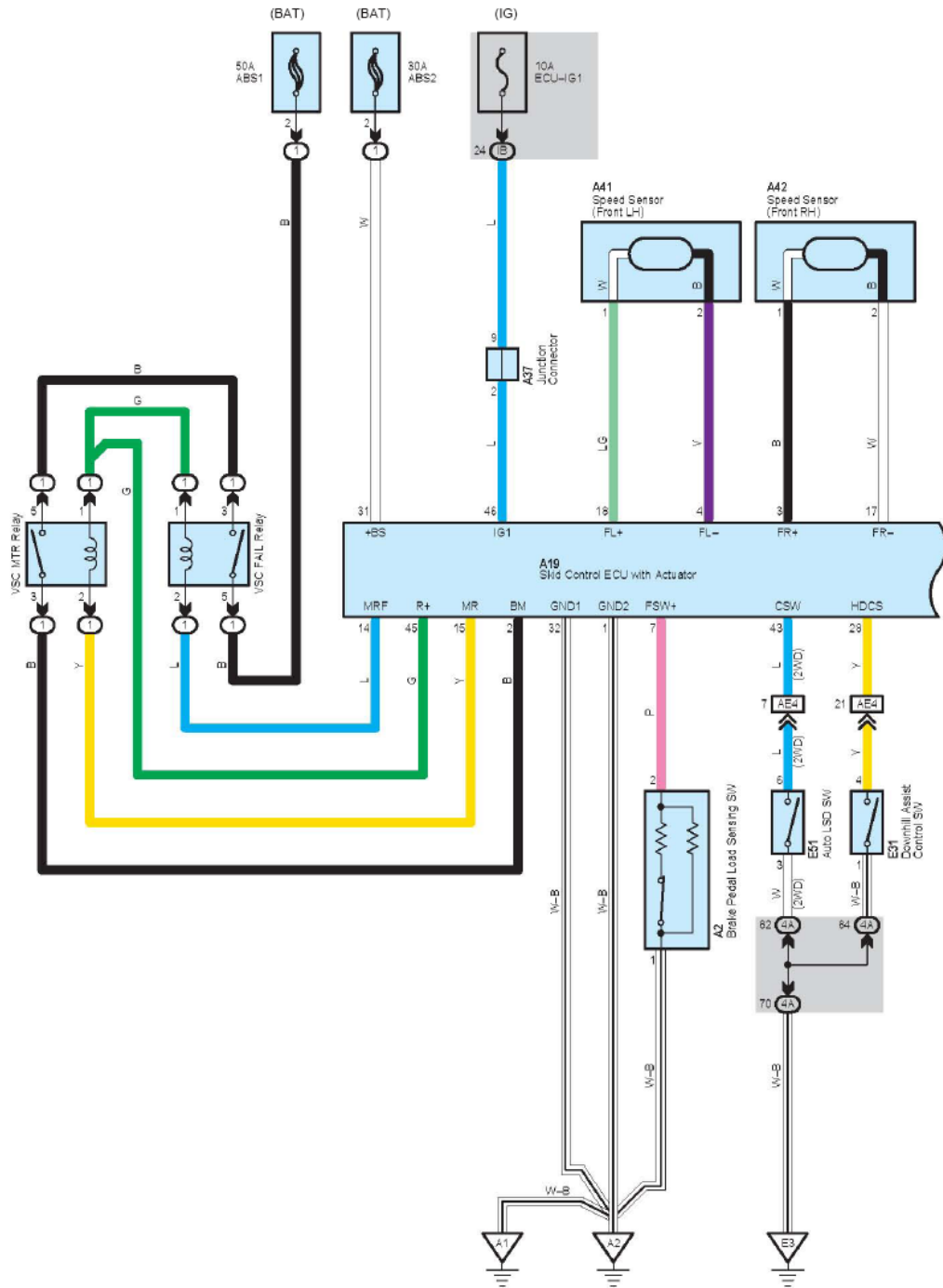
