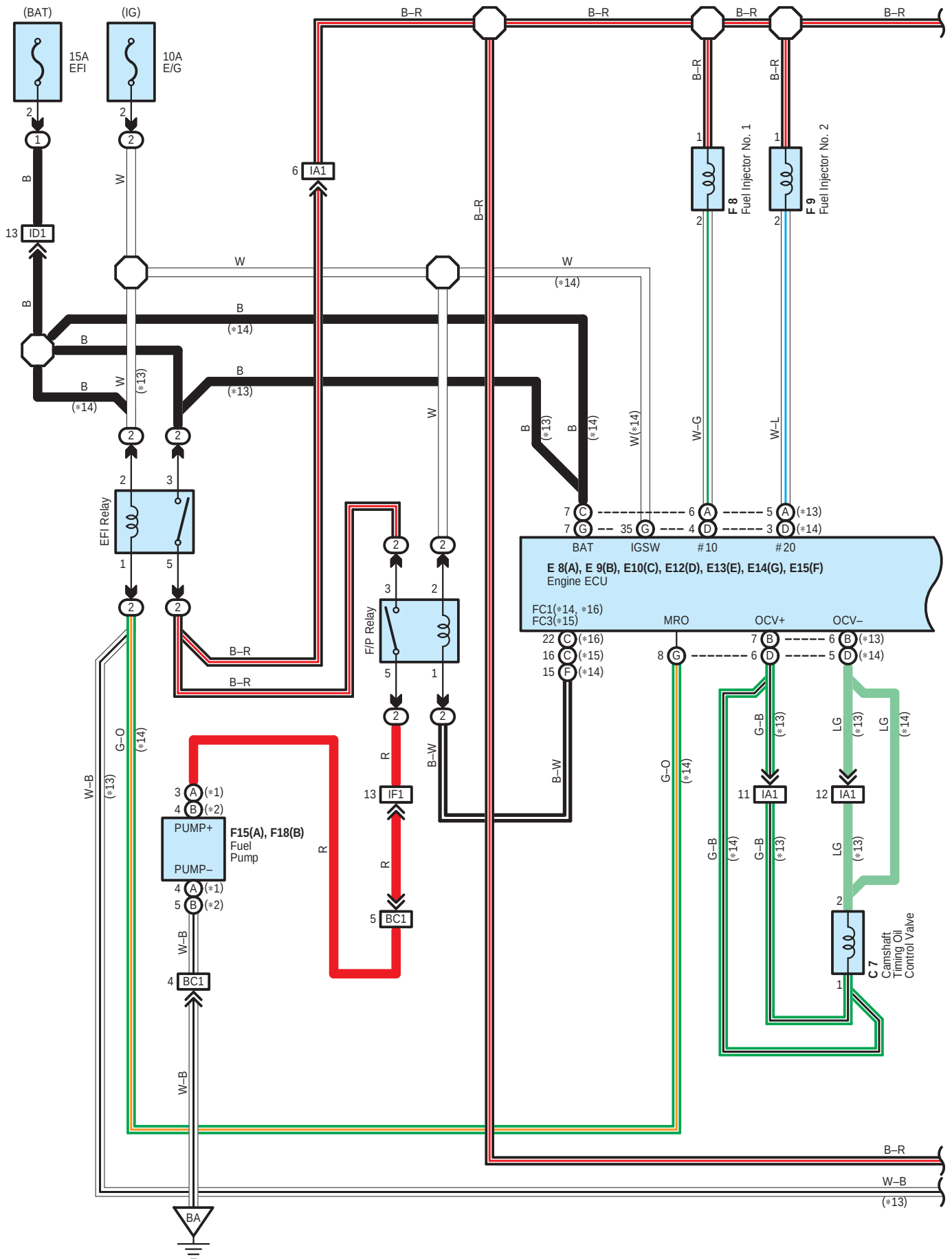
