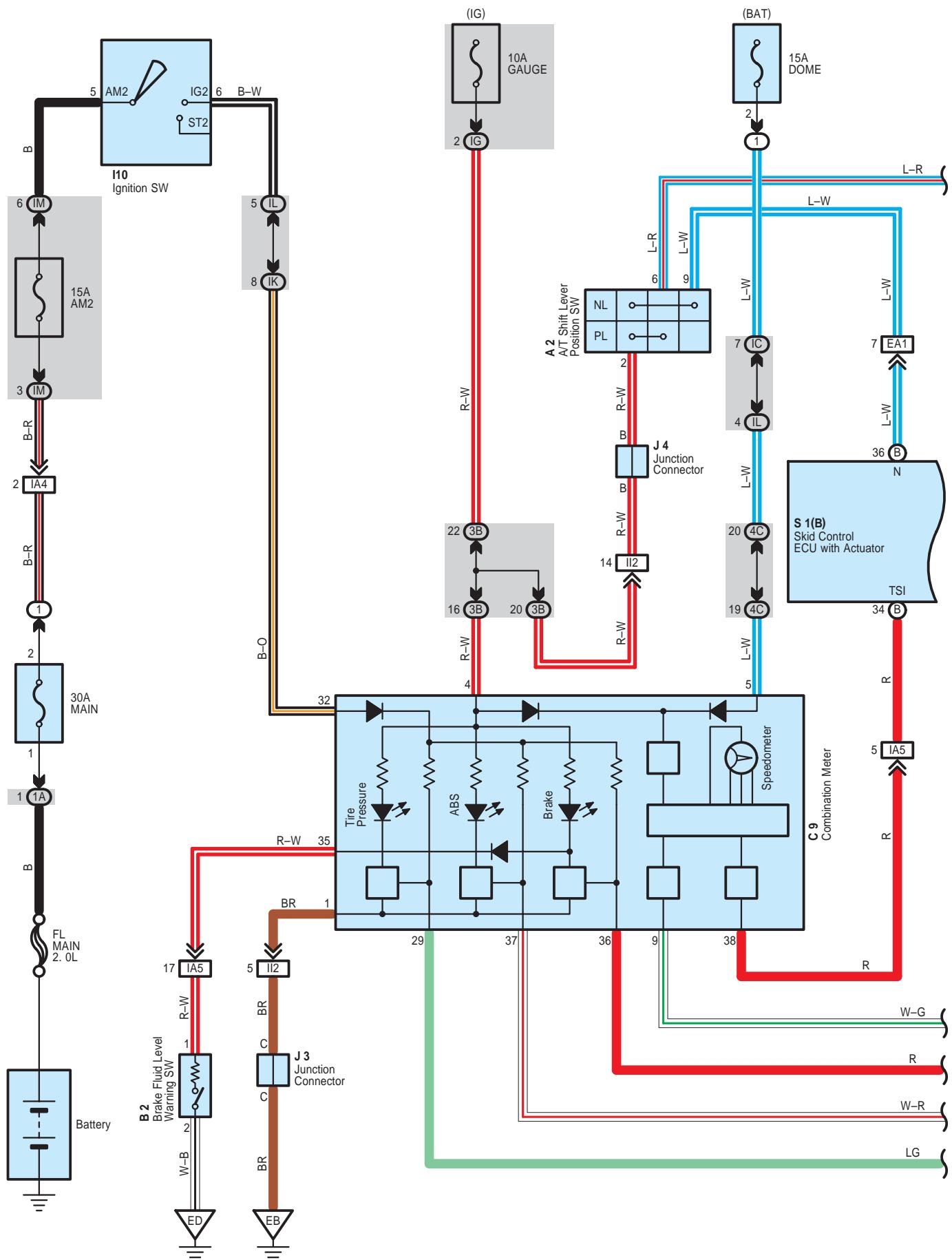
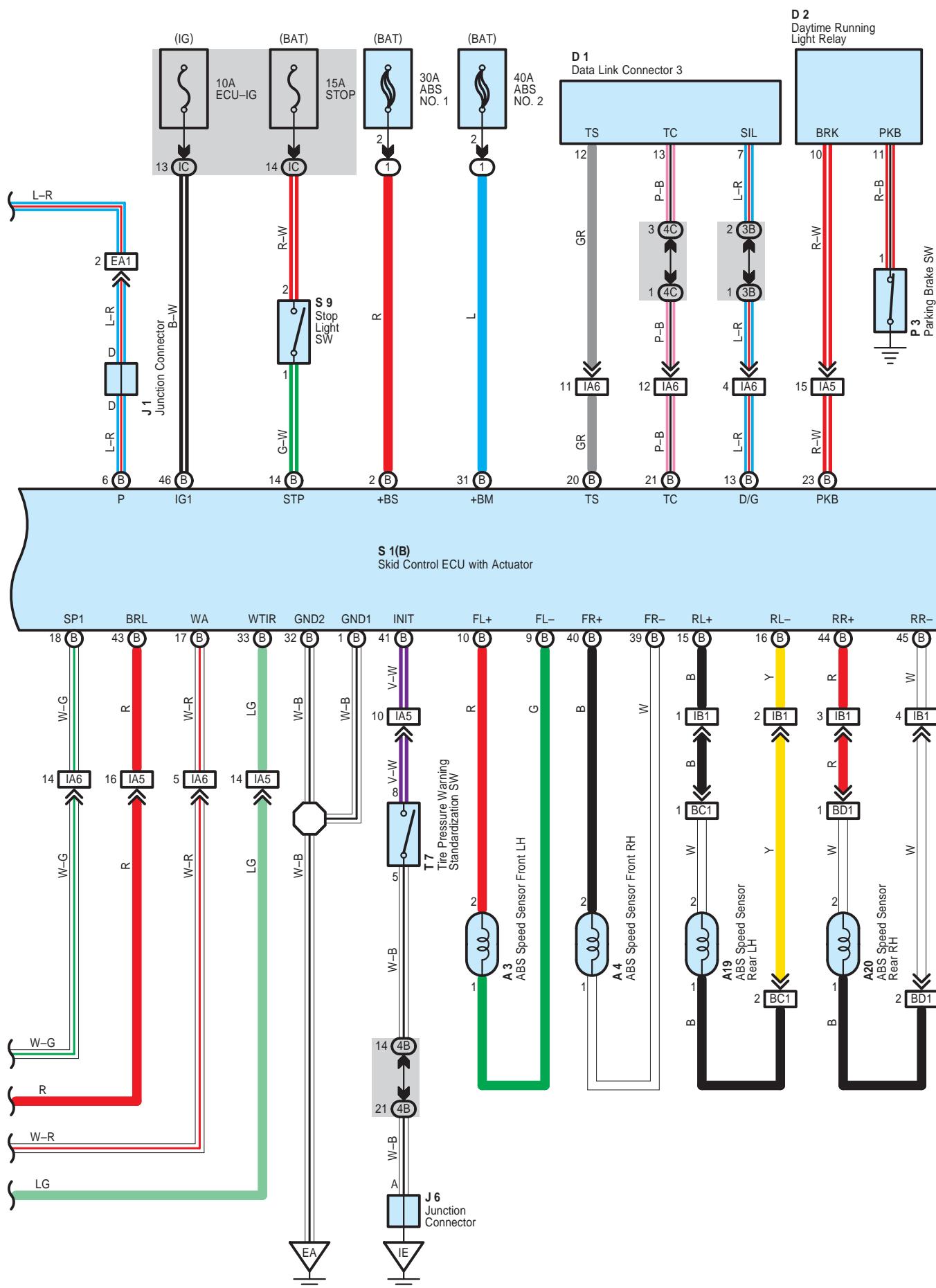


