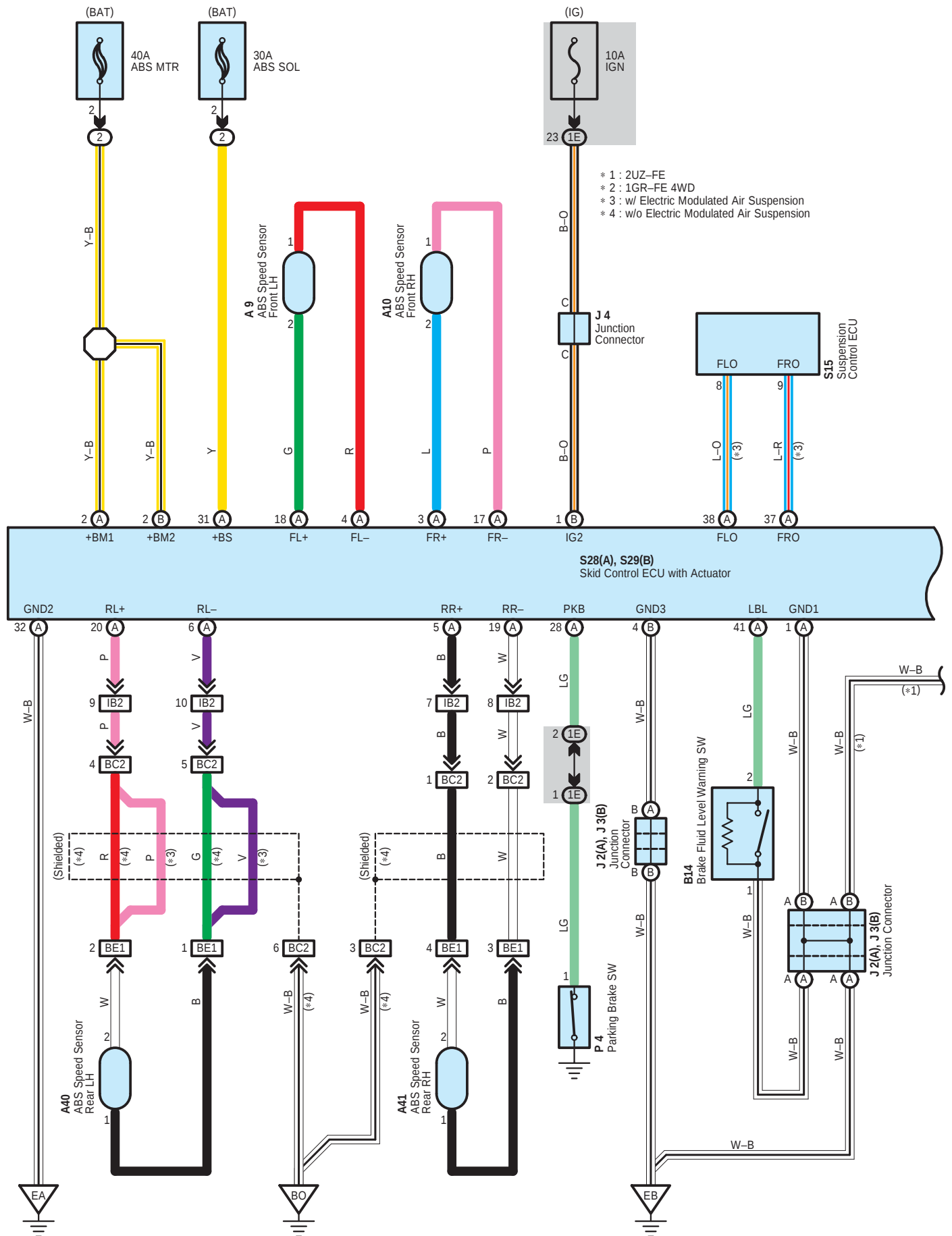
