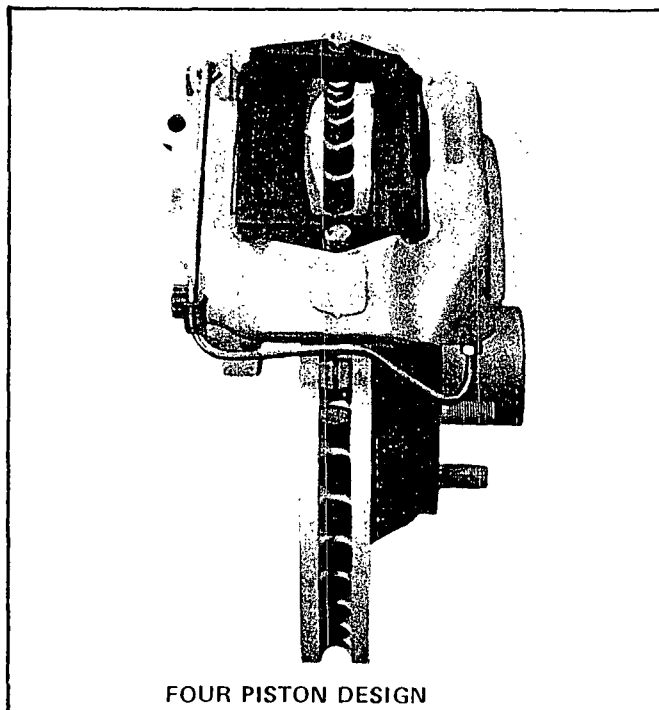


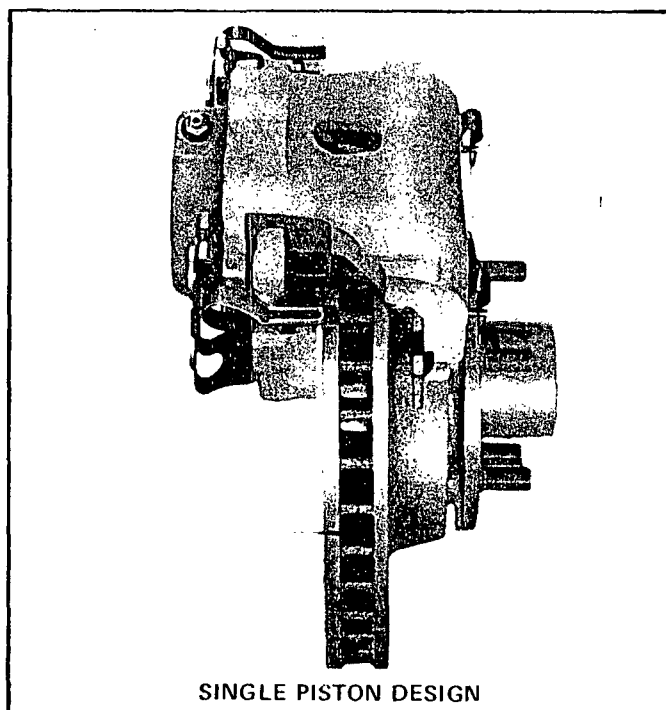
NAPA AUTOMOTIVE CAREER TRAINING

Disc Brakes—Continued

Caliper Assembly



FOUR PISTON DESIGN



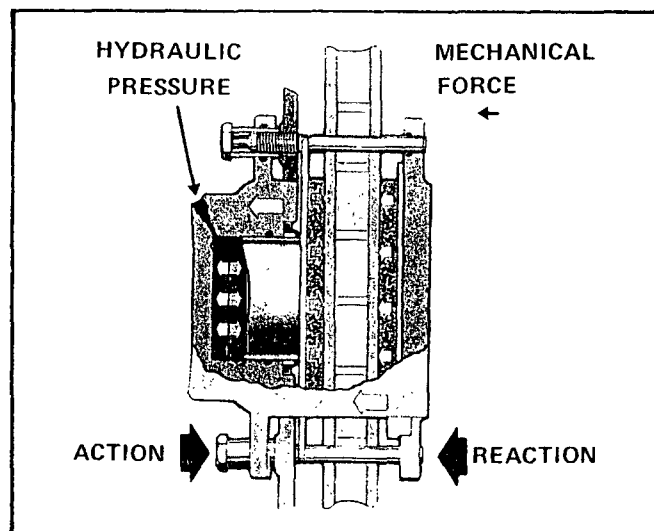
SINGLE PISTON DESIGN

The caliper assembly is a non-rotating cast body which straddles the brake rotor. In each caliper assembly, brake pads are positioned on each side of the rotor. When the brakes are applied, the pads are forced into contact with the rotor, stopping the vehicle. Hydraulic pressure in the system is transmitted to the brake pads through one or more hydraulic pistons which are part of the caliper assembly. Pistons, rubber seals and boots, and such hardware as guide pins, stabilizers, spring clips and bolts comprise the complete caliper assembly.

Early caliper designs have been of a split housing, four piston fixed type. In this unit, a pair of pistons on each side presses against the brake pads on each face of the rotor. The caliper body is bolted directly to the steering knuckle of the car.

In 1968, many automobile manufacturers changed to a single piston design caliper. In this unit, the caliper unit is one piece, having a slide-mounting to an anchor plate which is bolted to the steering knuckle.

When hydraulic pressure builds up behind the single piston, located in the inboard side of the caliper, the inner brake pad is forced against the rotor. Simultaneously, the caliper housing slides on the anchor plate, forcing the outer brake pad against the rotor.



In each caliper you will also find piston seals. Some are located in grooves machined in each cylinder bore, others are located in grooves machined into the pistons. These seals provide a hydraulic seal between the piston and the cylinder wall.

A dust boot protects the piston and cylinder walls from contamination. On some cars the boot is held in place by a retainer ring on the caliper face, and on others, a groove in the cylinder bore is used to hold the lip of the boot.