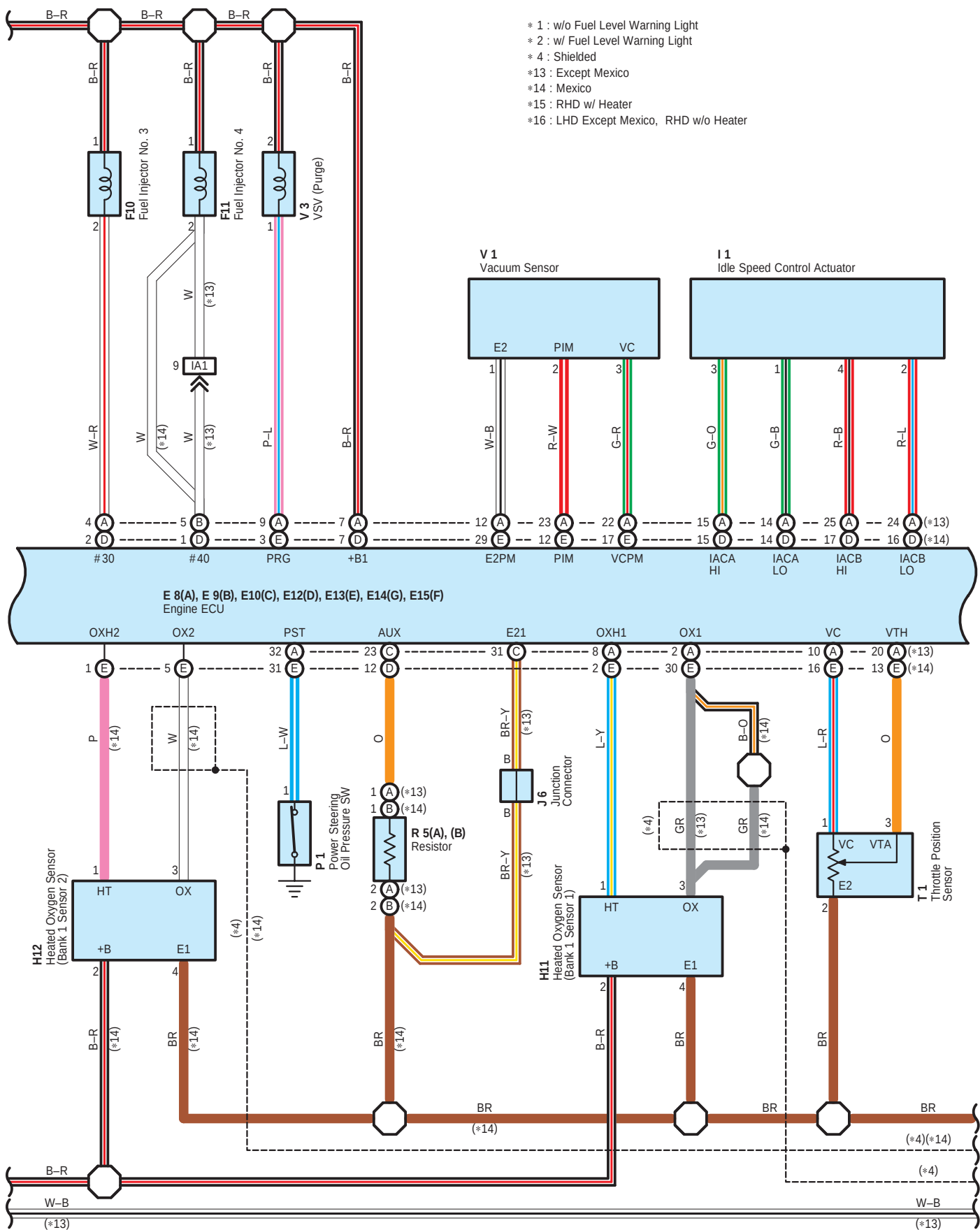
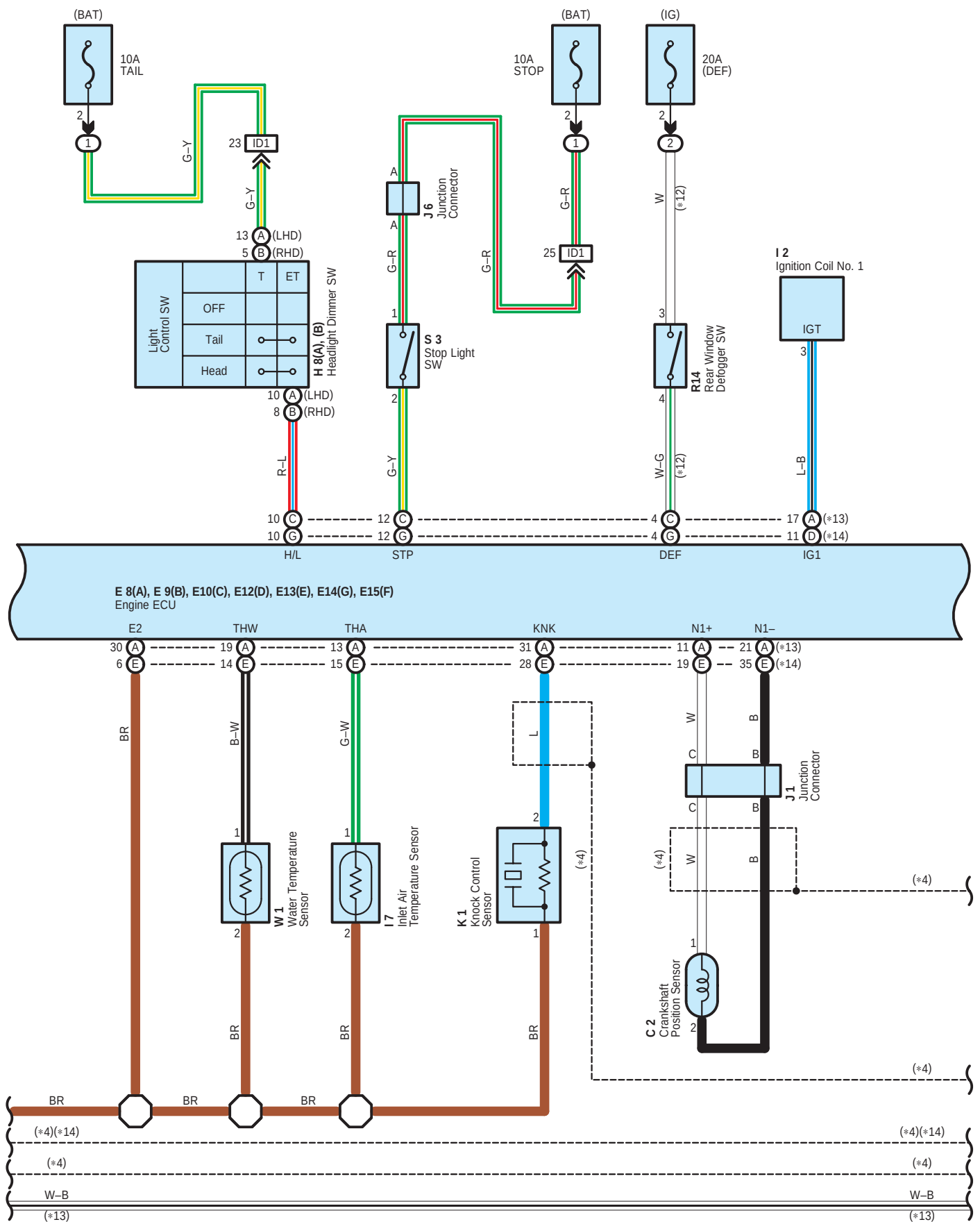