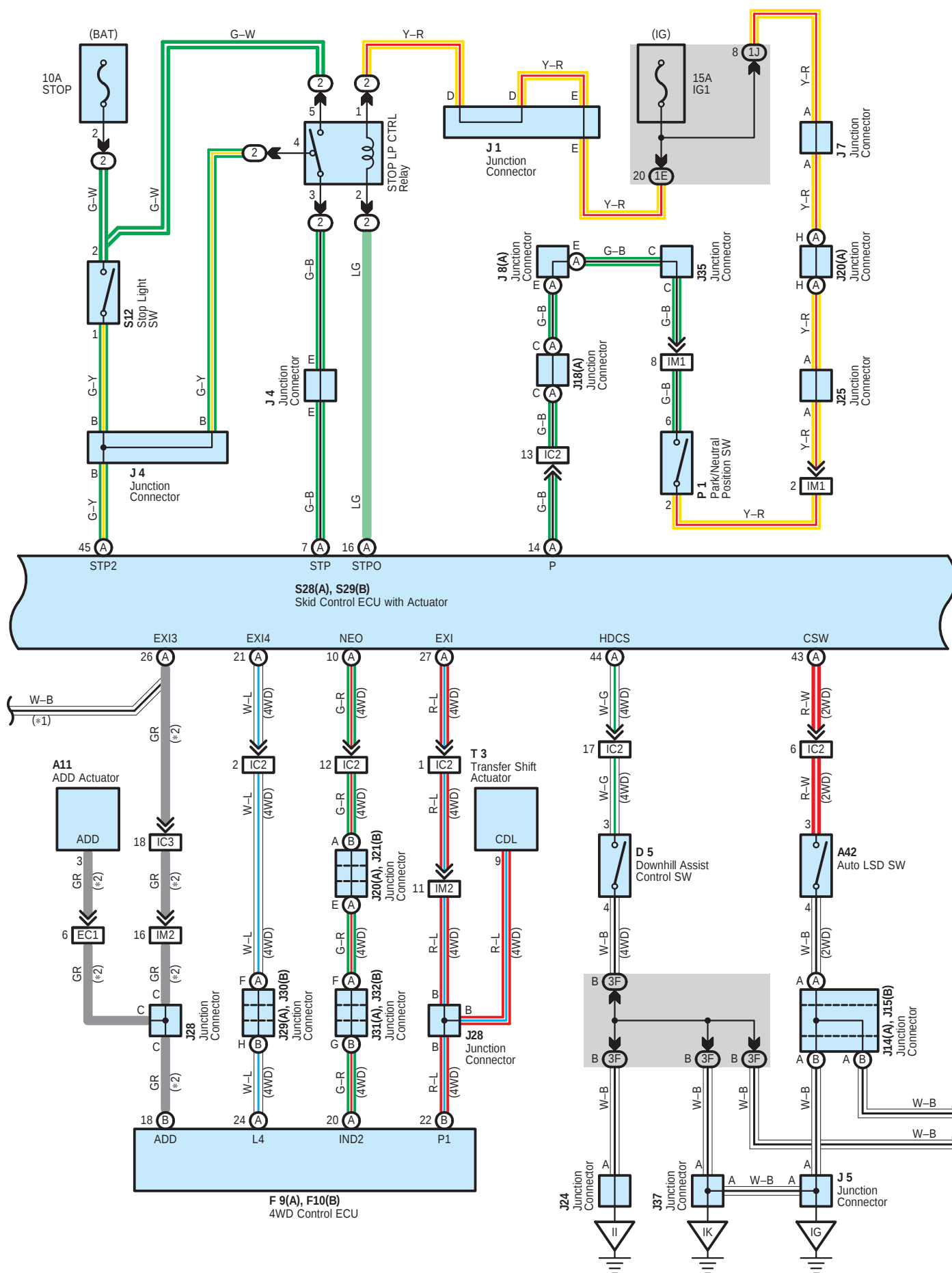
