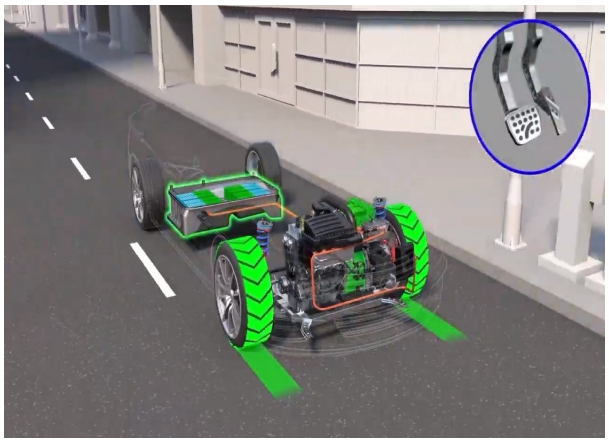
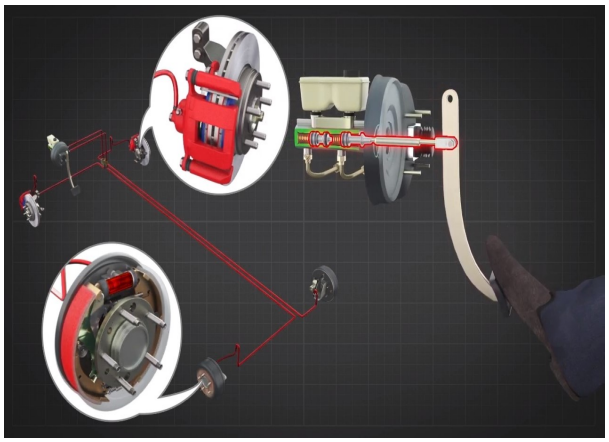
Brake System



In regenerative braking when you release the accelerator or press the brakes, the motor slows down the vehicle and converts the car’s momentum into electricity,



Each wheel of a car has either disc brake assembly or drum brake assembly which helps the vehicle slow down

A moving vehicle has a huge amount of stored energy, so stopping the vehicle means the movement energy needs to be converted to another form. On hybrid vehicles, a lot of the movement energy is stored in the battery so that it can be reused, but on non-electric vehicles, the movement energy is converted to heat energy by the braking system. Let’s take a look at how that system works.

On each wheel of the vehicle, there’s a braking device - usually a disc brake assembly made up of a brake disc or rotor, and a caliper with brake pads that squeeze the spinning rotor to slow it down. Some vehicles use drum brakes on the rear wheels that have a brake drum instead of a rotor. The drum is slowed down when the wheel cylinder forces the brake shoes to press against the inside of the spinning drum. Drum brake and disc brake assemblies are connected to the brake master cylinder with fluid filled brake lines.

When the driver presses the brake pedal, the rod from the pedal forces the pistons in the master cylinder to pressurize the fluid in the lines, forcing the brakes at each wheel to apply. Between the pedal and the master cylinder, there’s a brake booster. It uses engine vacuum and internal valves and a diaphragm to make the pedal easier to press.

Brake systems also have an Antilock Braking System or ABS controller. It senses the rotation speed of each wheel, and if one wheel skids, will depressurize and repressurize the fluid line for that wheel,

allowing the brake assembly to rapidly release and apply that brake so that the driver can steer the vehicle during an emergency stop.

Routine brake inspections check the thickness of pad friction material, rotors and drums, along with the condition of the brake lines and hoses, and the brake fluid.