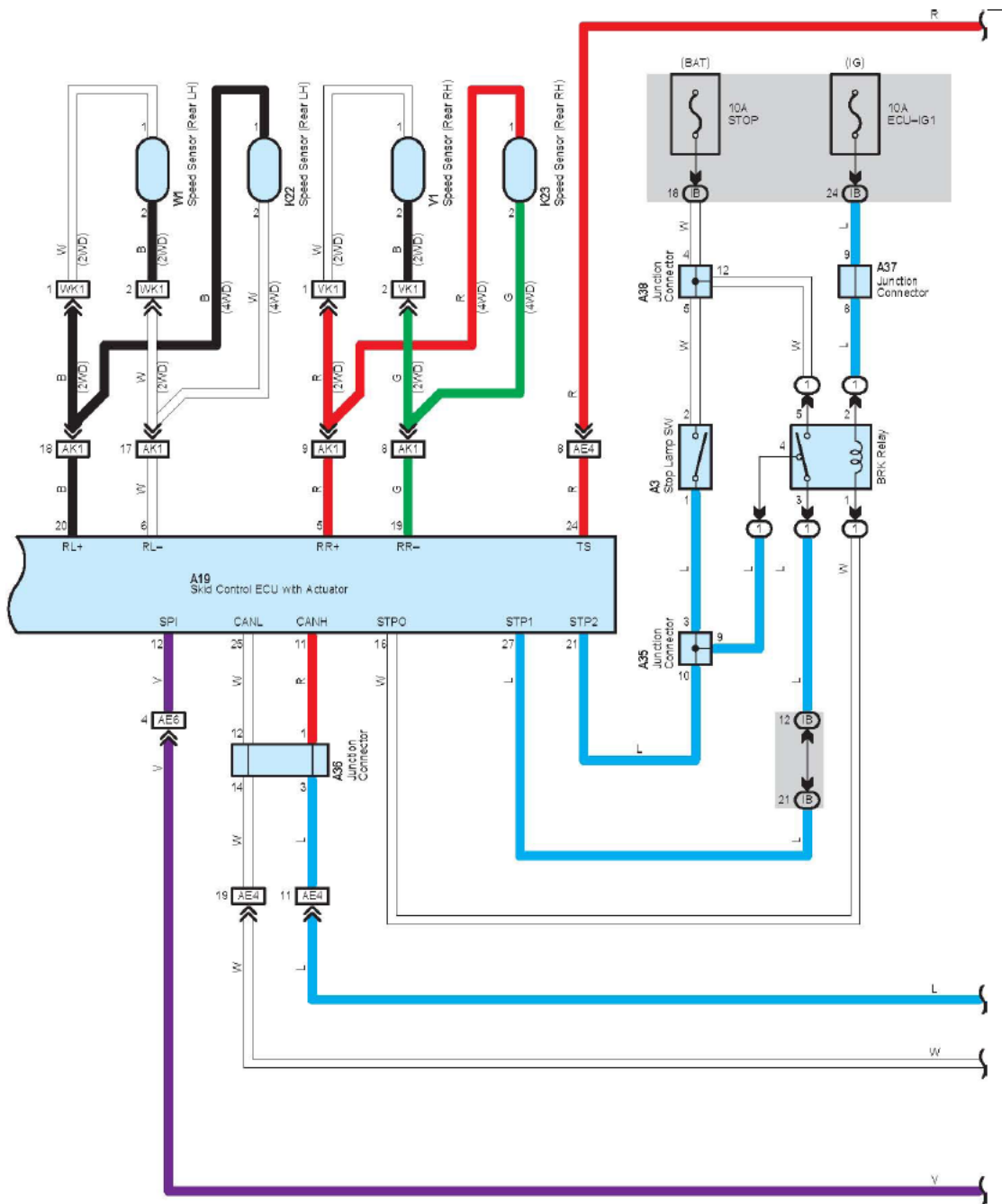
