

MODULE G

Maintenance and Repair of Braking System

An automotive braking system must bring thousands of pounds of steel and plastic to a complete and controlled stop within the shortest possible time.

The brake system in your vehicle allows the driver to slow down or stop in a consistent and reliable manner. The brakes on your car work by converting the kinetic energy of movement into thermal energy (heat).

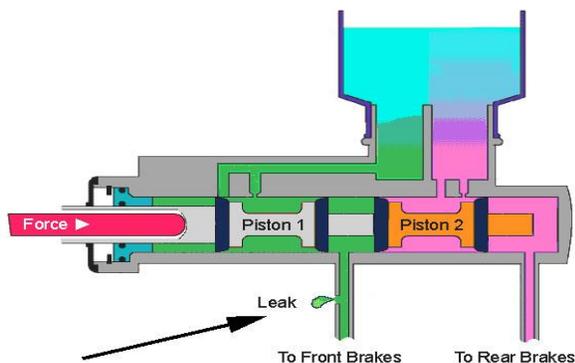
Each time you step on the brake pedal, the speed of the spinning wheels underneath your vehicle is reduced proportionately to how much pressure you apply to the pedal. A vehicle will have either a [disc braking system](#) or [drum braking system](#) to create the necessary friction for this to take place.

Modern car brake systems are referred to as power brake systems. These systems use a brake booster that amplifies the force you apply to the brake pedal. This makes braking so much easier for drivers. Power braking allows you to apply just a little bit of pressure to the brake pedal in order for the vehicle to slow down.

In the classic mechanical brake system, there was a cable which connected the brake pedal and brake shoe assembly together. When the driver stepped on the brake pedal, it pulled on the cable and allowed the brake drum spinning to slow down. This was used on cars in the early 20th century, and is still used on bikes today.

Car Brake System Components

Below is a list of the main components of a car brake system. We have included both the components of the disc and drum brake systems. Most modern vehicles have disc brakes on all four corners, but some economy cars still use drum brakes in the rear.

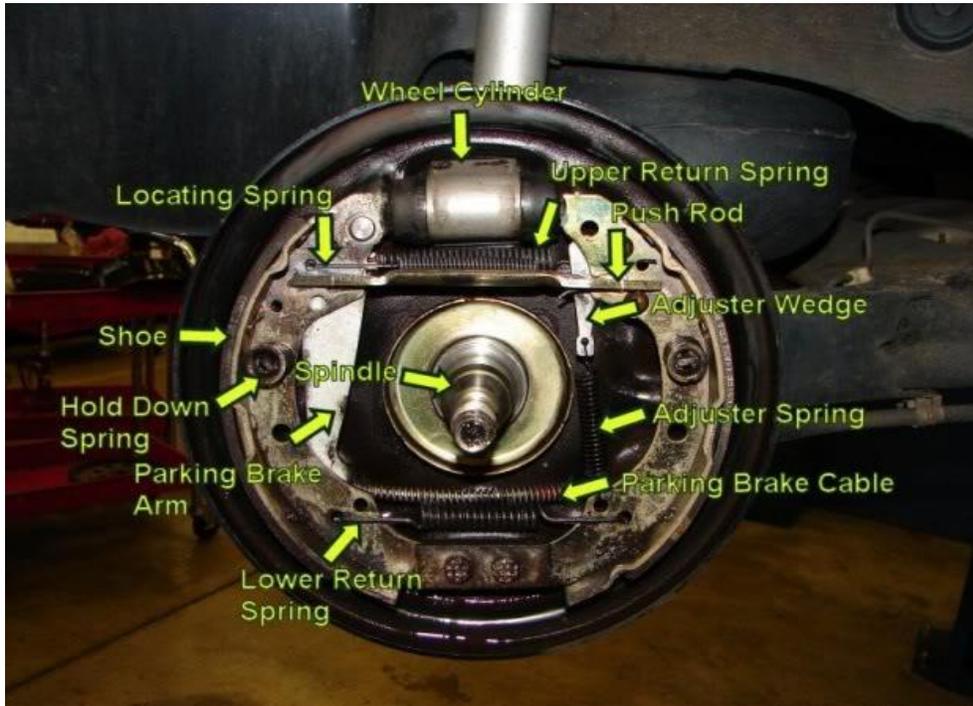


BRAKE ROTOR (DISC BRAKE)



Each wheel has a brake rotor which spins while the vehicle is moving. The brake pads rub against the rotor to create the necessary friction to slow down the disc. This in turn slows down the wheel of the vehicle. Brake rotors are typically made out of cast iron. Cast iron is very heavy, but absorbs a lot of heat. To aid in heat dissipation, many rotors are vented (as shown above). Vented rotors have vents or vanes between the two discs. These vents direct air flow into the rotor, cooling the rotor as it spins. Rear brakes commonly use solid rotors, since the rear brake do less work during a stop.

