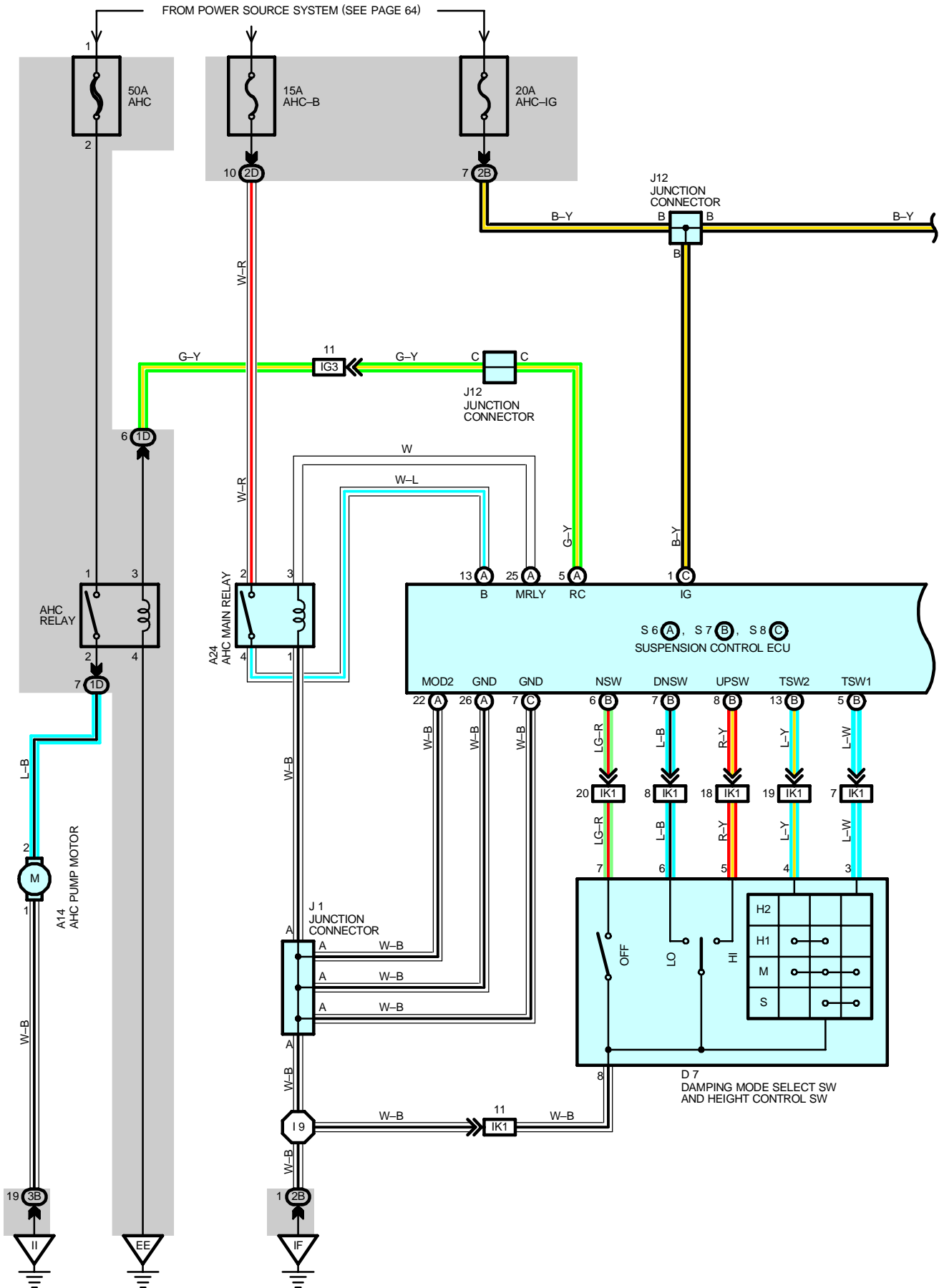