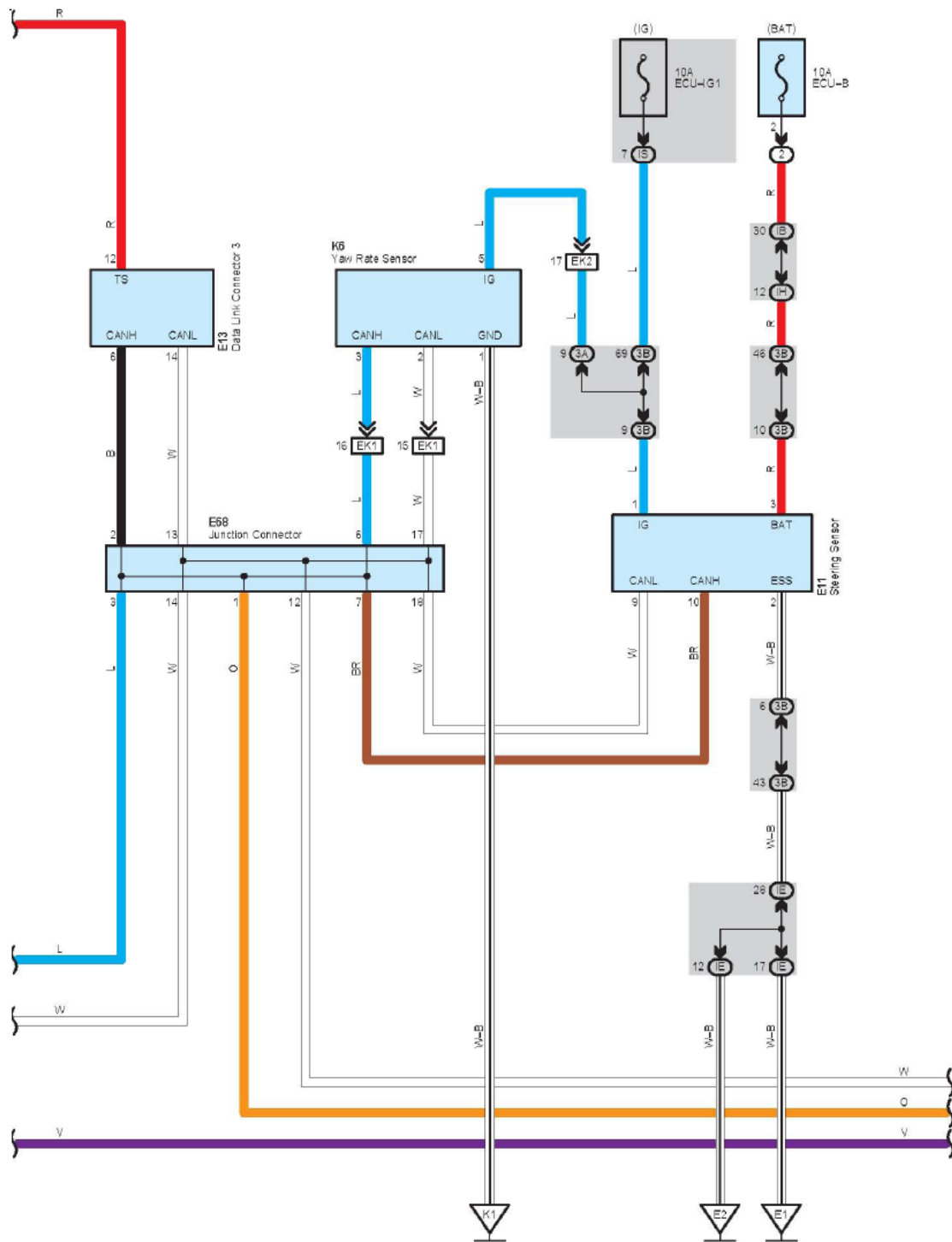