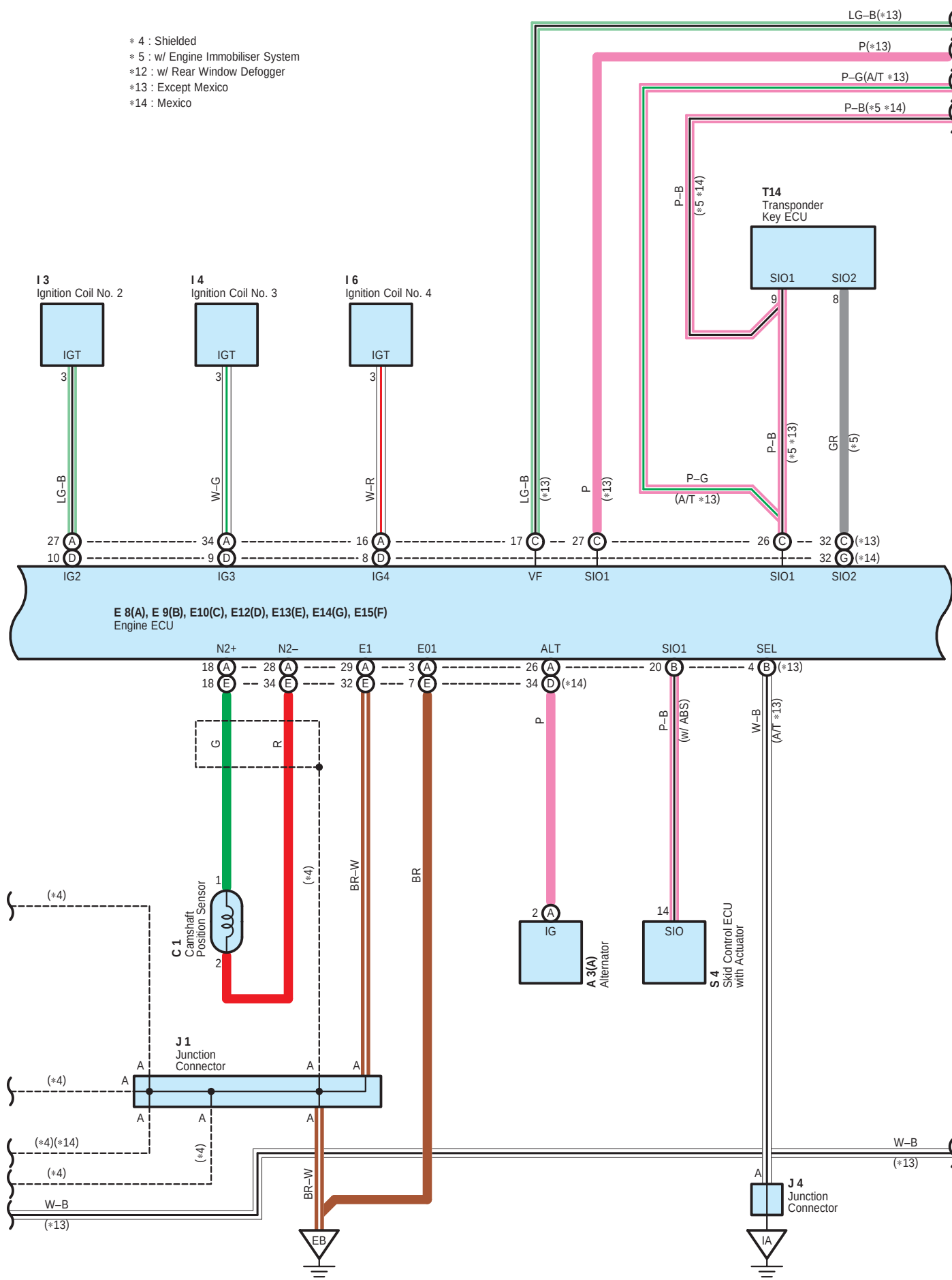




