

Unit 3 Brakes

2.2 Disc brake

Disc brakes work on a hydraulic system. **FIGURE 14** shows an example of a rotating brake disc. The disc is a solid metal wheel with two pads on either side of the disc. In the first drawing, the pads are away from the discs. In the second drawing, the pads are tight against the disc because of applied pressure.

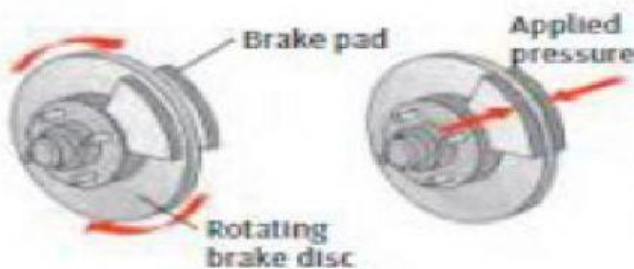


FIGURE 14

In the first drawing the brake pads are far away from the discs, but after pressure is applied they move against the discs.



FIGURE 15

Brake pads in modern vehicle systems

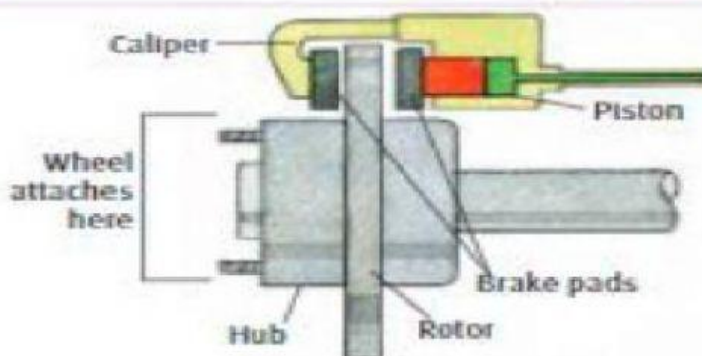


FIGURE 16

How a disc brake works

- **FIGURE 15** shows how the pads are fitted to the disc in modern vehicles.
- **FIGURE 16** shows how the two discs move when you apply pressure to the brake pedal. The pressure is caused by hydraulic fluid stored in a special tank. The fluid flows through a small pipe towards the pads at the discs. This action will move the two pads towards the disc, which will stop a moving wheel.

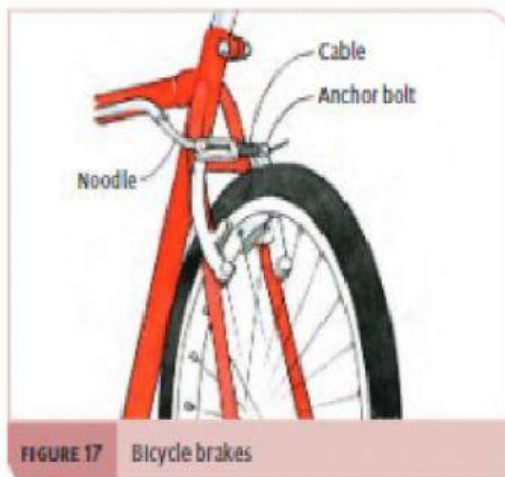


FIGURE 17 Bicycle brakes

2.3 Bicycle brake

A bicycle brake is used to slow down or stop a bicycle. We have used different types of bicycle brakes throughout history. We are still using many of these types of bicycle brakes today. When the brake blocks on your bicycle or motor vehicle wear down, you need to adjust your brakes. Traditional **cantilever brakes** use two cables. They have a main cable running down the centre line of the bicycle. A second **transverse cable** connects the cantilever. **FIGURE 17** shows how bicycle brakes are designed to keep the person riding the bicycle safe.

- 1** Does the fluid in the braking system of a vehicle have the same function as a bicycle brake cable?
- 2** What role does force play in the case of brake blocks?
- 3** Where will you classify the following braking systems?
A vehicle: pneumatic or electrical or mechanical?
A bicycle: pneumatic or electrical or mechanical?
- 4** Will pressure play an important role in the braking systems of vehicles and bicycles?
Give reasons for your answer.

1.

2.

3.

4.

