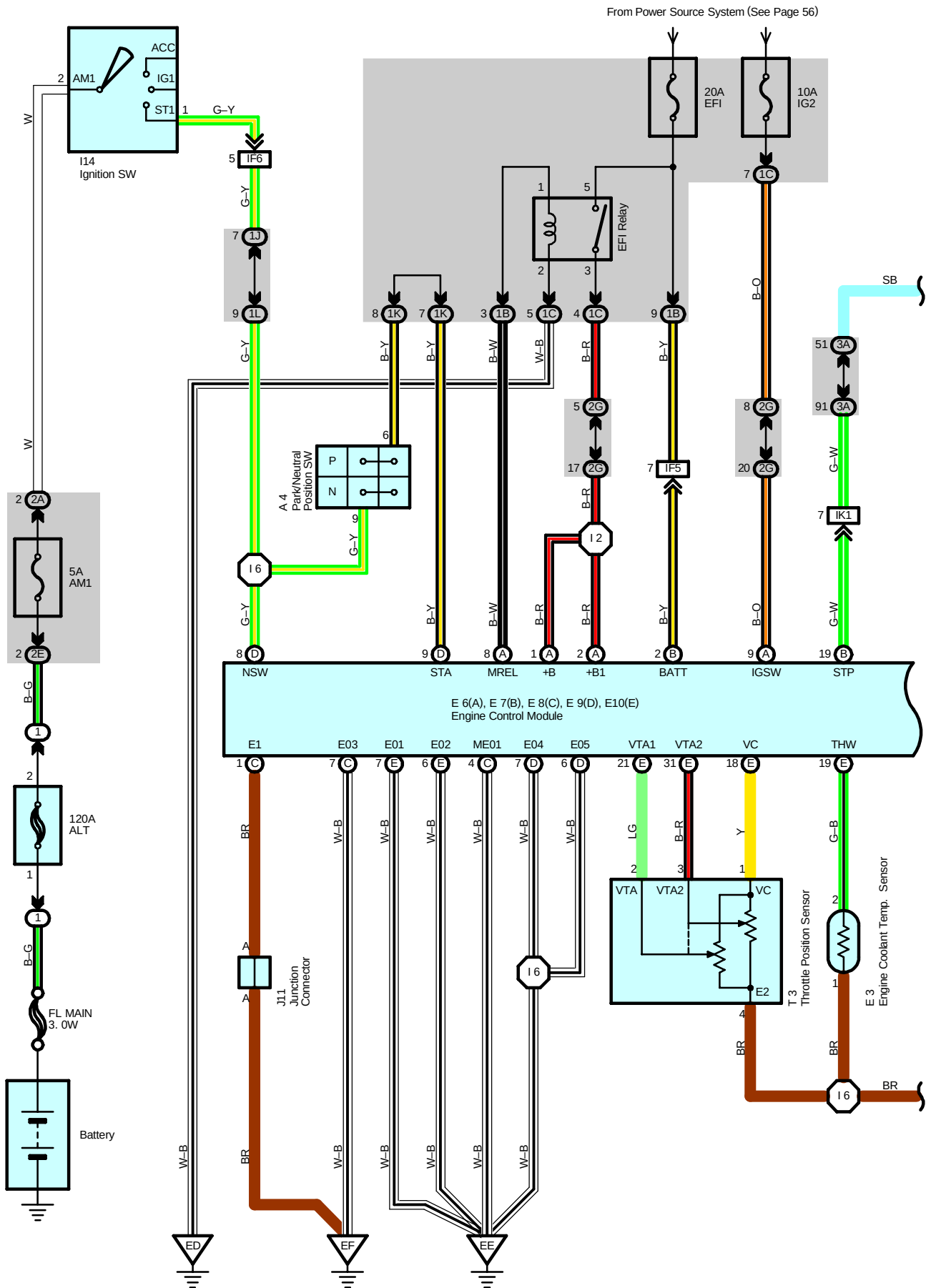
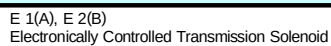