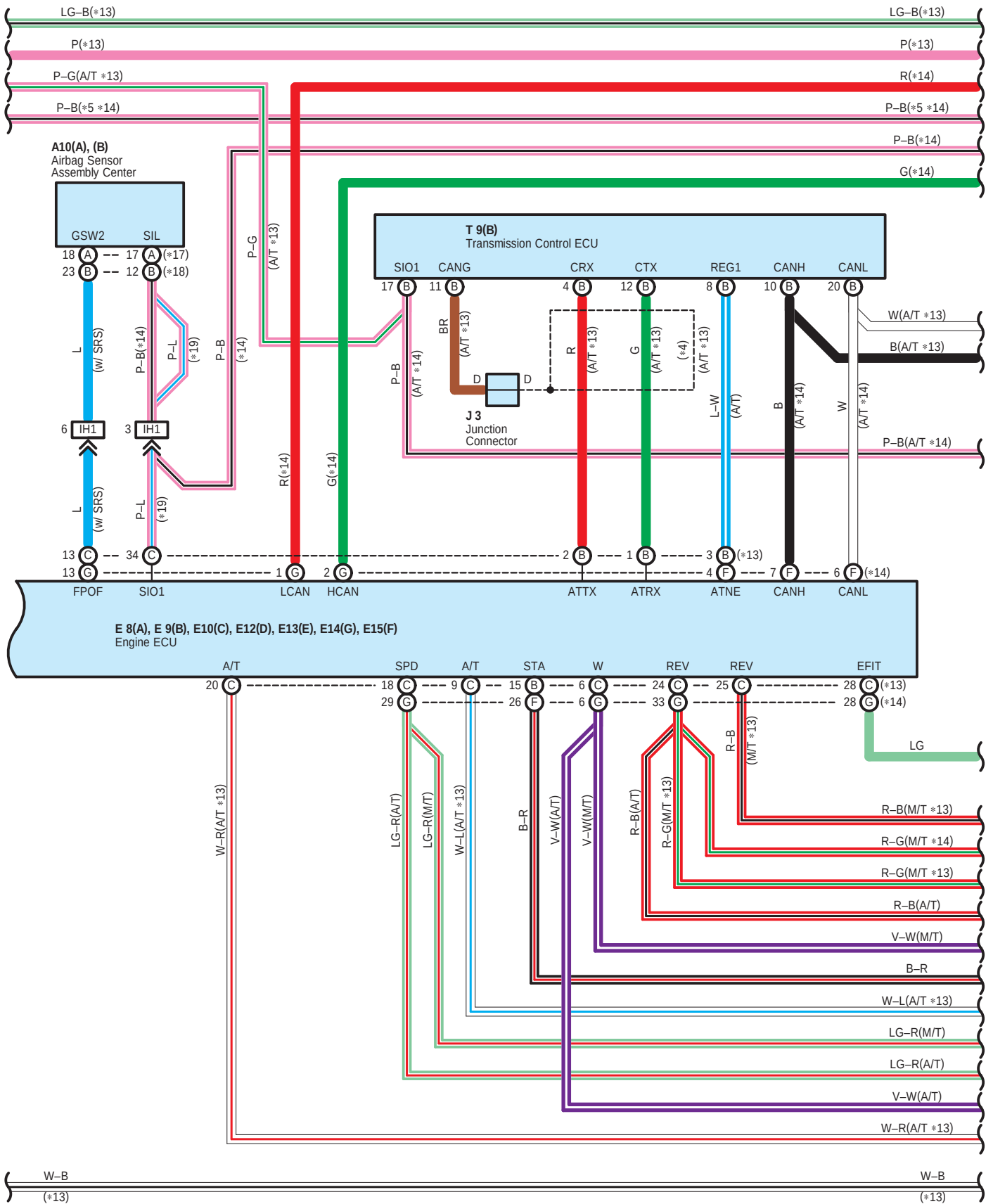


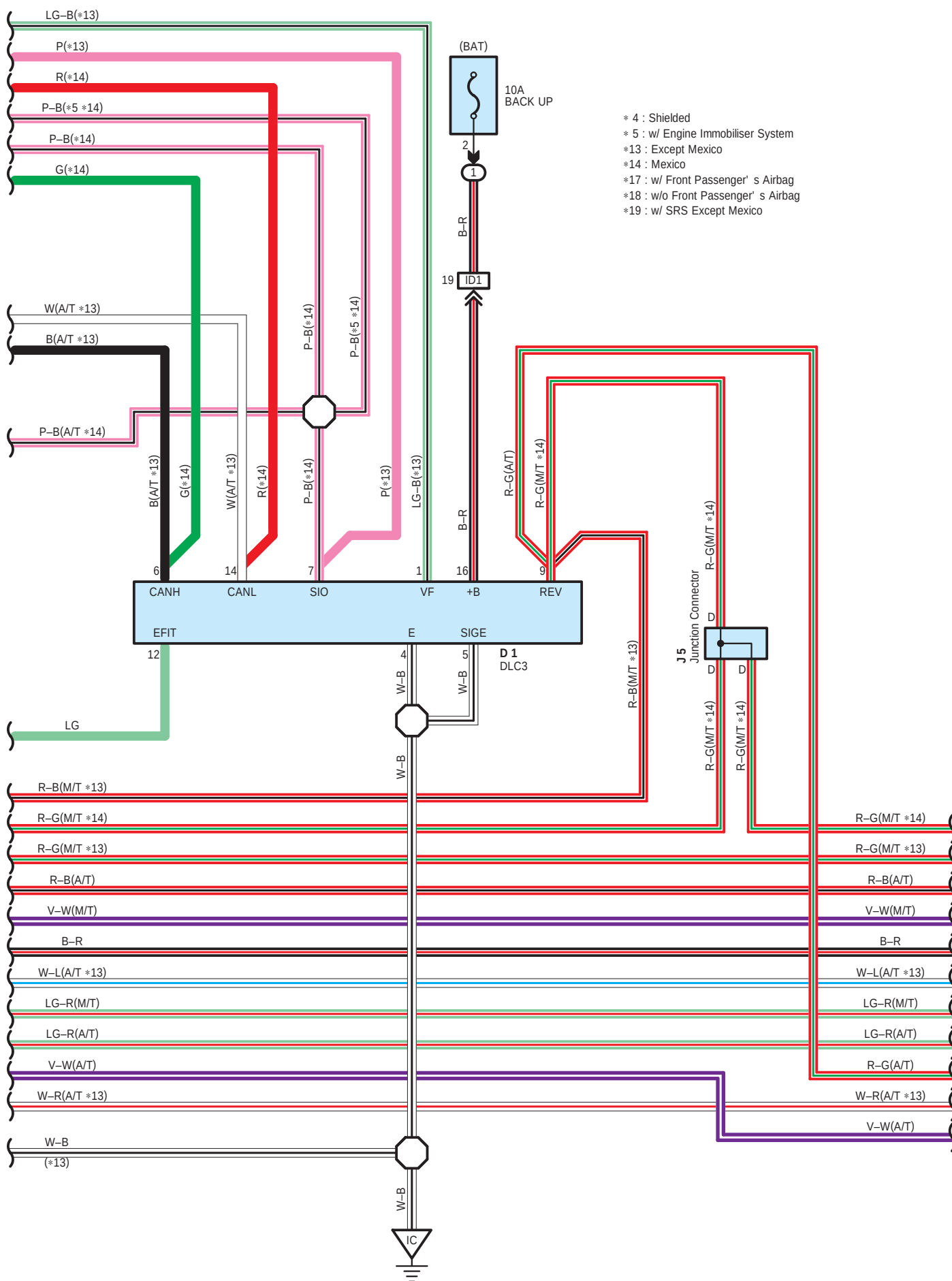
Engine Control

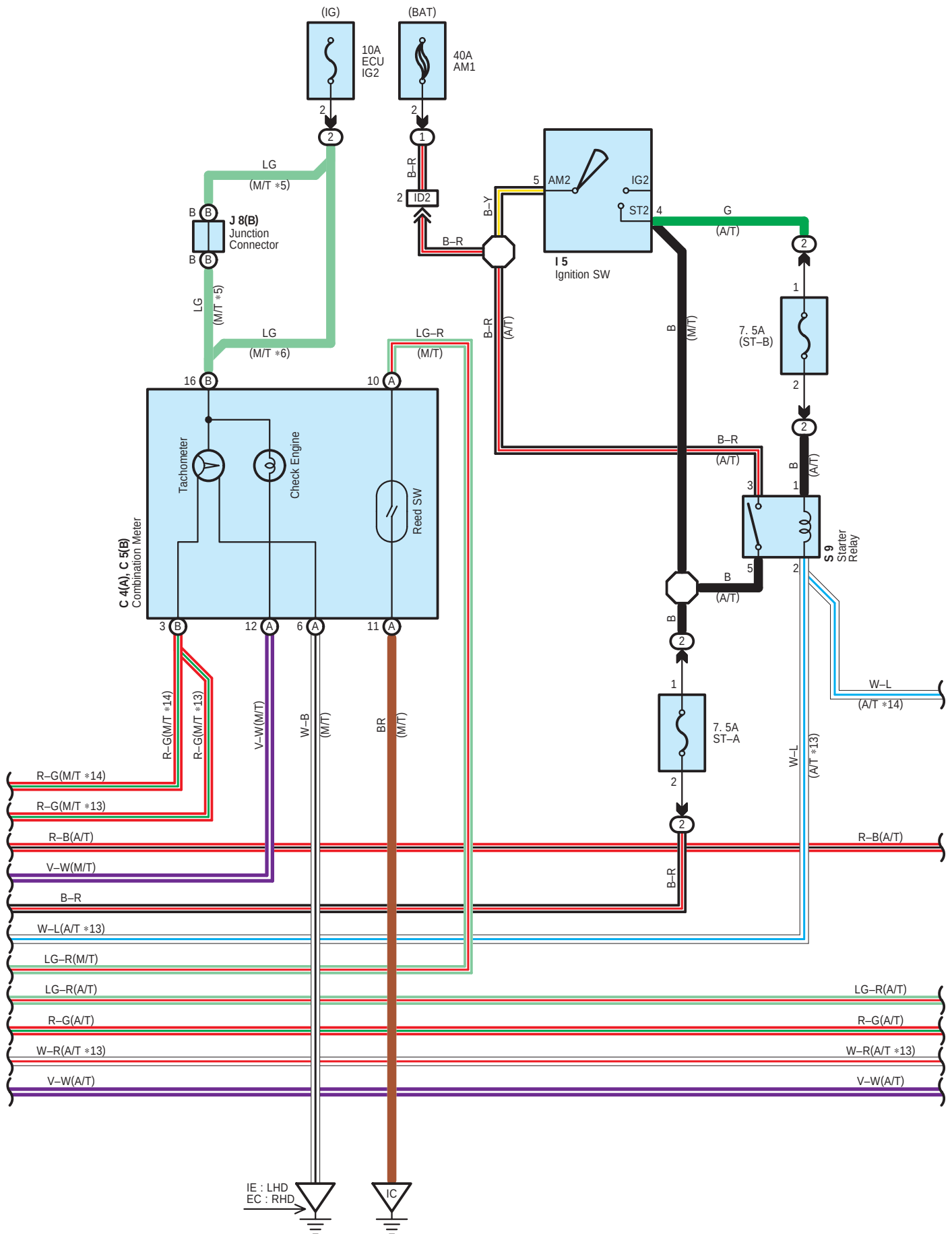


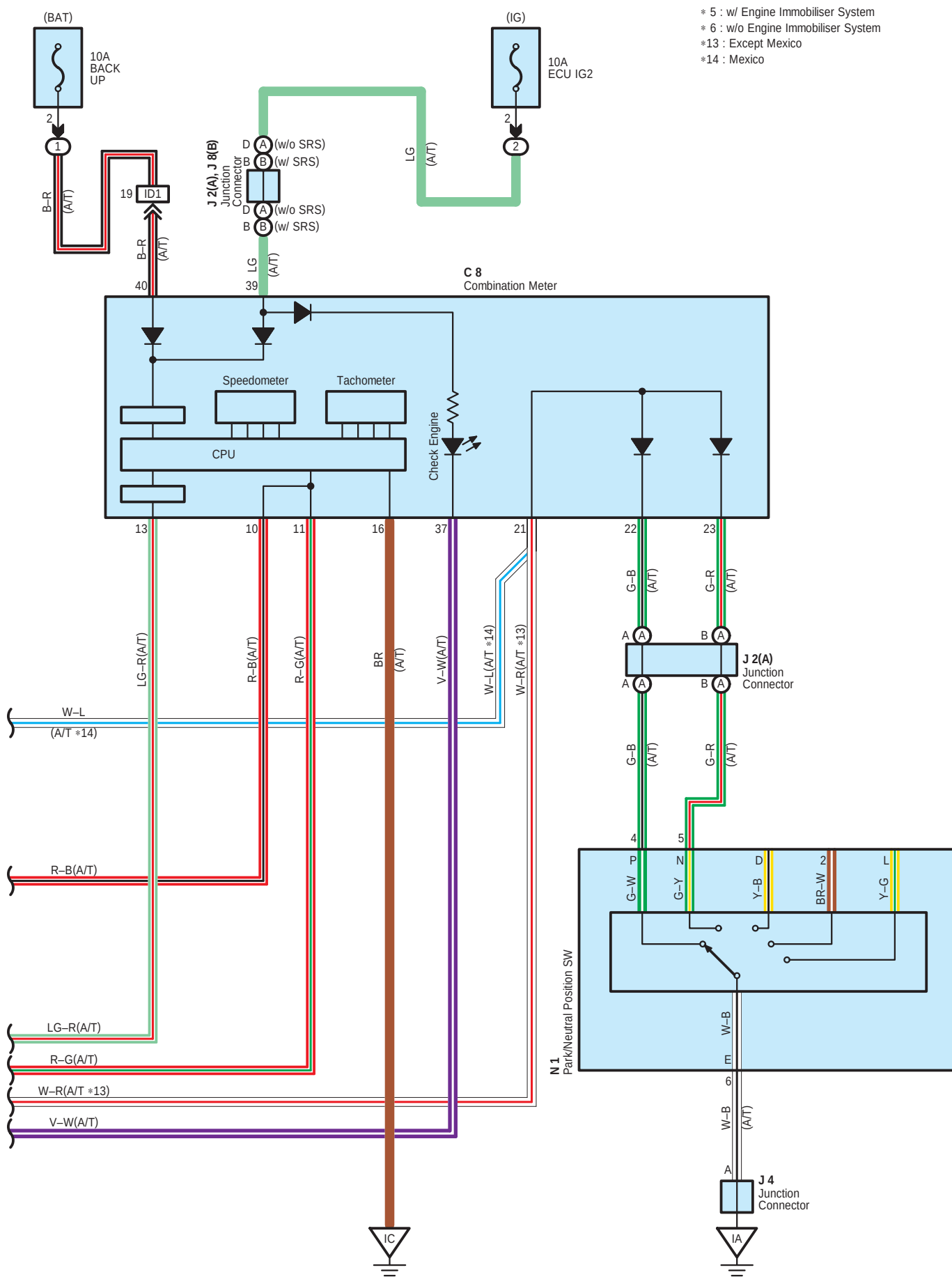


Engine Control









Engine Control

System Outline

* EFI system

The EFI system monitors the engine condition through the signals, which are input from each sensor to engine ECU. The best fuel injection volume is decided based on this data and the program memorized by the engine ECU, and the control signal is output to TERMINALS #10, #20, #30 and #40 of the engine ECU to operate the injector (Inject the fuel). The EFI system produces control of fuel injection operation by the engine ECU in response to the driving conditions.

* ESA system