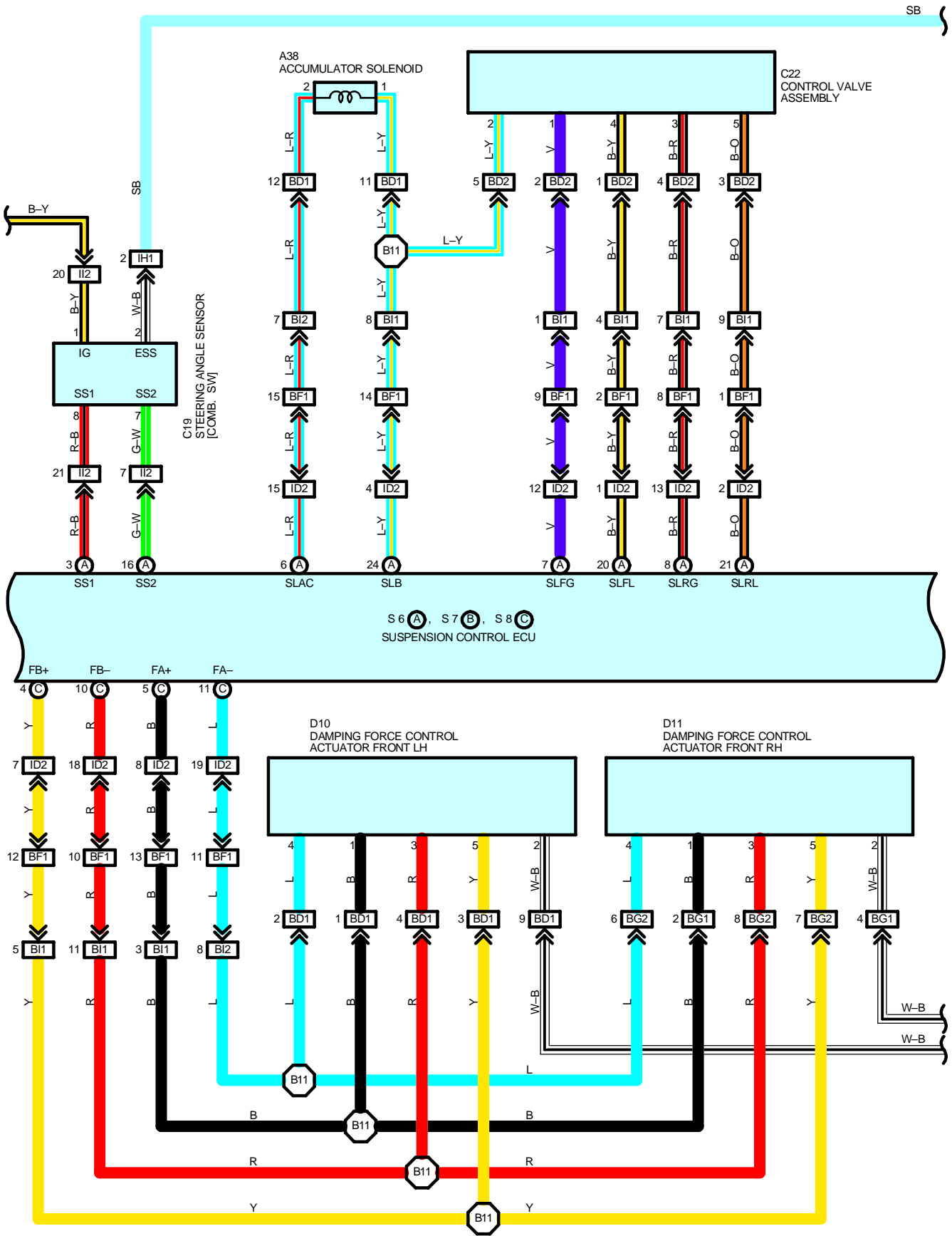