ABS and Tire Pressure Warning System without VSC





ABS and Tire Pressure Warning System without VSC

System Outline

ABS is a brake system designed to improve the operating ability and securing the stability of the vehicle by preventing the lock-up of the vehicle by controlling the wheel cylinder pressure of all the four wheels at the time of sudden braking.

1. Input Signals

(1) Speed sensor signal

The speed of the wheels is detected and input to TERMINALS FL+, FR+, RL+, and RR+ of the skid control ECU and actuator.

(2) Stop light SW signal

A signal is input to TERMINAL STP of the skid control ECU with actuator when brake pedal is depressed.

2. System Operation

When the wheels are locked-up, the solenoid inside the actuator is controlled by the signal from the skid control ECU with actuator, and the brake fluid in the wheel cylinder will flow through the reservoir and reduce the hydraulic pressure.

While the ABS is in operation, as the skid control ECU with actuator always outputs the operation signal to the pump inside the actuator, and the brake fluid stored inside the reservoir will be sucked up by the pump inside the actuator and returned to the master cylinder.

When the hydraulic pressure of the wheel cylinder is decompressed or increased until the necessary hydraulic pressure, the solenoid inside the actuator is controlled by the control signal from the skid control ECU with actuator and as a result, hydraulic pressure of the wheel cylinder will be closed at both the master cylinder and reservoir sides routes, and the hydraulic pressure of the wheel cylinder will be in the hold condition.

If increase of the hydraulic pressure volume of the wheel cylinder becomes necessary, the control signals from the skid control ECU with actuator control the solenoid inside the actuator, to resume to the normal condition. Thus the brake fluid of the master cylinder will be sent to the wheel cylinder and will increase the hydraulic pressure of the wheel cylinder. At this time, in the case that the brake fluid is left in the reservoir, it will be sucked up by the pump inside the actuator and will be sent to the wheel cylinder.

