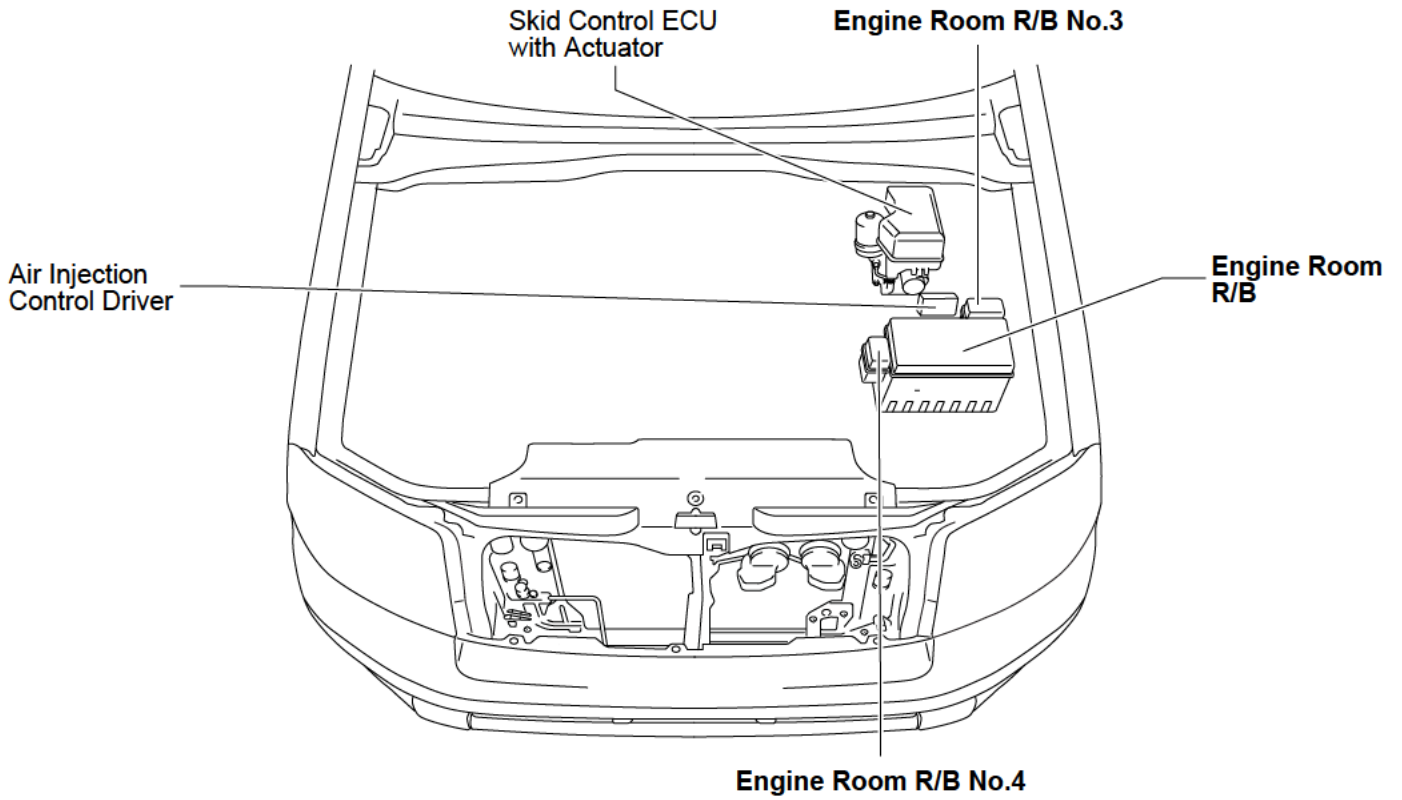
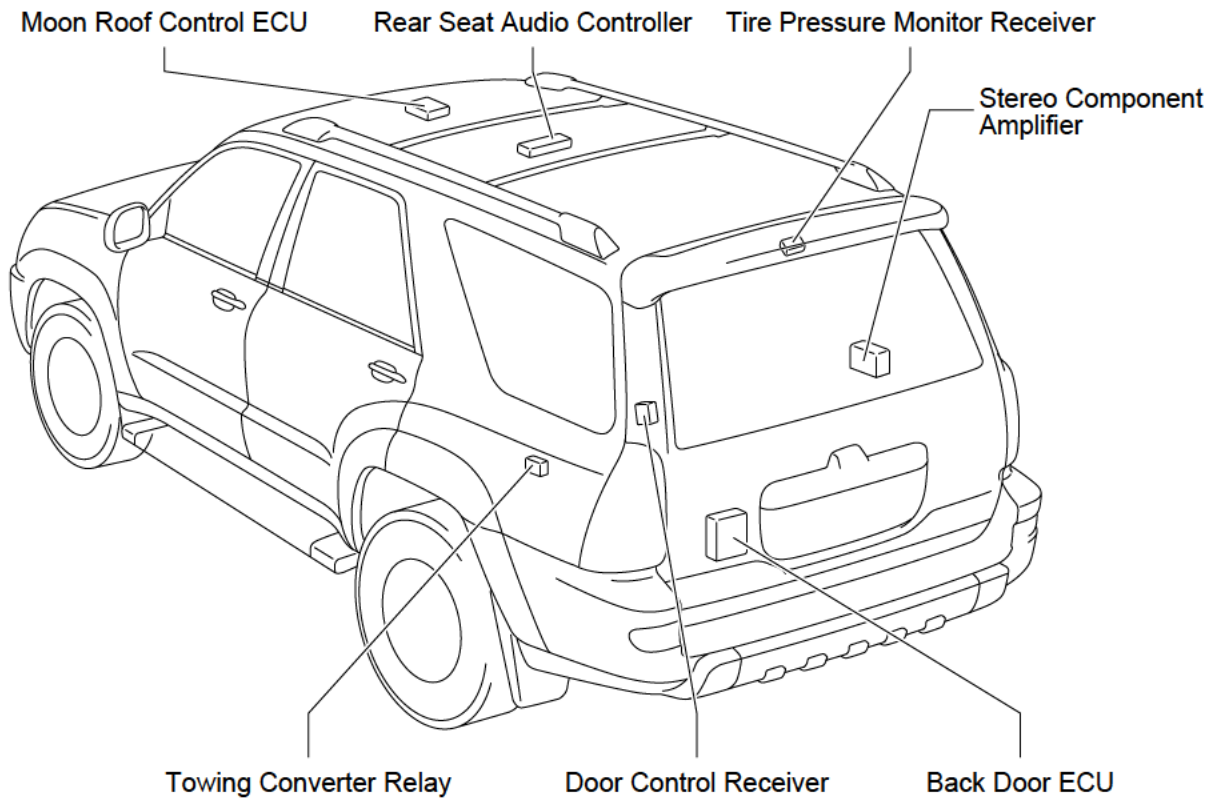