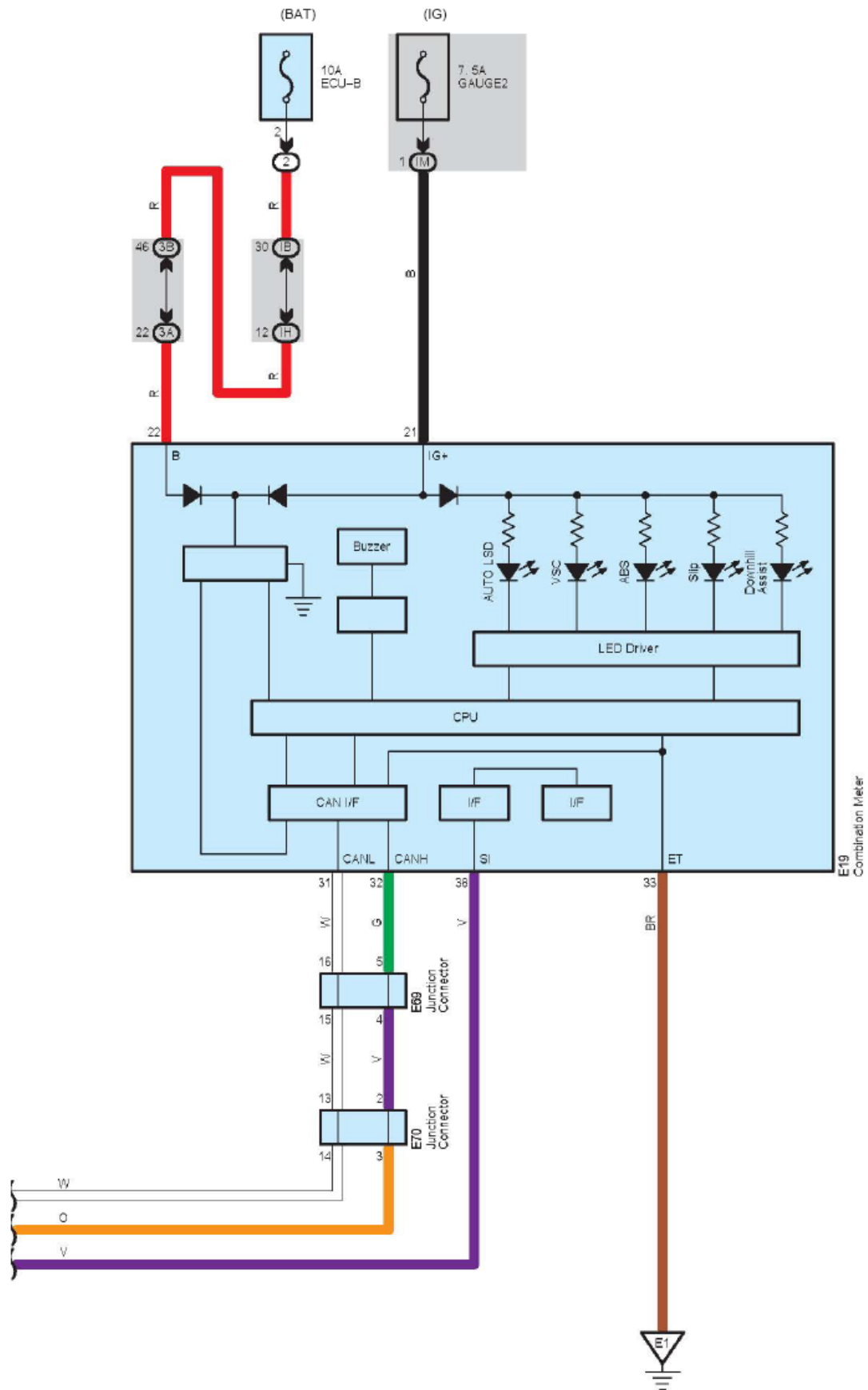