○ : Parts Location

Code	See Page	Code	See Page	Code	See Page
A2	32(1ZZ-FE)	B2	32(1ZZ-FE)	J4	37
A3	32(1ZZ-FE)		34(2ZZ-GE)	J6	37
	34(2ZZ-GE)	C9	36	P3	37
A4	32(1ZZ-FE)		36		33(1ZZ-FE) 35(2ZZ-GE)
	34(2ZZ-GE)	D1	36		
A19	38(*1)	I10	37	S9	37
	40(*2)	J1	33(1ZZ-FE)	T7	37
A20	38(*1)		35(2ZZ-GE)		
	40(*2)	J3	37		

○ : 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)
IC	25	Engine Room Main Wire and Instrument Panel J/B (Lower Finish Panel)
IG	25	Instrument Panel Wire and Instrument Panel J/B (Lower Finish Panel)
IK	24	
IL	Engine Wire and Engine Room J/B (Engine Compartment Left)	
IM		Instrument Panel Wire and RH J/B (Right Side of the Instrument Panel Reinforcement)
1A	22	Instrument Panel Wire and Center J/B (Behind the Combination Meter)
3B	28	
4B	30	
4C		

* 1 : w/ Side Airbag and/or Stereo Component Amplifier * 2 : w/o Side Airbag and Stereo Component Amplifier

 : Connector Joining Wire Harness and Wire Harness

Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
EA1	42 (1ZZ-FE)	Engine Wire and Engine Room Main Wire (Inside of the Engine Room R/B)
	43 (2ZZ-GE)	
IA4	44	Engine Room Main Wire and Instrument Panel Wire (Left Side of the Instrument Panel Reinforcement)
IA5		
IA6		
IB1	44	Engine Room Main Wire and Floor Wire (Cowl Side Panel LH)
II2	45	Engine Wire and Instrument Panel Wire (Blower Unit RH)
BC1	46 (*1)	Skid Control Sensor Wire LH and Floor Wire (Quarter Wheel House LH)
	47 (*2)	
BD1	46 (*1)	Skid Control Sensor Wire RH and Floor Wire (Quarter Wheel House RH)
	47 (*2)	

 : Ground Points

Code	See Page	Ground Points Location
EA	42 (1ZZ-FE)	Front Right Fender
	43 (2ZZ-GE)	
EB	42 (1ZZ-FE)	Left Side of the Cylinder Head
	43 (2ZZ-GE)	
ED	42 (1ZZ-FE)	Front Left Suspension Tower
	43 (2ZZ-GE)	
IE	44	Behind the Combination Meter

* 1 : w/ Side Airbag and/or Stereo Component Amplifier * 2 : w/o Side Airbag and Stereo Component Amplifier

NOTICE: When inspecting or repairing the SRS, perform service in accordance with the following precautionary instructions and the procedure, and precautions in the Repair Manual applicable for the model year.

- Malfunction symptoms of the SRS are difficult to confirm, so the DTCs become the most important source of information when troubleshooting. When troubleshooting the SRS, always inspect the DTCs before disconnecting the battery.
- **Work must be started more than 90 seconds after the ignition SW is turned to the "LOCK" position and the negative (-) terminal cable is disconnected from the battery.**
(The SRS is equipped with a back-up power source so that if work is started within 90 seconds from disconnecting the negative (-) terminal cable of the battery, the SRS may deploy.)
- When the negative (-) terminal cable is disconnected from the battery, the memory of the clock and audio system will be cleared. So before starting work, make a record of the contents in the audio memory system. When work is finished, reset the audio systems as they were before and adjust the clock. Some vehicles have power tilt steering, power telescopic steering, power seat and power outside rear view mirror which are all equipped with memory function. However, it is not possible to make a record of these memory contents. So when the work is finished, it will be necessary to explain it to your customer, and ask the customer to adjust the features and reset the memory. To avoid erasing the memory in each system, never use a back-up power supply from outside the vehicle.
- Before repair, remove the airbag sensor if shocks are likely to be applied to the sensor during repair.
- Do not expose the following parts directly to hot air or flame;
- Even in cases of a minor collision where the SRS does not deploy, the following parts should be inspected;
- Never use SRS parts from another vehicle. When replacing parts, replace with new parts.
- For the purpose of reuse, never disassemble and repair the following parts.
- If the following parts have been dropped, or have cracks, dents and other defects in their case, bracket, and connector, replace with new one.
- Use a volt/ohmmeter with high impedance (10 kΩ/V minimum) for troubleshooting electrical circuits of the system.
- Information labels are attached to the periphery of the SRS components. Follow the instructions of the notice.
- After work on the SRS is completed, check the SRS warning light.
- If the vehicle is equipped with a mobile communication system, refer to the precaution in the IN section of the Repair Manual.

- * Steering wheel pad
- * Front passenger airbag assembly
- * Side airbag assembly
- * Curtain shield airbag assembly
- * Seat belt pretensioner
- * Center airbag sensor assembly
- * Front airbag sensor assembly
- * Side airbag sensor assembly
- * Rear airbag sensor assembly