The ESA system monitors the engine condition through the signals, which are input to the engine ECU from each sensor. The best ignition timing is decided according to this data and the memorized data in the engine ECU, and the control signal is output to TERMINALS IG1, IG2, IG3 and IG4. This signal controls the igniter to provide the best ignition timing for the driving conditions.

* Heated oxygen sensor heater control system

The heated oxygen sensor heater control system turns the heater on when the intake air volume is low (Temp. of exhaust emissions is low), and warms up the heated oxygen sensor to improve detection performance of the sensor. The engine ECU evaluates the signals from each sensor, current is output to TERMINALS HT1B and HT2B, controlling the heater.

* VVT control

VVT control the intake valve timing in accordance with the engine conditions.

1. Diagnosis System

With the diagnosis system, when there is a malfunction in the engine ECU signal system, the malfunctioning system is recorded in the memory. The malfunctioning system can be found by reading the code displayed by the check engine warning lamp.

2. Fail-Safe System

When a malfunction has occurred in any system, if there is a possibility of engine trouble being caused by continued control based on the signals from that system, the fail-safe system either controls the system by using data (Standard values) recorded in the engine ECU memory or else stops the engine.

○ : Parts Location

Code		See Page	Code		See Page	Code		See Page
A3	A	24 (*1)	C7		34 (*4)	F9		26 (*2)