F RELAY LOCATIONS

[Engine Compartment]

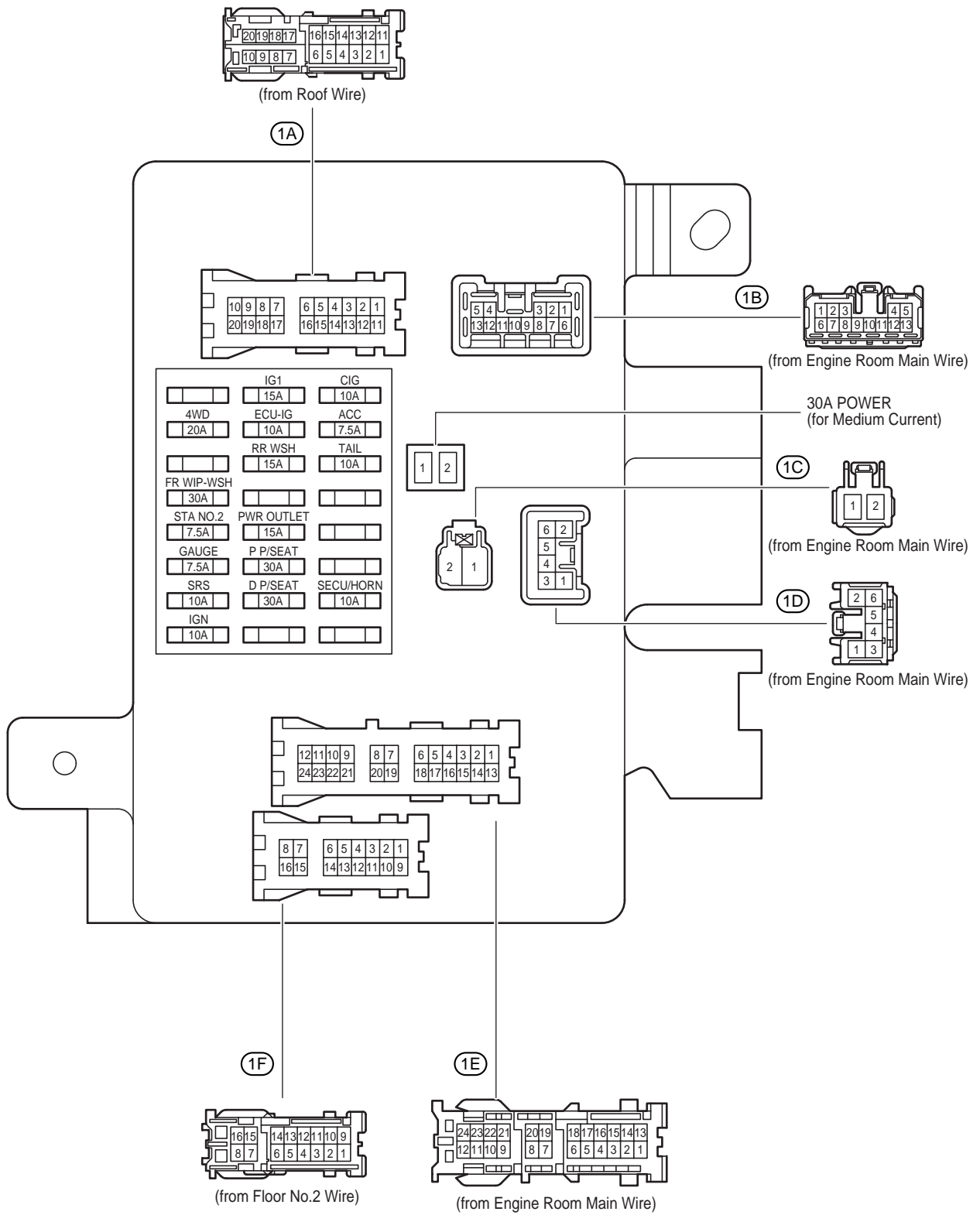


[Body]