Drum Brake



Disc Pads



In a disc brake system, the brake pad and its caliper create friction as they rub against the spinning brake disc.

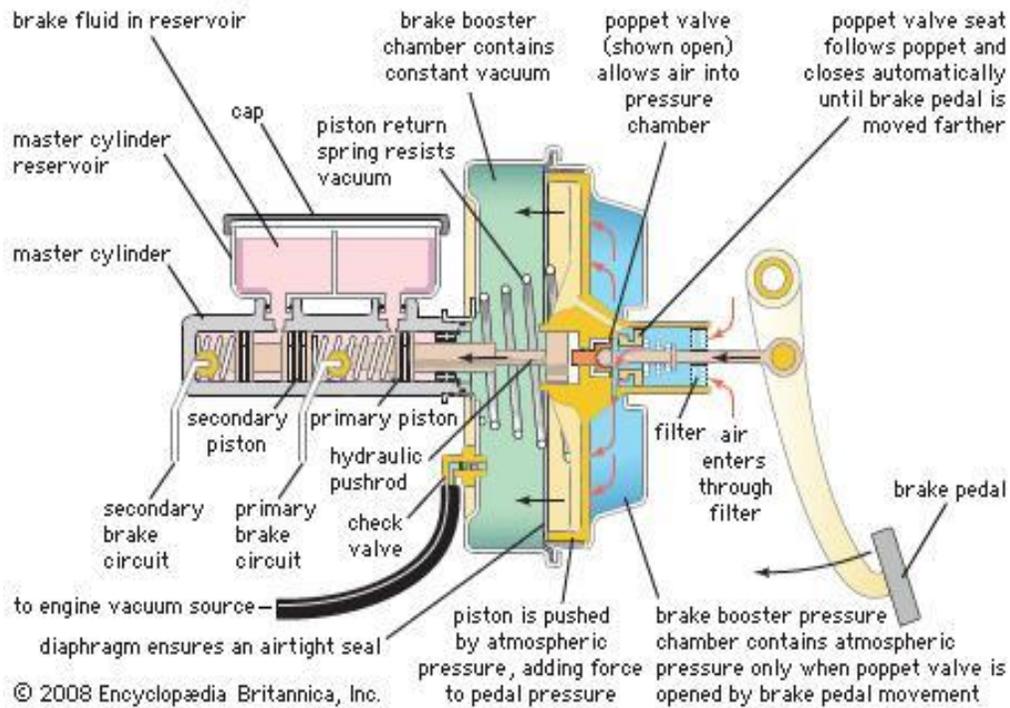
Brake pads are made out of different materials that affect their [longevity](#) and optimum heat range. Operating a brake pad outside its optimum heat range will likely increase your stopping distance.