		26 (*2)	C8		28 (LHD)			32 (*3)
		32 (*3)			38 (*6)			34 (*4)
		34 (*4)	D1		28 (LHD)	F10		24 (*1)
A10	A	28 (LHD)			36 (*5)			26 (*2)
		36 (*5)			38 (*6)			32 (*3)
B	28 (LHD)	E8			A			28 (LHD)
C1	24 (*1)		E9	B		36 (*5)	24 (*1)	
	26 (*2)				38 (*6)	26 (*2)		
	32 (*3)				28 (LHD)	32 (*3)		
C2		34 (*4)	E10	C	36 (*5)	F15	A	34 (*4)
		24 (*1)			38 (*6)			30 (LHD)
		26 (*2)			28 (LHD)	F18	B	40 (RHD)
		32 (*3)			36 (*5)			30 (LHD)
34 (*4)	38 (*6)	40 (RHD)						
C4	A	28 (LHD)	E12	D	28 (LHD)	H8	A	28 (LHD)
		36 (*5)	E13	E	28 (LHD)		B	36 (*5)
		38 (*6)	E14	G	28 (LHD)			38 (*6)
C5	B	28 (LHD)	E15	F	28 (LHD)	H11		24 (*1)
		36 (*5)	F8		24 (*1)			26 (*2)
		38 (*6)			26 (*2)			32 (*3)
C7	24 (*1)	32 (*3)			34 (*4)			
	26 (*2)	H12			24 (*1)			
	32 (*3)	F9			24 (*1)			