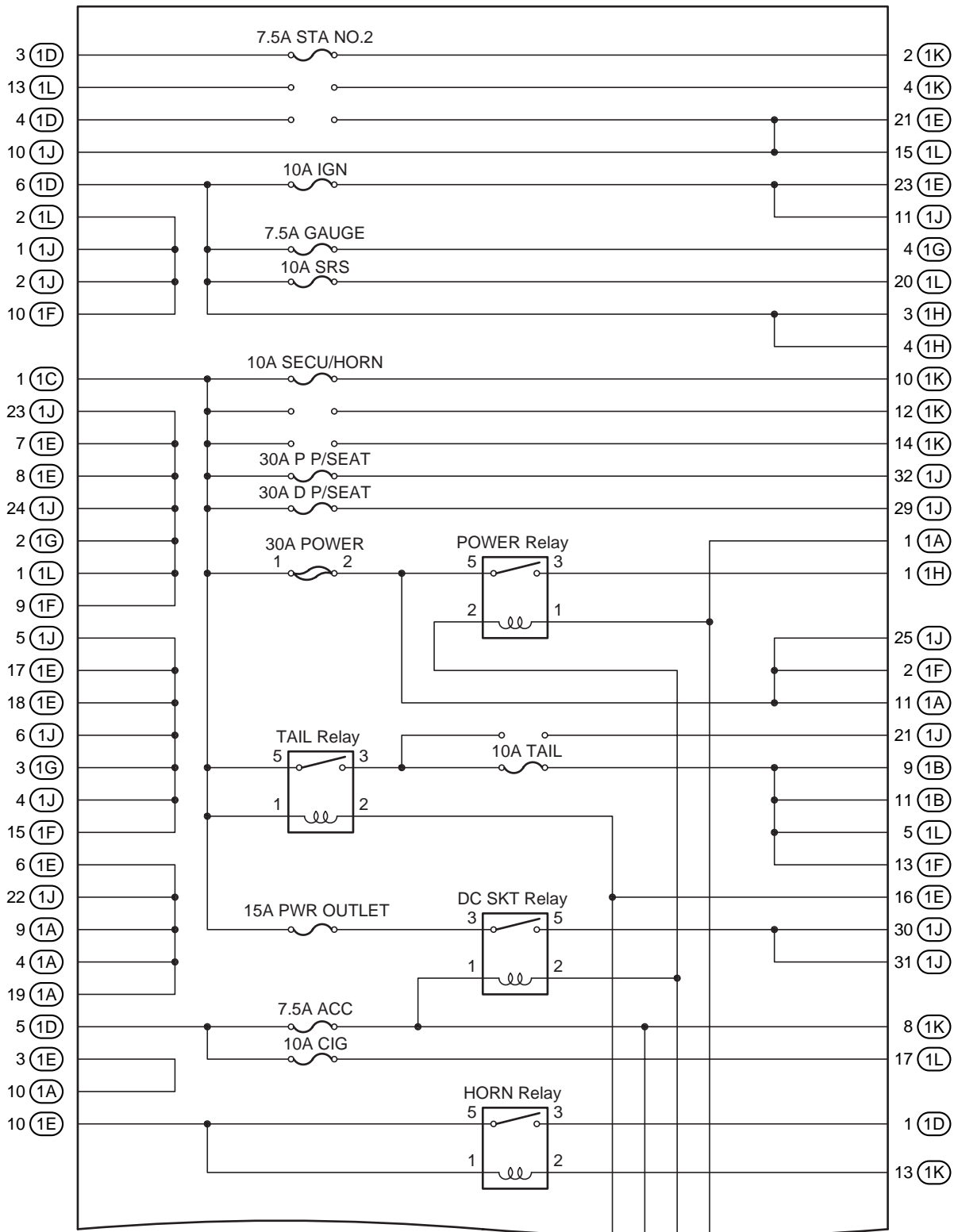
F RELAY LOCATIONS

○ : Driver Side J/B Lower Finish Panel (See Page 21)



F RELAY LOCATIONS

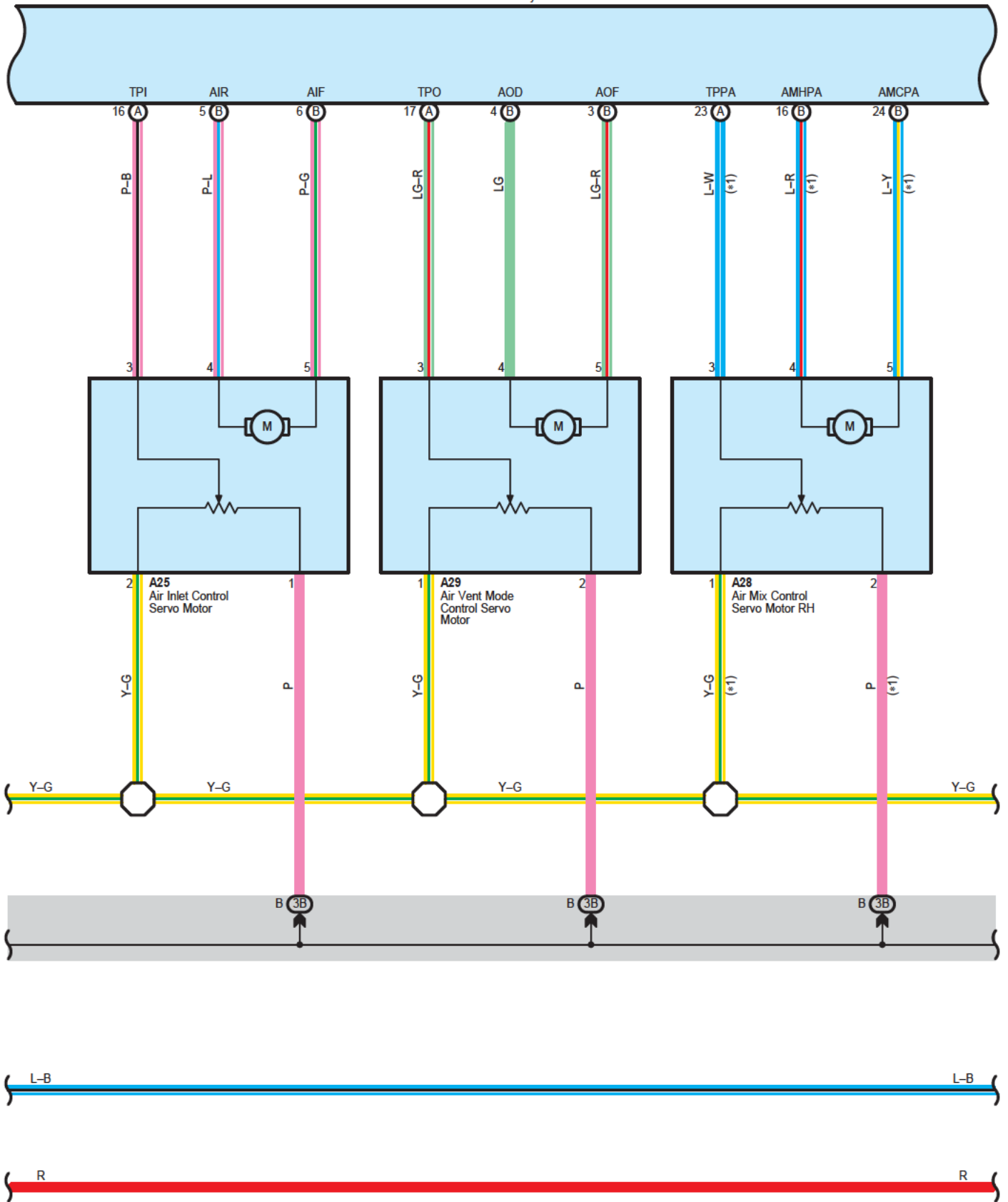
[Driver Side J/B Inner Circuit]