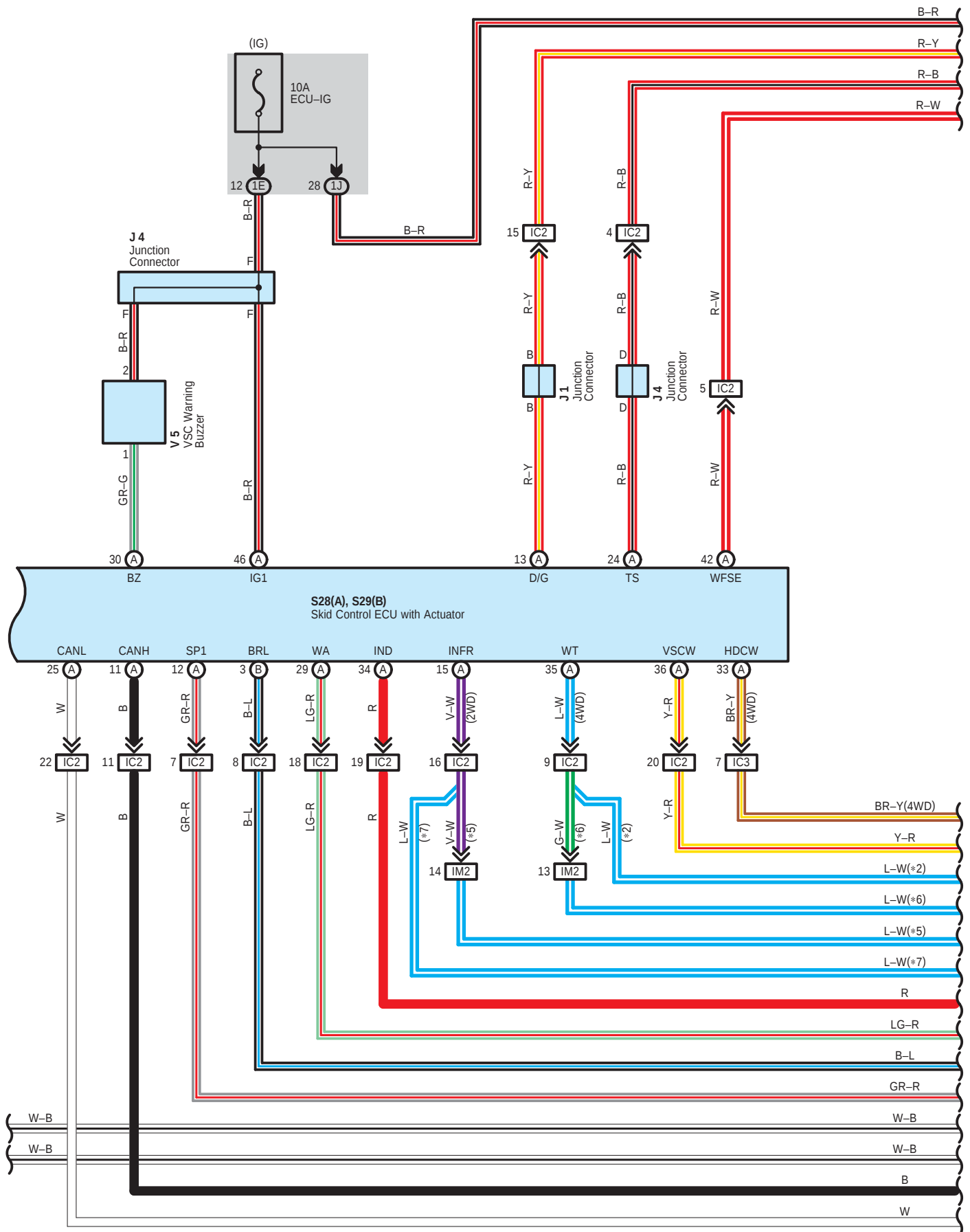