* 1 : LHD 3SZ-VE

* 2 : LHD K3-VE

* 3 : RHD 3SZ-VE

* 4 : RHD K3-VE

* 5 : RHD w/ Heater

* 6 : RHD w/o Heater

 : Parts Location

Code	See Page	Code		See Page	Code	See Page	
I1	25 (*1)	J1		39 (*6)	R14	39 (*6)	
	27 (*2)	J2	A	29 (LHD)	S3	29 (LHD)	
	33 (*3)			39 (*6)		37 (*5)	
	35 (*4)	J3		29 (LHD)		39 (*6)	
I2	25 (*1)	J4		39 (*6)	S4	25 (*1)	
	27 (*2)			29 (LHD)		33 (*3)	
	33 (*3)			39 (*6)		35 (*4)	
	35 (*4)	J5		29 (LHD)	S9	29 (LHD)	
I3	25 (*1)	J6		29 (LHD)		39 (*6)	
	27 (*2)			37 (*5)	T1	25 (*1)	
	33 (*3)			39 (*6)		27 (*2)	
	35 (*4)	J8	B	29 (LHD)		33 (*3)	
25 (*1)	37 (*5)			35 (*4)			
I4	27 (*2)	K1		25 (*1)	T9	B	29 (LHD)
	33 (*3)			27 (*2)			39 (*6)
	35 (*4)			33 (*3)	T14		29 (LHD)
	29 (LHD)			35 (*4)			37 (*5)
I5	37 (*5)	N1		29 (LHD)	V1	25 (*1)	
	39 (*6)			39 (*6)		27 (*2)	
	25 (*1)			25 (*1)		33 (*3)	
I6	27 (*2)	P1		27 (*2)		V3	35 (*4)
	33 (*3)			33 (*3)	25 (*1)		
	35 (*4)			35 (*4)	27 (*2)		
	25 (*1)			R5	A	29 (LHD)	W1
27 (*2)	37 (*5)	35 (*4)					
33 (*3)	39 (*6)	25 (*1)					
35 (*4)	B		29 (LHD)		27 (*2)		
J1		29 (LHD)	R14		29 (LHD)	33 (*3)	
	37 (*5)	37 (*5)			35 (*4)		

 : Relay Blocks

Code	See Page	Relay Blocks (Relay Block Location)
1	22	Engine Room R/B (Engine Compartment Right)
2	23 (LHD)	Fuse Block (Left Kick Panel)
	23 (RHD)	Fuse Block (Right Kick Panel)

* 1 : LHD 3SZ-VE * 2 : LHD K3-VE * 3 : RHD 3SZ-VE * 4 : RHD K3-VE * 5 : RHD w/ Heater * 6 : RHD w/o Heater

Engine Control

: Connector Joining Wire Harness and Wire Harness

Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
IA1	44 (LHD)	Engine Wire and Instrument Panel Wire (Right Kick Panel)
	48 (*5)	Engine Wire and Instrument Panel Wire (Left Kick Panel)
	49 (*6)	
ID1	44 (LHD)	Engine Room Main Wire and Instrument Panel Wire (Right Kick Panel)
	48 (*5)	Engine Room Main Wire and Instrument Panel Wire (Cowl Side Panel RH)
	49 (*6)	
ID2	44 (LHD)	Engine Room Main Wire and Instrument Panel Wire (Right Kick Panel)
	48 (*5)	Engine Room Main Wire and Instrument Panel Wire (Cowl Side Panel RH)
	49 (*6)	
IF1	44 (LHD)	Instrument Panel Wire and Floor Wire (Left Kick Panel)
	48 (*5)	Instrument Panel Wire and Floor Wire (Right Kick Panel)
	49 (*6)	
IH1	44 (LHD)	Instrument Panel Wire and Instrument Panel Wire (Instrument Panel RH)
	48 (*5)	Instrument Panel Wire and Instrument Panel Wire (Instrument Panel LH)
BC1	45 (LHD)	Fuel Pump Wire and Floor Wire (Near the Fuel Tank)
	50 (RHD)	

: Ground Points

Code	See Page	Ground Points Location
EB	42 (*1)	Rear Side of Engine Block
	43 (*2)	
	46 (*3)	
	47 (*4)	
EC	46 (*3)	Left Fender Apron
	47 (*4)	
IA	44 (LHD)	Right Kick Panel
	49 (*6)	Left Kick Panel
IC	44 (LHD)	Cowl Side Panel LH
	48 (*5)	Right Kick Panel
	49 (*6)	
IE	44 (LHD)	Cowl Side Panel LH
BA	45 (LHD)	Rear Quarter Panel RH
	50 (RHD)	

* 1 : LHD 3SZ-VE * 2 : LHD K3-VE * 3 : RHD 3SZ-VE * 4 : RHD K3-VE * 5 : RHD w/ Heater * 6 : RHD w/o Heater