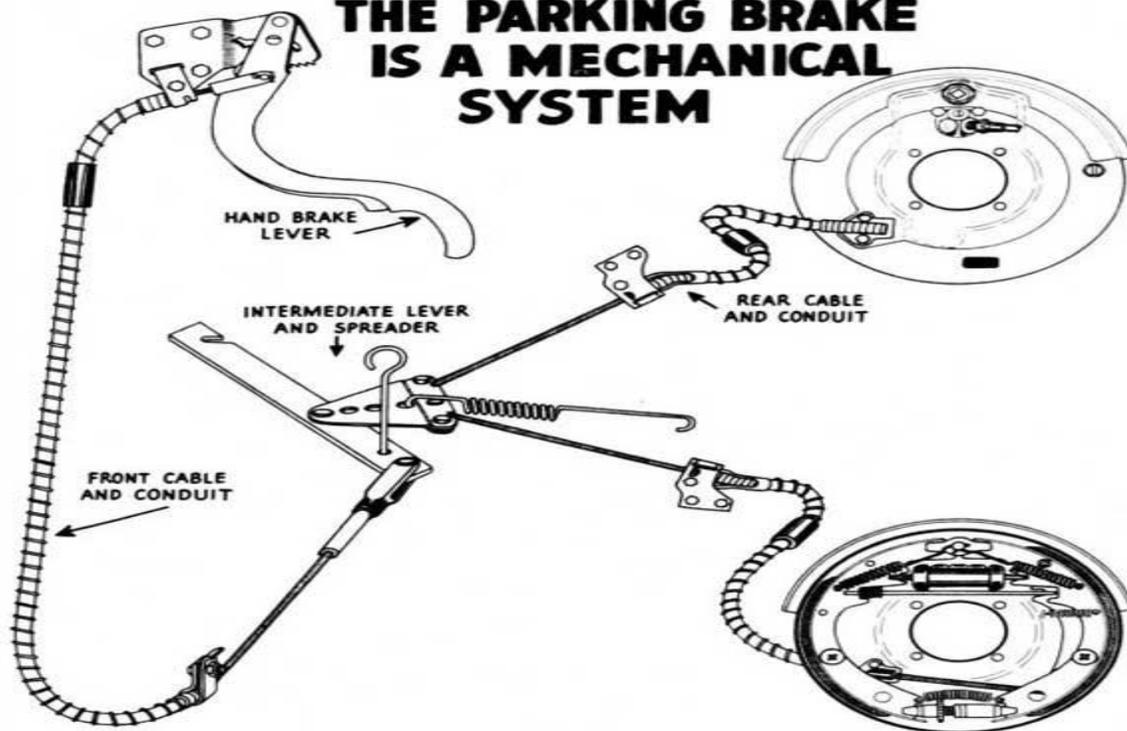
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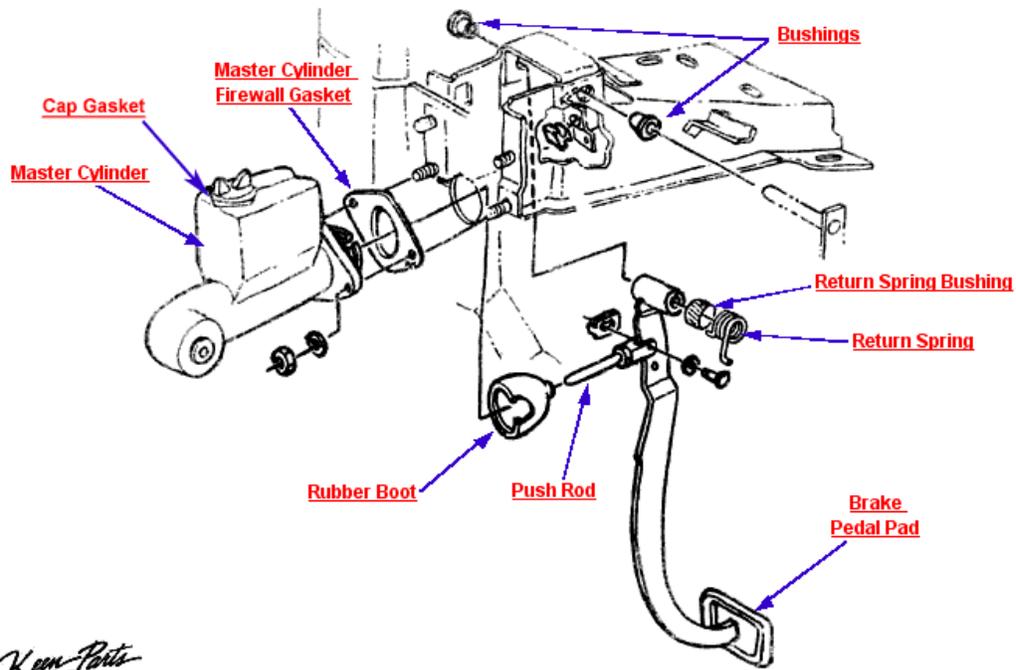
Auto-Mechanic Prepared by E.Brebnoi

Power brake system



THE PARKING BRAKE IS A MECHANICAL SYSTEM





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