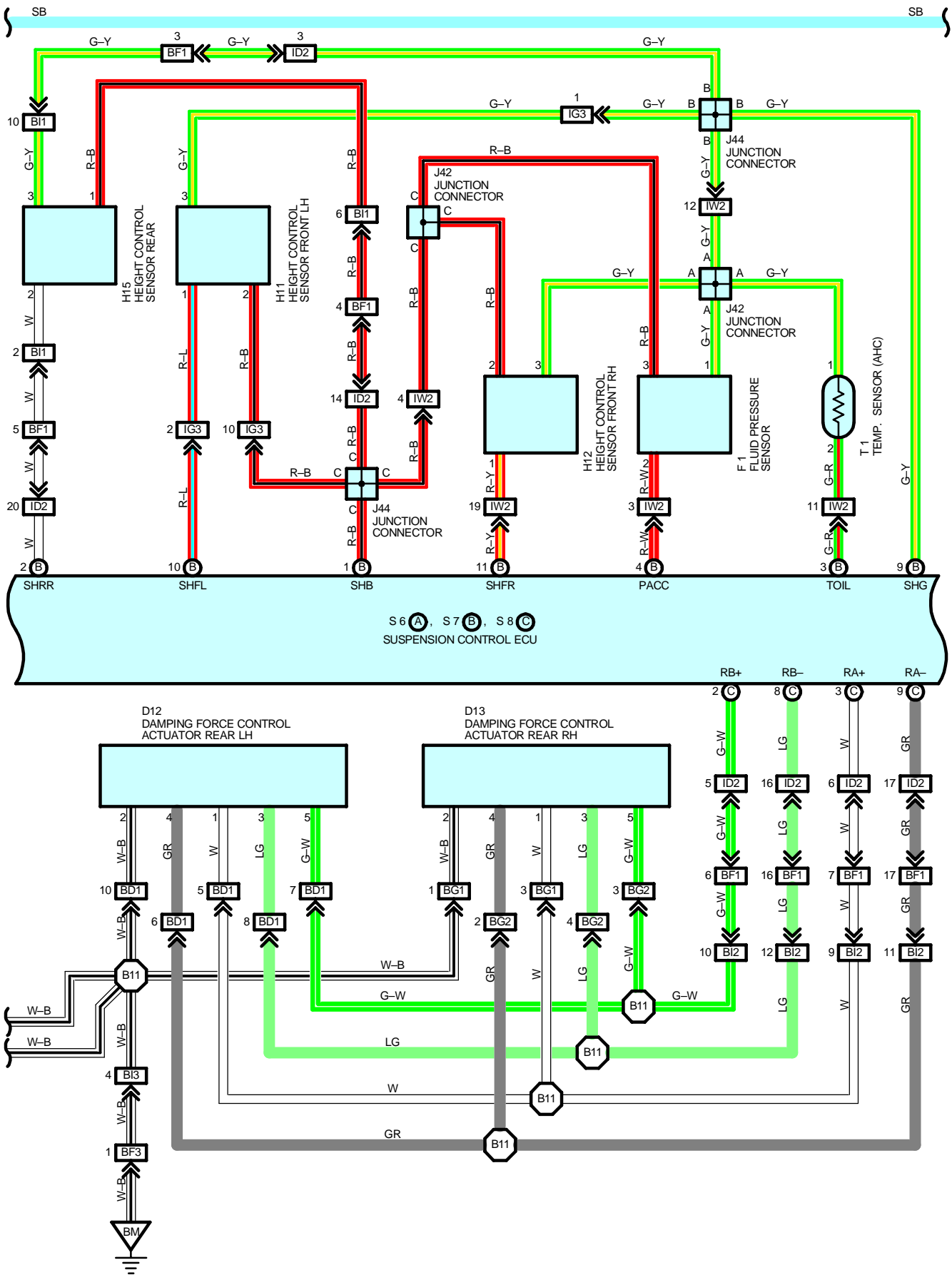
ACTIVE HEIGHT CONTROL SUSPENSION AND



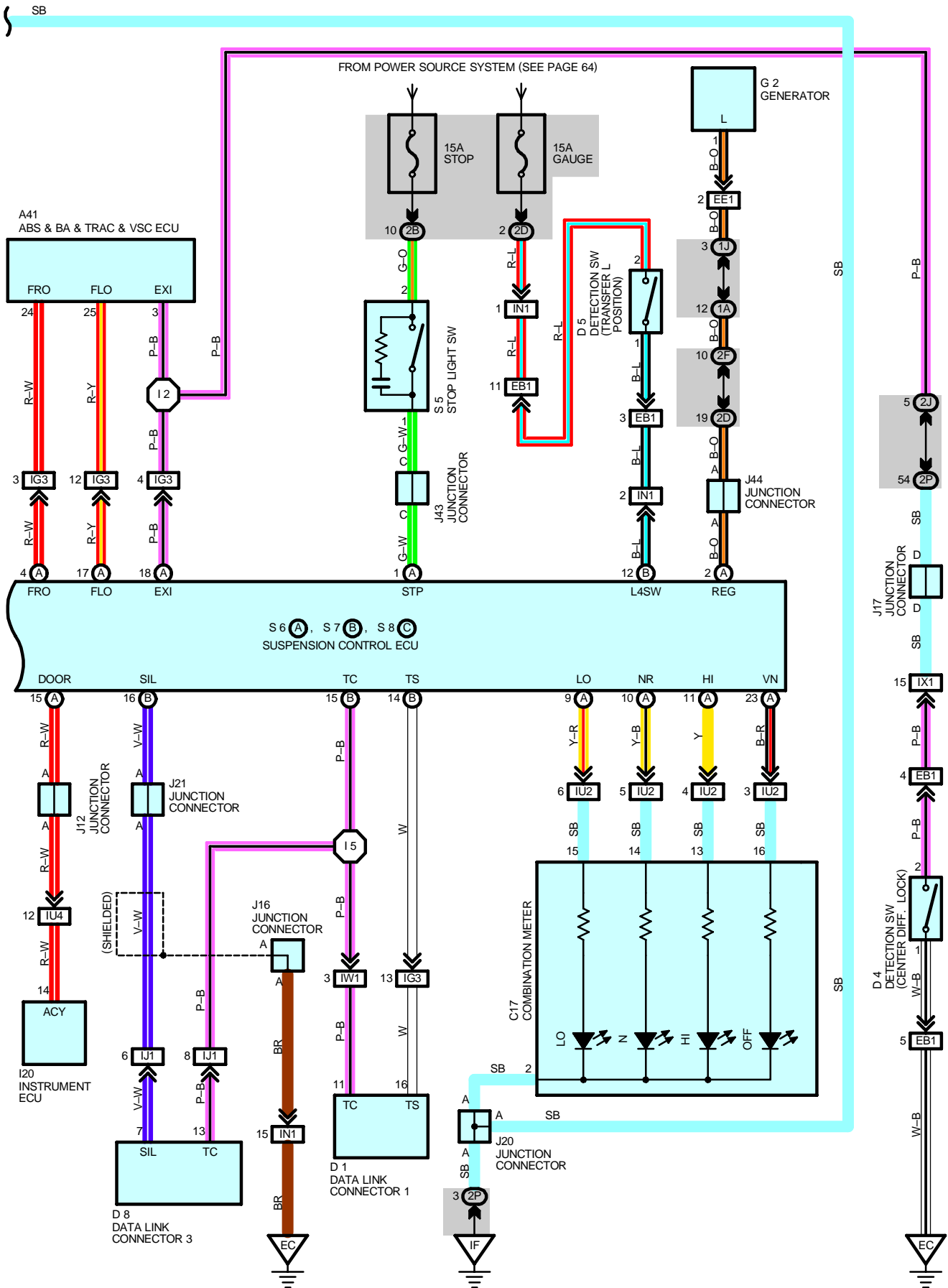
ADAPTIVE VARIABLE SUSPENSION



ACTIVE HEIGHT CONTROL SUSPENSION AND



ADAPTIVE VARIABLE SUSPENSION



SYSTEM OUTLINE

This system is a combined system of the vehicle height adjustment system and the damping force control system.