(Cont. Next Page)

Air Conditioning

A16(A), A17(B)
A/C Control Assembly



 : **Parts Location**

Code	See Page	Code	See Page	Code	See Page		
A37	36	J9	B	38	S20	41	
C5	37	J29		38	S21	41	
C9	B	J42		40	S22	A	41
C10	C	R1	A	39	S23	B	41
C13	37	R4	B	39	S28	33 (2UZ-FE)	
D22	40	R5	C	39		35 (1GR-FE)	
D23	40	R16		41	S31		39
E8	37	R17		41	V14		39
J6	38	R18		41	W4		41
J7	38	R19		41			
J8	A	R20		41			

 : **Relay Blocks**

Code	See Page	Relay Blocks (Relay Block Location)
2	22	Engine Room R/B (Engine Compartment Left)

 : **Junction Block and Wire Harness Connector**

Code	See Page	Junction Block and Wire Harness (Connector Location)
1G	25	Instrument Panel Wire and Driver Side J/B (Lower Finish Panel)
1K		
3A	28	Instrument Panel Wire and Center J/B (Instrument Panel Brace RH)
3B		
3C		
3D		
3E		

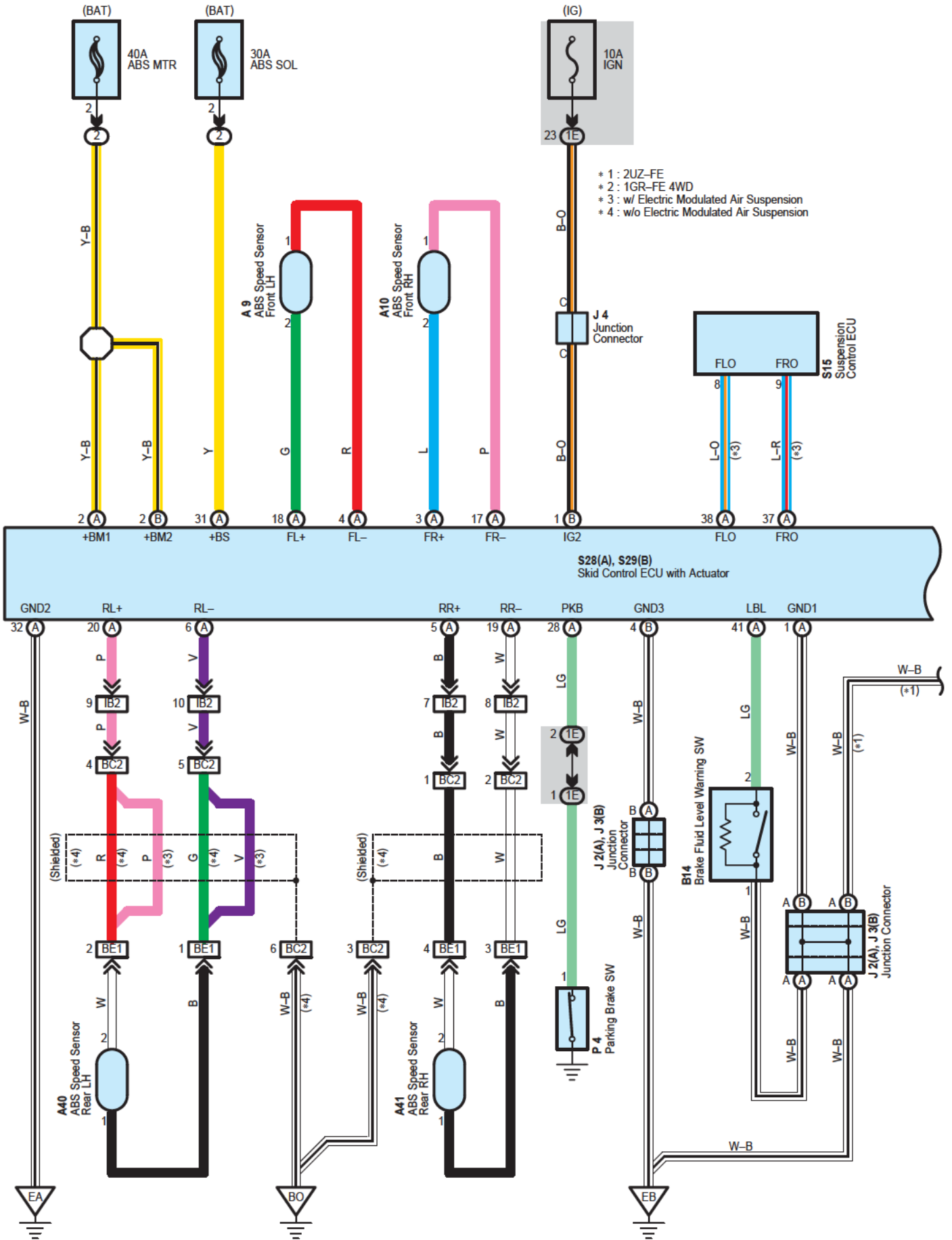
 : **Connector Joining Wire Harness and Wire Harness**

Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
IA2	46	Front Door LH Wire and Instrument Panel Wire (Left Kick Panel)
IC2	46	Instrument Panel Wire and Engine Room Main Wire (Left Kick Panel)
IC3		
IC4		
ID1	46	Radio Installation Wiring Sub Assembly and Instrument Panel Wire (Left Kick Panel)
IE1	46	Instrument Panel Wire and Floor No.2 Wire (Left Kick Panel)
II1	46	Instrument Panel Wire and Instrument Panel Wire (Instrument Panel Brace LH)
IK1	47	Instrument Panel Wire and Instrument Panel Wire (Left Upper Side of the Glove Box)
IM1	47	Engine Wire and Instrument Panel Wire (Right Side of Blower Unit)
IO2	47	Instrument Panel Wire and Floor Wire (Right Kick Panel)
IO3		
IP2	47	Front Door RH Wire and Instrument Panel Wire (Right Kick Panel)
BA1	48	Rear Door No.2 Wire and Instrument Panel Wire (Left Center Pillar)
BB1	48	Rear Door No.1 Wire and Instrument Panel Wire (Right Center Pillar)
BJ1	48	Radio Installation Wiring Sub Assembly and Radio Installation Wiring Sub Assembly (Center of Roof)

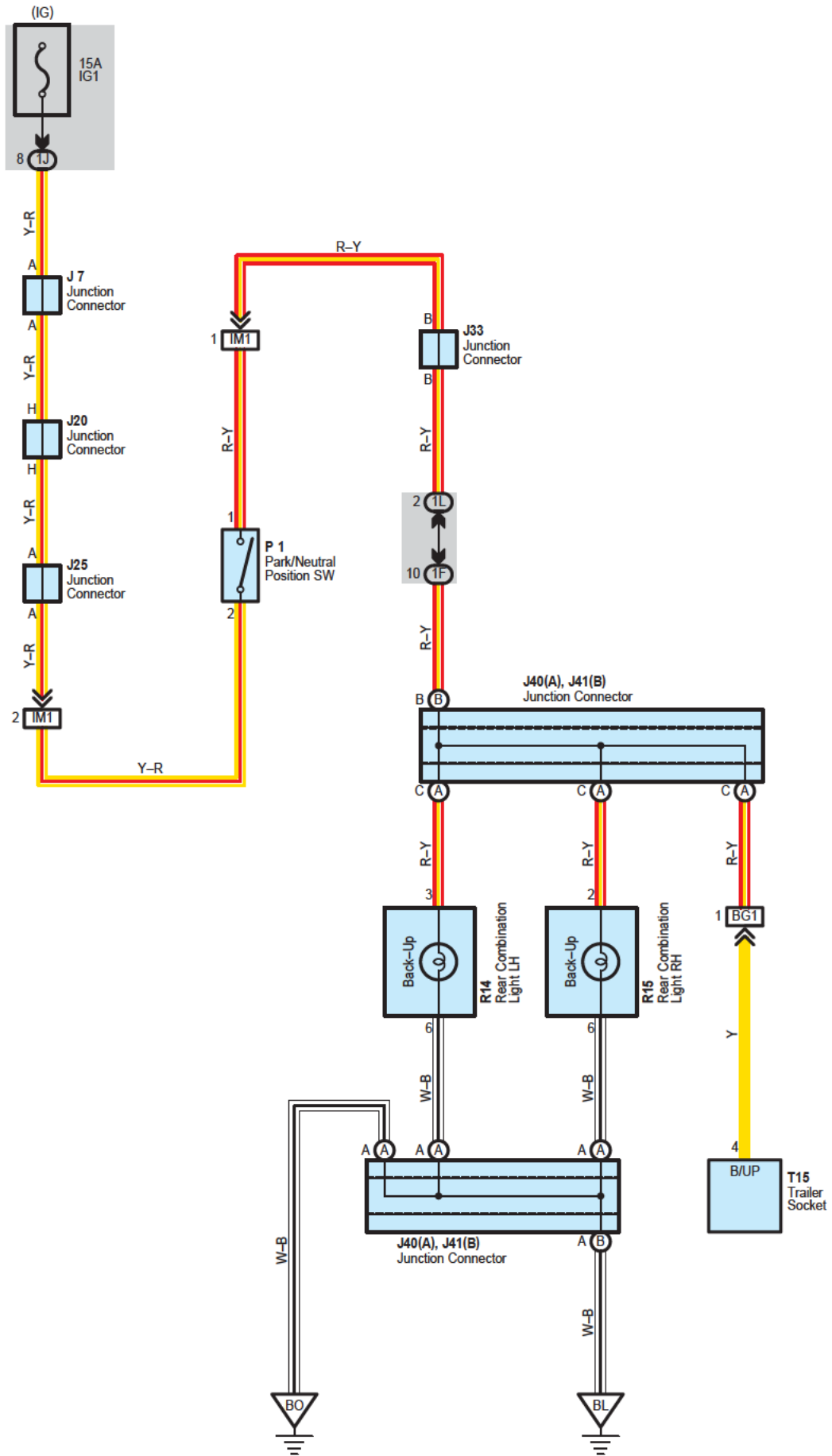
 : **Ground Points**

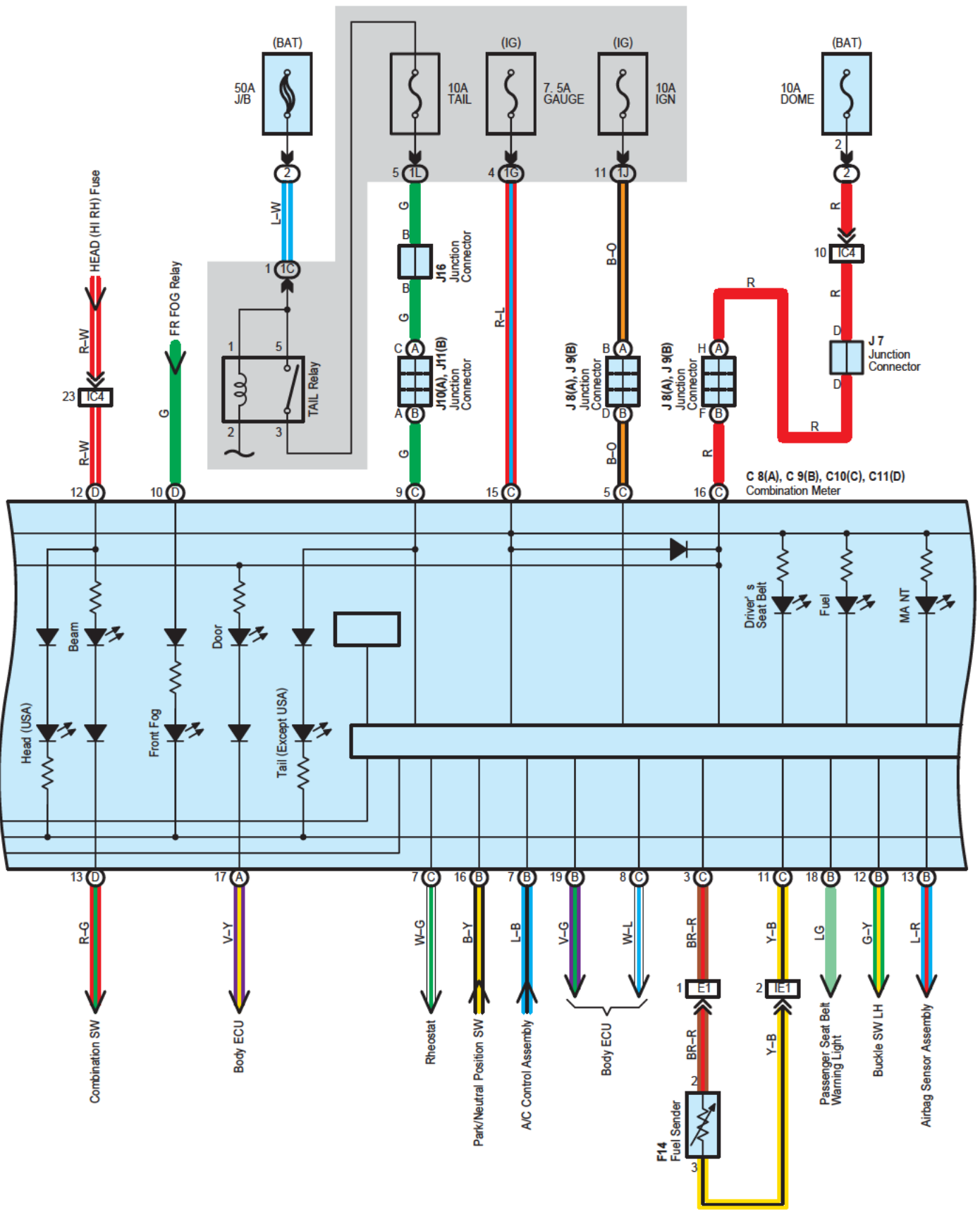
Code	See Page	Ground Points Location
ED	44 (2UZ-FE)	Left Bank Cylinder Head
EE	45 (1GR-FE)	Rear Side of Right Bank Cylinder Block
IJ	46	Instrument Panel Brace RH
BP	48	Rear Pillar RH