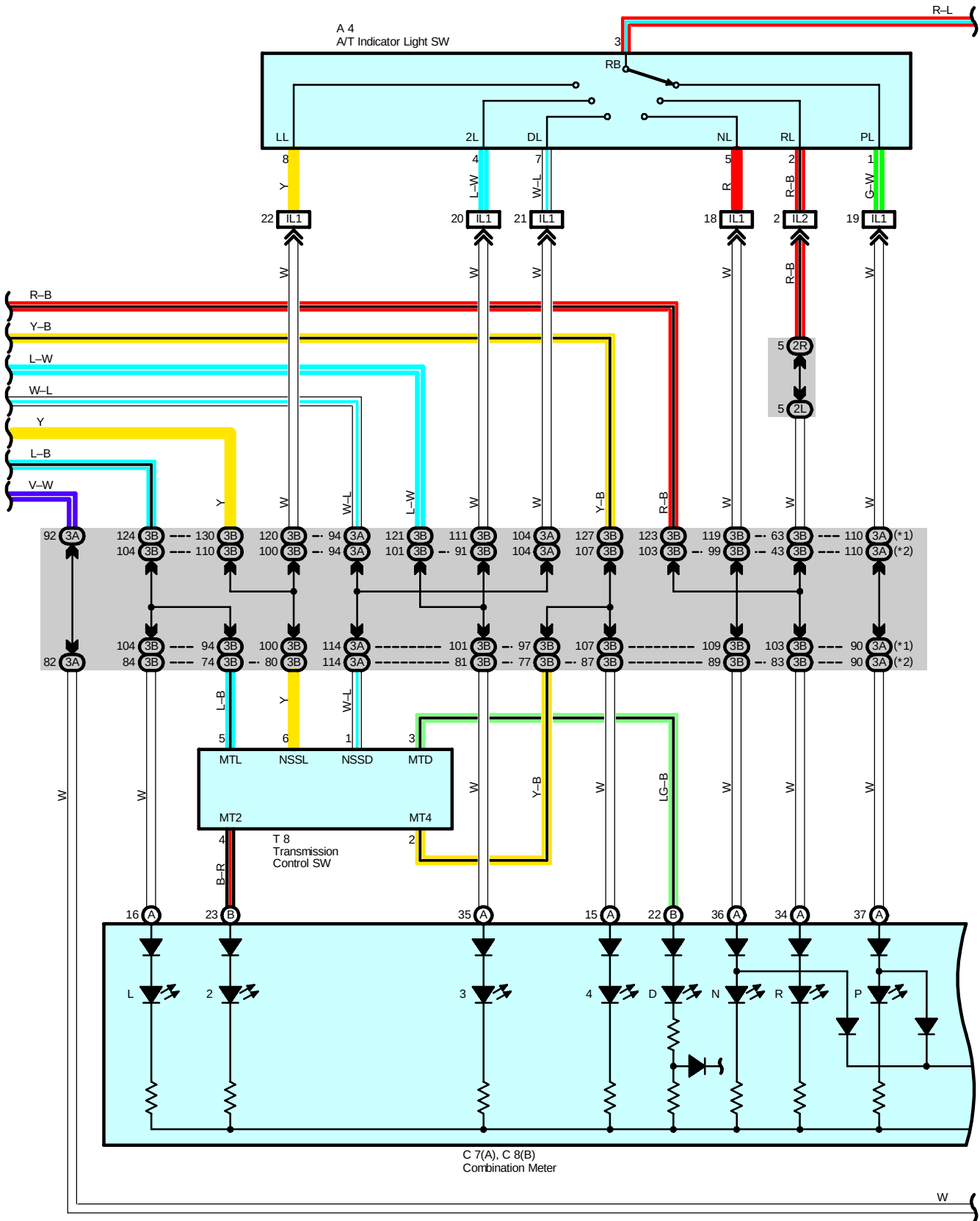