1. INPUT SIGNALS

- (1) Height control sensor signal
The vehicle height and the distance between the tire and body frame is detected, and is input to suspension control ECU TERMINAL SHFL, SHFR, SHRR.
- (2) Fluid pressure sensor signal
The hydraulic pressure is detected, and the signal is input to suspension control ECU TERMINAL PACC.
- (3) Temperature sensor signal
The fluid temperature is detected, and the signal is input to suspension control ECU TERMINAL TOIL.
- (4) Height control SW signal
Detects the changes in the target vehicle height, and the signal is input to suspension control ECU TERMINAL DNSW, UPSW.
Detects the changes in the vehicle height control, and the signal is input to suspension control ECU TERMINAL NSW.
- (5) Differential lock detection SW signal
Detects the differential lock, and the signal is input to suspension control ECU TERMINAL EXI.
- (6) L detection SW signal
Detects the transfer gear L, and the signal is input to suspension control ECU TERMINAL L4SW.
- (7) Stop light SW signal
Detects the brake signal, and the signal is input to suspension control ECU TERMINAL STP.
- (8) Generator signal
Detects whether the engine is running or not, and the signal is input to suspension control ECU TERMINAL REG.
- (9) Door courtesy SW signal
Detects whether the door is open or closed, and the signal is input to suspension control ECU TERMINAL DOOR.
- (10) Steering sensor signal
Detects the rotation number of the steering wheel, and the signal is input to suspension control ECU TERMINAL SS1, SS2.
- (11) Wheel speed sensor signal
Detects the wheel speed signal, and the signal is input to suspension control ECU TERMINAL FLO, FRO.
- (12) Damping mode select SW signal
Detects whether the damping force mode is selected or not, and the signal is input to suspension control ECU TERMINALS TSW1, TSW2.
- (13) Intelligent tester communication signal
The intelligent tester requirement signal is sent to suspension control ECU TERMINAL SIL. The suspension control ECU also sends back a signal to the intelligent tester.

2. VEHICLE HEIGHT ADJUSTMENT FUNCTION

- (1) Vehicle height adjustment by the SW
By operating the SW, the vehicle height can be adjusted to three heights, low, normal, and high.
- (2) Automatic leveling function
The vehicle height is maintained at a certain level when the load is within the specified load capacity.
- (3) Vehicle speed detection function
The height is adjusted automatically in response to the vehicle speed.
- (4) Extra HI mode
In L range with the height at HI mode, the height is raised 20 mm automatically, when the wheels are idling on a bumpy road surface.
- (5) Vehicle height control SW
When the vehicle height control SW is turned off, the vehicle height control functions could be inhibited.

3. DAMPING FORCE CONTROL FUNCTION

- (1) Bouncing control
The front and rear wheels are independently controlled electronically, to ensure adequate damping force at all times, in response to the bumpy road surface.
- (2) Harshness control
The damping force is controlled not to increase when the road condition does not require damping force, to ensure smooth and comfortable riding.
- (3) Unsprung vibration control
When unsprung sympathetic vibration is detected, the damping force is controlled so that it does not decrease below a certain level, to prevent such vibration and converge it, to ensure road holding.
- (4) Vehicle speed sensing control
To ensure optimal balance of comfortable riding and road holding, the minimum damping force is increased as the vehicle speed increases.
- (5) Anti-roll control
When the driver makes a turn, the damping force is controlled electronically according to the condition, and slows down the vehicle rolling speed.
- (6) Anti-dive control
The vehicle dive condition is detected at an early stage through braking and the vehicle wheel speed signal, and the damping force is controlled according to the condition, to slow down the dive speed when decelerating.
- (7) Anti-squat control
The vehicle squat condition at acceleration is detected at an early stage, and the damping force is switched to a higher level to avoid squat.
- (8) Damping mode select SW
The damping mode select SW has 4 modes, and can be changed according to the driver preference.

4. WHEEL DISCONNECTION FUNCTION

Usually the right and left wheels are connected, but when the driver turns the steering wheel, the wheels are disconnected in response to the condition. This is to prevent roll angle increase when making a turn.