ABS, TRAC, VSC, Auto LSD, DAC and HAC

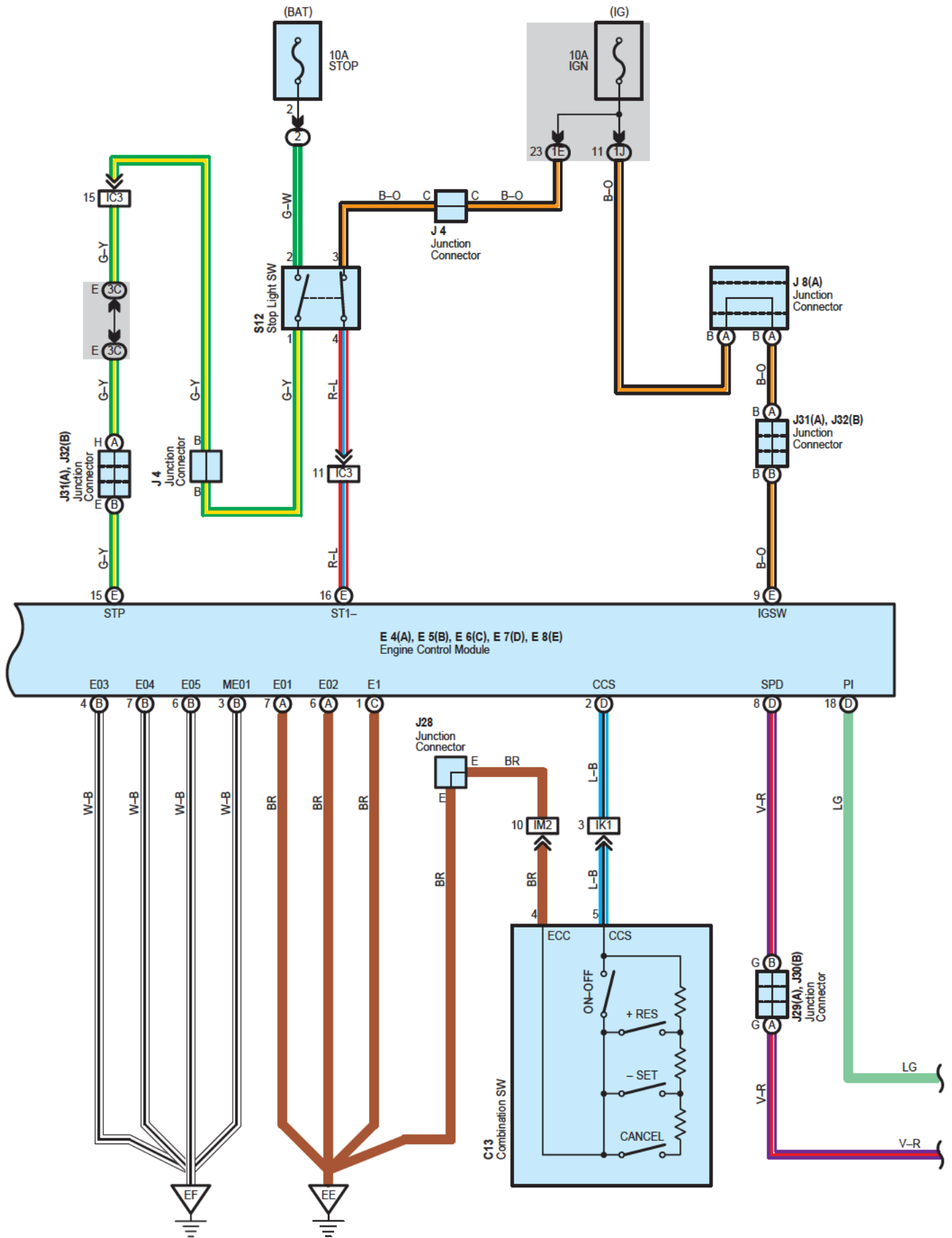


Back-Up Light





Cruise Control for 1GR-FE



Cruise Control for 1GR-FE

System Outline

The cruise control system is a constant vehicle speed controller in which control of the switch on the instrument panel makes it possible to automatically adjust the opening of the engine throttle valve without depressing of the accel pedal.

1. Set Operation

When the ON-OFF SW is turned on, the system starts preparations necessary for the cruise control and turns on the indicator light in the combination meter.

2. Set Speed Control

When the - SET SW is operated with the cruise control main SW turned on during travelling, the constant vehicle speed is controlled.

3. Coast Control

When the - SET SW is kept turned on during cruise control travelling, the engine control module controls the throttle valve to decelerate the vehicle. Every time the - SET SW is turned on instantaneously, the vehicle speed is decelerated approximately 1.5 km/h.

4. Accel Control

When the + RES SW is kept turned on during cruise control travelling, the engine control module controls the throttle valve to accelerate the vehicle. Every time the + RES SW is turned on instantaneously, the vehicle speed is accelerated approximately 1.5 km/h.

5. Resume Control

When the vehicle speed is above the low speed limit (Approximately 40 km/h, 25 mph) if the cruise control is cancelled, use of the + RES SW accelerates the vehicle to the speed level used before canceling the cruise control.

6. Manual Cancel Mechanism

If any of the following signals is input during cruise control travelling, the cruise control is cancelled.

- * The stop light SW is turned on.
- * The CANCEL SW is turned on.
- * The ON-OFF SW is turned off.
- * Gear is shifted from D position to other positions than D.

7. Auto Cancel Operation

* If any of the following conditions are detected, the set speed is erased and 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) The actual vehicle speed becomes -16 km/h slower than the set speed

* If the following condition is detected, the set speed is kept and the control is canceled.

- (1) The actual vehicle speed becomes slower than the minimum speed limit.

8. Overdrive Control Function

Overdrive is sometimes cut off on gradients during cruise control driving. When end of climbing gradient is determined by throttle opening degree information after overdrive is canceled, control is reset to overdrive condition after overdrive resetting timer operation. Also, when overdrive is cut off during accelerator resuming control, control is reset to overdrive condition when accelerator resuming control is finished.

Cruise Control for 2UZ-FE

System Outline

The cruise control system is a constant vehicle speed controller in which control of the switch on the instrument panel makes it possible to automatically adjust the opening of the engine throttle valve without depressing of the accel pedal.

1. Set Operation

When the ON-OFF SW is turned on, the system starts preparations necessary for the cruise control and turns on the indicator light in the combination meter.

2. Set Speed Control

When the - SET SW is operated with the cruise control main SW turned on during travelling, the constant vehicle speed is controlled.