Diagram of a 15A STOP sign. The sign is a rectangle with a wavy vertical line in the center. Below the sign is a ground symbol consisting of a circle with a cross inside, labeled '2G'. To the left of the ground symbol is the number '13'. To the right of the sign is the text '15A STOP'.



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System Outline

Previous automatic transaxle 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 is input to TERMINAL SPD 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. Lock-Up Operation

When each signal makes engine control module recognize that LOCK-UP condition is satisfied, the current flows from engine control module TERMINAL DSL to electronically controlled transmission solenoid TERMINAL DSL. At the same time, the current flows engine control module TERMINAL SL1+ to electroically controlled transmission solenoid TERMINAL SL1+ and from TERMINAL SL1- to engine control module TERMINAL SL1-. This works LOCK-UP solenoid to perform LOCK-UP operation.

3. 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.

Service Hints

E6 (A), E7 (B), E8 (C), E9 (D), E10 (E) Engine Control Module

L-E1 : 10.0-14.0 volts (Ignition SW on and shift lever at L position)

2-E1 : 10.0-14.0 volts (Ignition SW on and shift lever at 2 position)

R-E1 : 10.0-14.0 volts (Ignition SW on and shift lever at R position)

D-E1 : 10.0-14.0 volts (Ignition SW on and shift lever at D position)

THO-E2 : Below 1.0 volts (Ignition SW on and AFT temperature 110 °C (230 °F))

A4 A/T Indicator Light SW

3-1 : Closed with shift lever in P position

3-2 : Closed with shift lever in R position

3-5 : Closed with shift lever in N position

3-7 : Closed with shift lever in D position

3-8 : Closed with shift lever in L position

3-4 : Closed with shift lever in 2 position

○ : Parts Location

Code	See Page	Code	See Page	Code	See Page
A4	36	E6	A 38	S1	37
C1	36	E7	B 38	S13	39
C7	A 38	E8	C 38	T3	37
C8	B 38	E9	D 38	T4	37
E1	A 36	E10	E 38	T8	39
E2	B 36	I14	39		
E3	36	J11	39		

○ : Relay Blocks

Code	See Page	Relay Blocks (Relay Block Location)
1	22	Engine Room R/B (Engine Compartment Left)

**: Junction Block and Wire Harness Connector**

Code	See Page	Junction Block and Wire Harness (Connector Location)
1B	25	Engine Room Main Wire and Engine Room J/B (Engine Compartment Left)
1C		
1J		
1K	25	Engine Wire and Engine Room J/B (Engine Compartment Left)
1L		
2A	28	Instrument Panel Wire and Driver Side J/B (Lower Finish Panel)
2B		
2E	28	Engine Room Main Wire and Driver Side J/B (Lower Finish Panel)
2G		
2L	29	Instrument Panel Wire and Driver Side J/B (Lower Finish Panel)
2M		
2R		
3A	34 (w/ VSC)	Instrument Panel Wire and Passenger Side J/B (Instrument Panel Brace RH)
	35 (w/o VSC)	
3B	34 (w/ VSC)	
	35 (w/o VSC)	

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

Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
IF5	46	Engine Room Main Wire and Instrument Panel Wire (Right Side of Steering Column Tube)
IF6		
IF7		
IK1	48	Instrument Panel Wire and Instrument Panel Wire (Instrument Panel Reinforcement RH)
IL1	48	Engine Wire and Instrument Panel Wire (Behind the Glove Box)
IL2		

**: Ground Points**

Code	See Page	Ground Points Location
ED	44	Left Fender
EE	44	Left Side of Cylinder Head
EF	44	Intake Side of Cylinder Block
IA	46	Instrument Panel Reinforcement LH
ID	46	Instrument Panel Brace RH

**: Splice Points**

Code	See Page	Wire Harness with Splice Points	Code	See Page	Wire Harness with Splice Points
I2	48	Engine Room Main Wire	I6	48	Engine Wire