SERVICE HINTS

S6 (A), S7 (B), S8 (C) SUSPENSION CONTROL ECU

- (C) 1-GROUND : Approx. 12 volts with ignition SW at **ON** or **ST** position
- (A) 1-GROUND : Approx. 12 volts with brake pedal depressed
- (B) 12-GROUND : Approx. 12 volts with detection SW (Transfer L position) on
- (A) 26, (C) 7-GROUND : Always continuity

C19 STEERING ANGLE SENSOR [COMB. SW]

- 1-GROUND : Approx. 12 volts with ignition SW at **ON** or **ST** position
- 2-GROUND : Always continuity

○ : PARTS LOCATION

Code	See Page	Code	See Page	Code	See Page
A14	38	D10	42	J17	41
A24	40	D11	42	J20	41
A38	42	D12	42	J21	41
A41	40	D13	42	J42	41
C14	A 40	F1	38	J43	41
C17	D 40	G2	38	J44	41
C19	40	H11	39	S5	41
C22	42	H12	39	S6	A 41
D1	38	H15	42	S7	B 41
D4	38	I20	40	S8	C 41
D5	38	J1	41	T1	39
D7	40	J12	41		
D8	40	J16	41		

ACTIVE HEIGHT CONTROL SUSPENSION AND ADAPTIVE VARIABLE SUSPENSION

: JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

Code	See Page	Junction Block and Wire Harness (Connector Location)
1A	23	Engine Room No.2 Wire and Engine Room J/B (Engine Compartment Left)
1D		
1J	23	Engine Room Main Wire and Engine Room J/B (Engine Compartment Left)
2B	26	Dash Wire and Cowl Side J/B LH (Left Kick Panel)
2D		
2F	26	Engine Room No.2 Wire and Cowl Side J/B LH (Left Kick Panel)
2J		
2P	28	Instrument Panel Integration Wire and Cowl Side J/B LH (Left Kick Panel)
3B	32	Engine Room No.2 Wire and Cowl Side J/B RH (Right Kick Panel)

: CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
EB1	46	Engine Wire and Transmission Wire (On the Transmission)
EE1	46	Engine Room Main Wire and Alternator Wire (Near the Battery)
ID2	48	Dash Wire and Floor Wire (Left Kick Panel)
IG3	50	Engine Room No.2 Wire and Dash Wire (Behind the Combination Meter)
IH1	50	Instrument Panel Integration Wire and Column Wire (Near the Ignition SW)
II2	50	Column Wire and Dash Wire (Near the Ignition SW)
IJ1	50	Dash Wire and Detector Wire (Instrument Panel Center)
IK1	50	Console Box Wire and Dash Wire (Left Side of Front Console)
IN1	52	Engine Wire and Dash Wire (Behind the Glove Box)
IU2	52	Instrument Panel Integration Wire and Dash Wire (Behind the Glove Box)
IU4		
IW1	54	Engine Room No.2 Wire and Dash Wire (Behind the Glove Box)
IW2		
IX1	54	Instrument Panel Integration Wire and Engine Wire (Behind the Glove Box)
BD1	56	Frame No.2 Wire and Frame Wire (Near the Left Rear Suspension Support)
BD2		
BF1	56	Floor No.3 Wire and Floor Wire (Left Rear Side Quarter Panel)
BF3		
BG1	56	Frame No.3 Wire and Frame Wire (Near the Right Rear Suspension Support)
BG2		
BI1	58	Frame Wire and Floor No.3 Wire (Left Side of Rear Floor Crossmember)
BI2		
BI3		

: GROUND POINTS

Code	See Page	Ground Points Location
EC	46	Rear Bank of Right Cylinder Head
EE	46	Front Left Side of Fender Apron
IF	48	Set Bolt of Cowl Side J/B LH
II	48	Set Bolt of Cowl Side J/B RH
BM	56	Left Rear Side Quarter Panel

: SPLICE POINTS

Code	See Page	Wire Harness with Splice Points	Code	See Page	Wire Harness with Splice Points
I2	50	Engine Room No.2 Wire	I9	50	Column Wire
I5	50	Dash Wire	B11	58	Frame Wire