3. Coast Control

When the - SET SW is kept turned on during cruise control travelling, the engine control module controls the throttle valve to decelerate the vehicle. Every time the - SET SW is turned on instantaneously, the vehicle speed is decelerated approximately 1.5 km/h.

4. Accel Control

When the + RES SW is kept turned on during cruise control travelling, the engine control module controls the throttle valve to accelerate the vehicle. Every time the + RES SW is turned on instantaneously, the vehicle speed is accelerated approximately 1.5 km/h.

5. Resume Control

When the vehicle speed is above the low speed limit (Approximately 40 km/h, 25 mph) if the cruise control is cancelled, use of the + RES SW accelerates the vehicle to the speed level used before canceling the cruise control.

6. Manual Cancel Mechanism

If any of the following signals is input during cruise control travelling, the cruise control is cancelled.

- * The stop light SW is turned on.
- * The CANCEL SW is turned on.
- * The ON-OFF SW is turned off.
- * Gear is shifted from D position to other positions than D.

7. Auto Cancel Operation

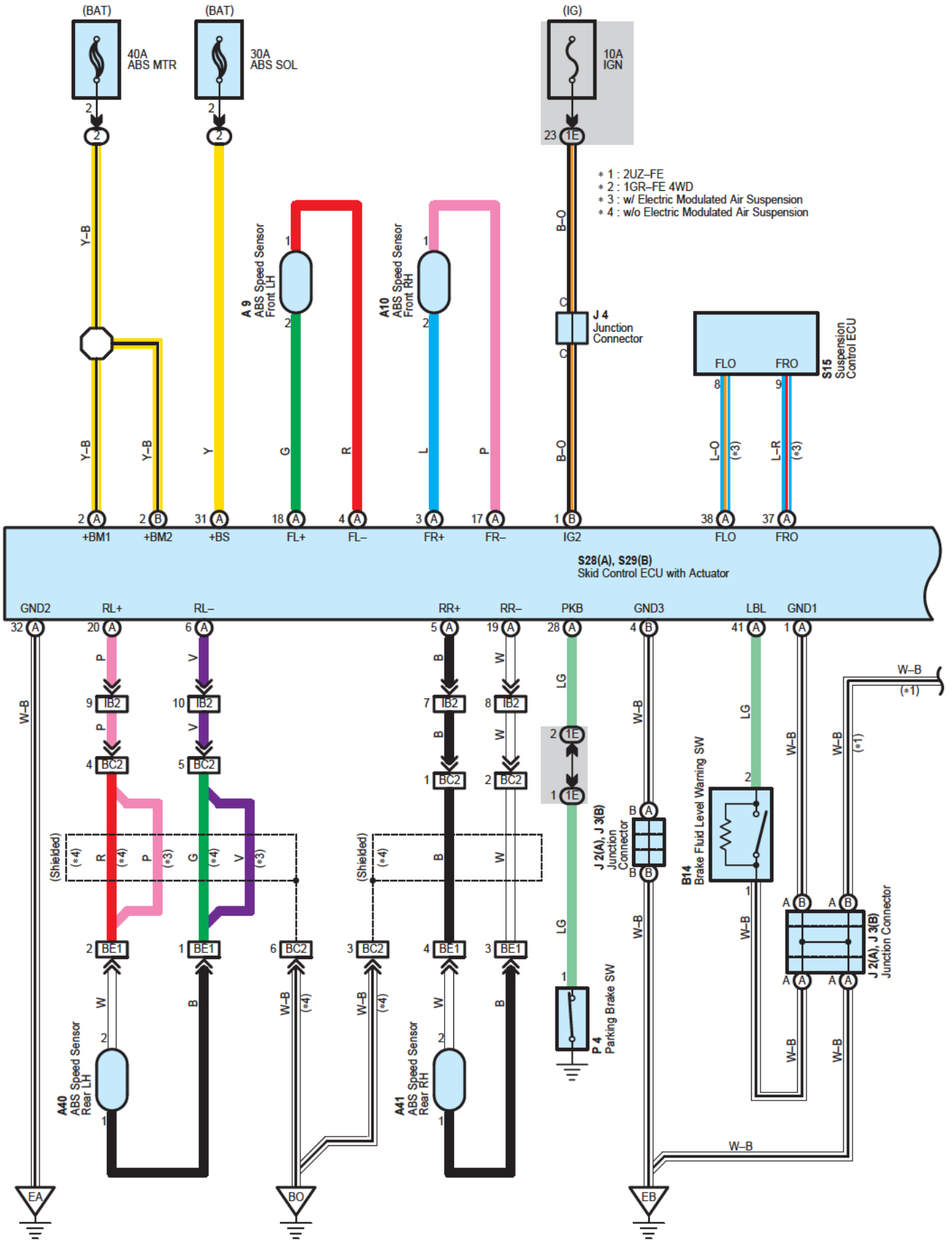
* If any of the following conditions are detected, the set speed is erased and the control is canceled.

- (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) The actual vehicle speed becomes -16 km/h slower than the set speed
- * If the following condition is detected, the set speed is kept and the control is canceled.
- (1) The actual vehicle speed becomes slower than the minimum speed limit.

8. Overdrive Control Function

Overdrive is sometimes cut off on gradients during cruise control driving. When end of climbing gradient is determined by throttle opening degree information after overdrive is canceled, control is reset to overdrive condition after overdrive resetting timer operation. Also, when overdrive is cut off during accelerator resuming control, control is reset to overdrive condition when accelerator resuming control is finished.

ABS, TRAC, VSC, Auto LSD, DAC and HAC



ECT and A/T Indicator for 1GR-FE

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.

B 4(A), B 5(B)
Body ECU