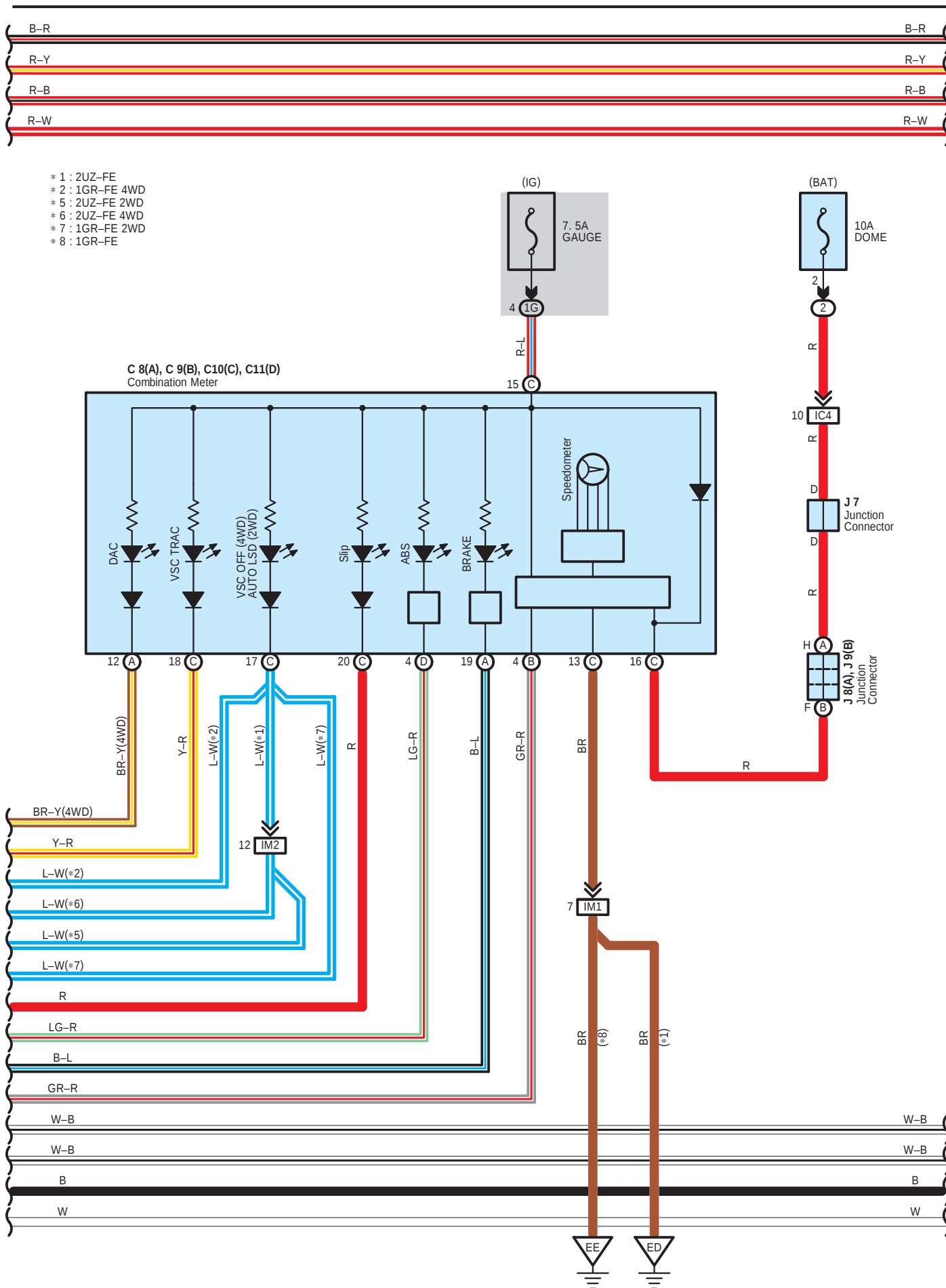
ABS, TRAC, VSC, Auto LSD, DAC and HAC



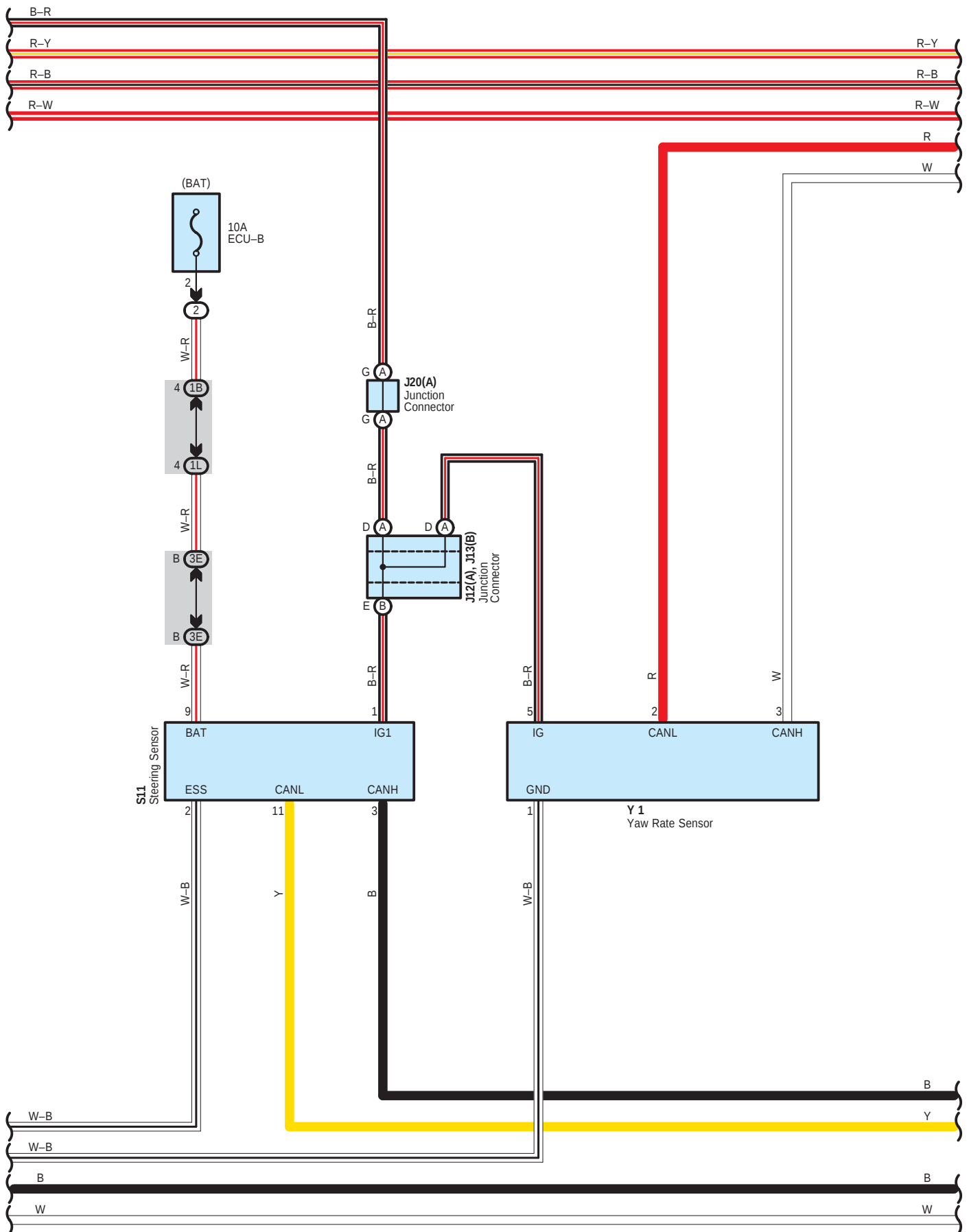


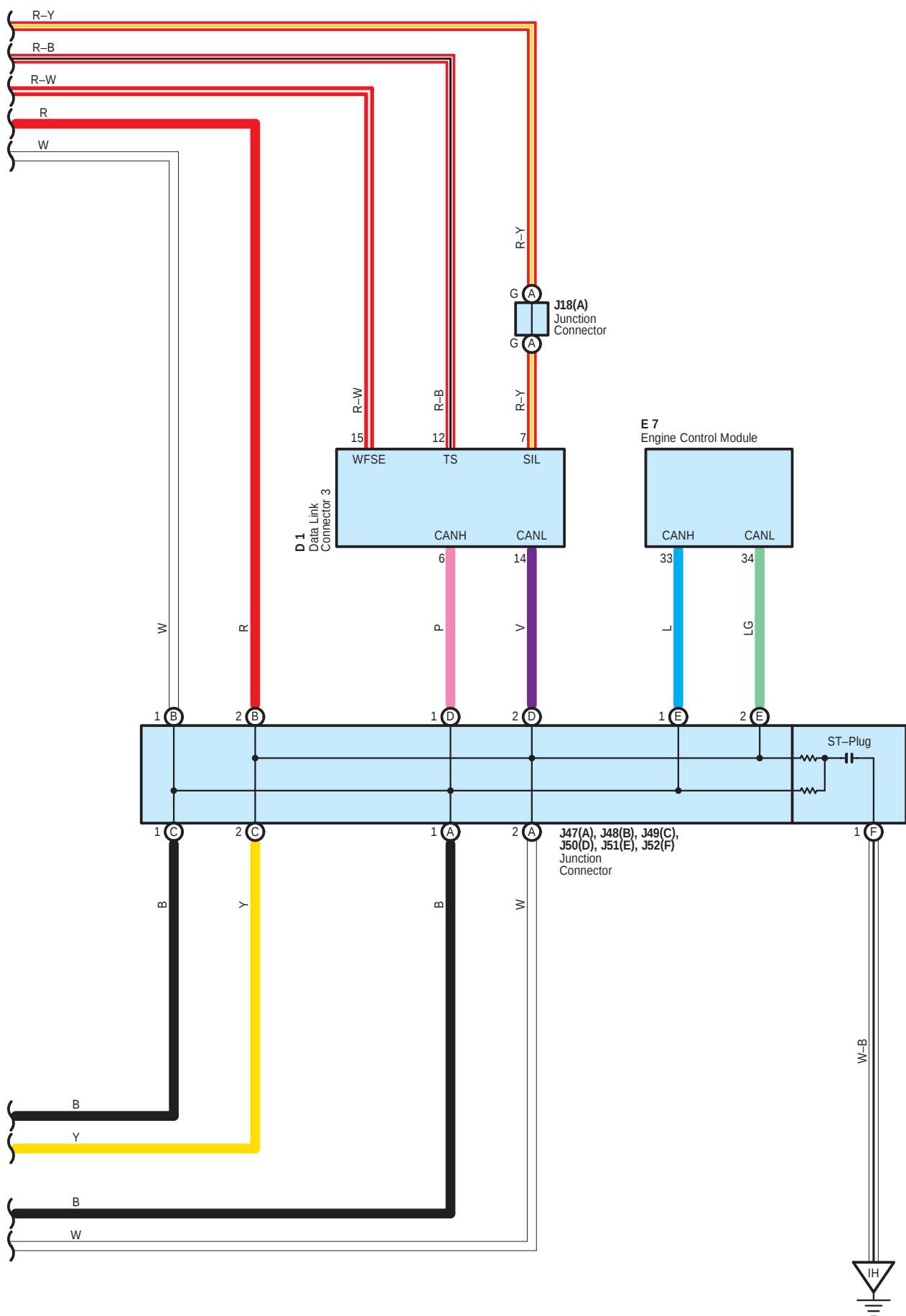
ABS, TRAC, VSC, Auto LSD, DAC and HAC





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





System Outline

1. Normal Operation

The VSC system helps prevent the vehicle from slipping sideways as a result of strong front wheel skid or strong rear wheel skid during cornering.

The followings are two possible circumstances in which the tires exceed their lateral grip limit. The VSC system is designed to help control the vehicle behavior by controlling the engine output and the brake at each wheel when the vehicle is under one of the conditions indicated below.

- * When the front wheels lose grip in relation to the rear wheels (Strong front wheel skid tendency).
- * When the rear wheels lose grip in relation to the front wheels (Strong rear wheel skid tendency).

2. Electronic Brake-Force Distribution

Skid control ECU with actuator distributes appropriate brake-force to front and rear wheels (Control of brake-force distribution to front and rear wheels) corresponding to the vehicle driving conditions. It also makes effective use of rear wheel brake-force to match the loading condition and decelerating of the vehicle, resulting in reducing brake pedal depression and ensuring effective braking. In braking during making a turn, the ECU controls appropriate brake-force distribution to right and left wheels (Control of brake-force distribution to right and left wheels) to ensure stability and braking of the vehicle.

3. Downhill Assist Control Operation

The downhill assist control operation controls braking action of each wheel to help prevent an out-of-balance posture of the vehicle when descending a steep hill or traveling at a speed exceeding the threshold of wheel gripping capability. When the downhill assist control is in operation, the brake system controls vehicle speed within the range of 5 to 7 km/h.