### ABS, TRAC, VSC, Downhill Assist Control, Hill-Start Assist Control and Auto LSD









**System Outline****1. ABS Operation**

If the brake pedal is depressed suddenly, the ABS controls the hydraulic pressure of the wheel cylinders for all the four wheels to automatically avoid wheel locking and ensure the directional and steering stability of the vehicle. If the brake pedal is depressed suddenly, the skid control ECU controls the solenoids in the actuators using the signals from the sensors to move the brake fluid to the reservoir in order to release the braking pressure applied to the wheel cylinder. If the skid control ECU detects that the fluid pressure in the wheel cylinder is insufficient, the ECU controls the solenoids in the actuators to increase the braking pressure.

**2. Traction Control Operation**

The traction control system controls the engine torque, the hydraulic pressure of the driving wheel cylinders, slipping of the wheels which may occur at start or acceleration of the vehicle, to ensure an optimal driving power and vehicle stability corresponding to the road conditions.

**3. VSC Operation**

Unexpected road conditions, vehicle speed, emergency situation, and any other external factors may cause large under-over-steering of the vehicle. If this occurs, the VSC system automatically controls the engine power and wheel brakes to reduce the under- or over-steering.

To reduce large over-steering :

If the VSC system determines that the over-steering is large, it activates the brakes for the outer turning wheels depending on the degree of the over-steering to produce the moment toward the outside of the vehicle and reduce the over-steering. To reduce large under-steering :If the VSC system determines that the under-steering is large, it controls the engine power and activates the rear wheelbrakes to reduce the under-steering.

**4. Fail Safe Function**

If an error occurs in the skid control ECU, sensor signals, and/or actuators, the skid control ECU inhibits the brake actuator control and inputs the error signal to the engine control module. According to the error signal, the brake actuator turns off the solenoid and the engine control module rejects any electronically controlled throttle open request from the VSC system. As a result, the vehicle functions regardless of the ABS, TRAC, and VSC systems.

**5. Downhill Assist Control Operation**

The downhill assist control operation controls braking action of each wheel to help prevent out-of-balance vehicle posture 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 control vehicles speed within the range of 5 to 7 km/h.

**6. Hill-Start Assist Control Operation**

When starting on a steep hill for ascending, the hill-start support control automatically puts the brake on momentarily – from the moment when the driver releases his foot from the brake pedal until he steps on the accelerator pedal – to help the driver start the vehicle safely and smoothly. Please bear in mind, however, that it activates the brake system for only 3 seconds.

**7. Auto LSD**

Auto LSD fulfills the function of LSD (Limited Slip Differential) by using the system of TRAC. It control to focus on 'getting out', which ensures to recover from run-off condition and to take off on roads with much travel resistance such as sand.

**Relay Blocks**

Code	Relay Blocks (Relay Block Location)
1	Engine Room R/B No.1 (Engine Compartment Left)Engine Room R/B No.1 (Engine Compartment Left)
2	Engine Room R/B No.2 (Engine Compartment Right)Engine Room R/B No.2 (Engine Compartment Right)

**Junction Block and Wire Harness Connector**

Code	Junction Block and Wire Harness (Connector Location)
3A	Instrument Panel Wire and J/B No.3 (Instrument Panel Center)Instrument Panel Wire and J/B No.3 (Instrument Panel Center)
3B _	
4A	Instrument Panel Wire and J/B No.4 (Instrument Panel Center)
IB	Engine Room Main Wire and Instrument Panel J/B (Cowl Side Left)
IE	
IH _	Instrument Panel Wire and Instrument Panel J/B (Cowl Side Left)Instrument Panel Wire and Instrument Panel J/B (Cowl Side Left)
IM	
IS _	

## Connector Joining Wire Harness and Wire Harness

Code	Joining Wire Harness and Wire Harness (Connector Location)
AE4	Engine Room Main Wire and Instrument Panel Wire (Left Side of the Instrument Panel)Engine Room Main Wire and Instrument Panel Wire (Left Side of the Instrument Panel)
AE6_	
AK1	Engine Room Main Wire and Floor Wire (Left Kick Panel)
EK1	Instrument Panel Wire and Floor Wire (Left Kick Panel)Instrument Panel Wire and Floor Wire (Left Kick Panel)
EK2_	
VK1	Skid Control Sensor Wire Rear RH and Floor Wire (Quarter Wheel House Panel RH)
WK1	Skid Control Sensor Wire Rear LH and Floor Wire (Quarter Wheel House Panel LH)

## Ground Points

Code	Ground Points Location
A1	Front Left Fender
A2	
E1	Left Kick Panel
E2	Instrument Panel Reinforcement Left
E3	Instrument Panel Reinforcement Center
K1	Left Center Pillar

LAUNCH