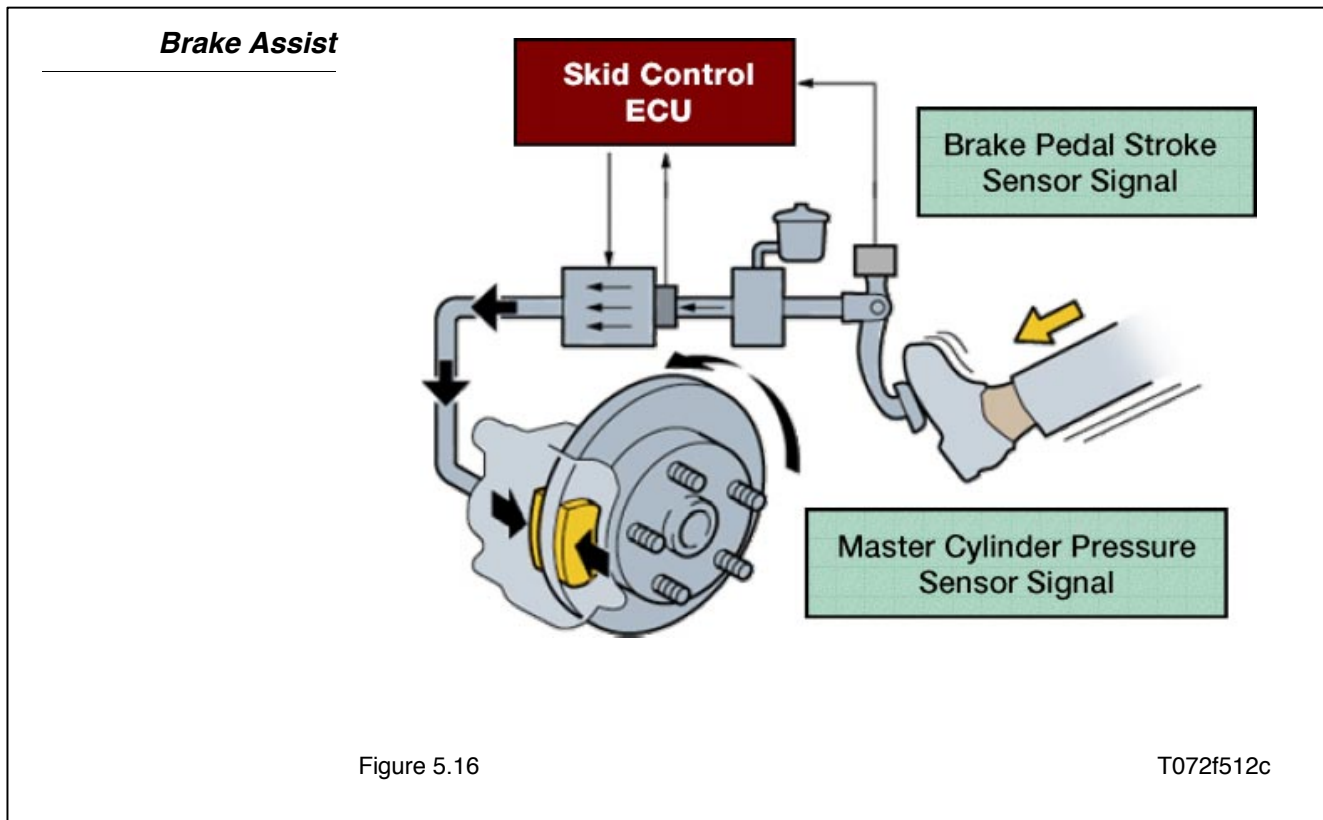


**Brake Assist System
(’04 & later Prius)**

In emergencies, drivers often panic and do not apply sufficient pressure to the brake pedal. So on the ’04 & later Prius, the Brake Assist system interprets a quick push of the brake pedal as emergency braking and supplements braking power accordingly.

To determine the need for an emergency stop, the Skid Control ECU looks at the speed and the amount of brake pedal application based on signals from the master cylinder pressure sensors and the brake pedal stroke sensor. If the Skid Control ECU determines that the driver is attempting an emergency stop it signals the brake actuator to increase hydraulic pressure.

A key feature of the Brake Assist system is that the timing and the degree of braking assistance are designed to ensure that the driver does not discern anything unusual about the braking operation. As soon as the driver eases up on the brake pedal, the system reduces the amount of assistance it provides.



Enhanced VSC System ('04 & later Prius)

The Enhanced VSC system available on the '04 & later Prius helps maintain stability when the vehicle's tires exceed their lateral grip. The system helps control the vehicle by adjusting the motive force and the brakes at each wheel when:

- The front wheels lose traction but the rear wheels don't. (front wheel skid tendency known as 'understeer')
- The rear wheels lose traction but the front wheels don't. (rear wheel skid tendency, or 'oversteer')

When the Skid Control ECU determines that the vehicle is in understeer or oversteer, it decreases engine output and applies the brakes to the appropriate wheels individually to control the vehicle.

- When the skid control ECU senses understeer, it brakes the front and rear inside wheel. This slows the vehicle, shifts the load to the outside front wheel and limits front wheel skid.
- When the skid control ECU senses oversteer, it brakes the front and rear outside wheel. This restrains the skid and moves the vehicle back toward its intended path.

Cooperative Control with EPS ('04 & later Prius)

Enhanced VSC provides the appropriate amount of steering assist based on driving conditions by coordinating EPS and VSC control.

Cooperative Control with EPS

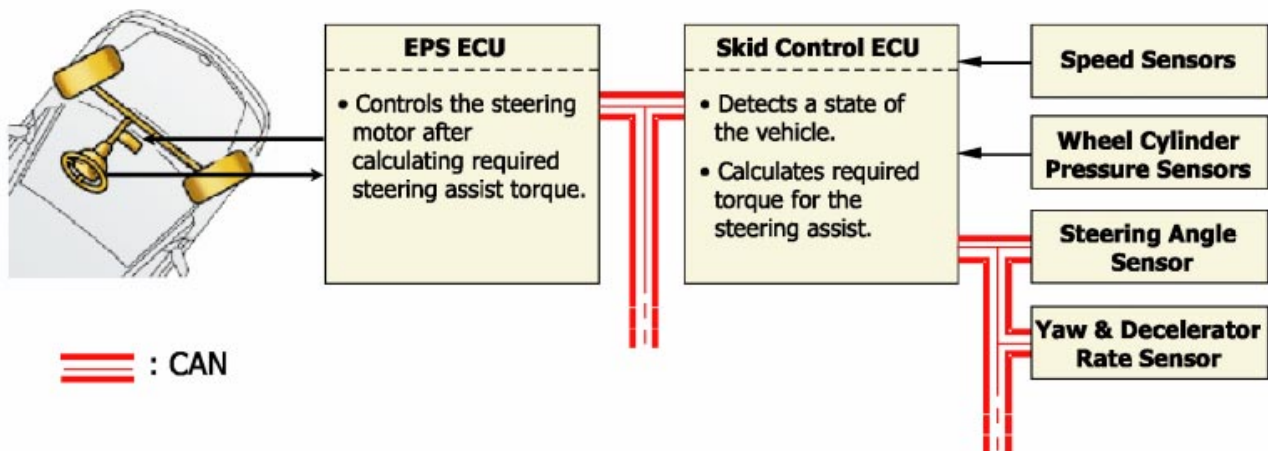


Figure 5.17

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