For the downhill assist control to be operative, all of the following conditions have to be met:

- * Downhill assist control switch = ON
- * Transfer L4 selected
- * Vehicle speed is 5 km/h or more, but less than 25 km/h.
- * Accelerator pedal OFF
- * Brake pedal OFF

4. Hill-Start Assist Control Operation

When starting on a steep hill for ascending, the hill-start assist control automatically puts the brake on momentarily when the driver switches from the brake pedal to the accelerator pedal, to help the driver start the vehicle safely and smoothly.

Please bear in mind, however, that it activates the brake system only for 3 seconds.

For the hill-start assist control to be operative all of the following conditions have to be met:

- * Shift position = D, 2, or L
- * No vehicle move due to wheel slip
- * Vehicle speed > 0 km/h

5. Active TRAC (4WD)

During rugged off-road driving, this function controls the engine output and the brake fluid pressure that is applied to the slipping wheel, and distributes the drive force that would have been lost through the slippage to the remaining wheels in order to achieve a LSD effect.

6. Auto LSD (2WD)

Auto LSD fulfills the function of LSD by using the system of TRAC. It helps ensures to recover from run-off condition and to take off on roads with much travel resistance such as sand.

 : Parts Location

Code		See Page	Code		See Page	Code		See Page
A9		32 (2UZ-FE)	J2	A	35 (1GR-FE)	J35		38
		34 (1GR-FE)	J3	B	33 (2UZ-FE)	J37		38
A10		32 (2UZ-FE)	J4	B	35 (1GR-FE)	J47	A	38
		34 (1GR-FE)				J48	B	38
A11		34 (1GR-FE)	J5		38	J49	C	38
A40		40	J7		38	J50	D	38
A41		40	J8	A	38	J51	E	38
A42		36	J9	B	38	J52	F	38
B14		32 (2UZ-FE)	J12	A	38	P1		33 (2UZ-FE)
		34 (1GR-FE)	J13	B	38			35 (1GR-FE)
C8	A	37	J14	A	38	P4		39
C9	B	37	J15	B	38	S11		39
C10	C	37	J18	A	38	S12		39
C11	D	37	J20	A	38	S15		39
D1		37	J21	B	38	S28	A	33 (2UZ-FE)
D5		37	J24		38			35 (1GR-FE)
E7		37	J25		38	S29	B	33 (2UZ-FE)
F9	A	37	J28		38			35 (1GR-FE)
F10	B	37	J29	A	38	T3		33 (2UZ-FE)
J1		33 (2UZ-FE)	J30	B	38			35 (1GR-FE)
		35 (1GR-FE)	J31	A	38	V5		39
J2	A	33 (2UZ-FE)	J32	B	38	Y1		39

 : 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)
1B	24	Engine Room Main Wire and Driver Side J/B (Lower Finish Panel)
1E		
1G	25	Instrument Panel Wire and Driver Side J/B (Lower Finish Panel)
1J		
1L		
3E	28	Instrument Panel Wire and Center J/B (Instrument Panel Brace RH)
3F		

 : Connector Joining Wire Harness and Wire Harness

Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
EC1	45 (1GR-FE)	Engine Wire and Differential Wire (Near the Front Differential)
IB2	46	Floor No.2 Wire and Engine Room Main Wire (Left Kick Panel)
IC2	46	Instrument Panel Wire and Engine Room Main Wire (Left Kick Panel)
IC3		
IC4		
IM1	47	Engine Wire and Instrument Panel Wire (Right Side of Blower Unit)
IM2		
BC2	48	Frame Wire and Floor No.2 Wire (Under the Rear LH Seat)
BE1	48	Frame Wire and Skid Control Sensor Wire (Right Side of No.5 Crossmember)

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



: Ground Points

Code	See Page	Ground Points Location
EA	44 (2UZ-FE)	Front Right Fender
	45 (1GR-FE)	
EB	44 (2UZ-FE)	Front Left Fender
	45 (1GR-FE)	
ED	44 (2UZ-FE)	Left Bank Cylinder Head
EE	44 (2UZ-FE)	Rear Side of Cylinder Block
	45 (1GR-FE)	Rear Side of Right Bank Cylinder Block
IG	46	Left Kick Panel
IH	46	Instrument Panel Brace LH
II	46	Instrument Panel Brace RH
IK	46	Right Kick Panel
BO	48	Rear Pillar LH

