

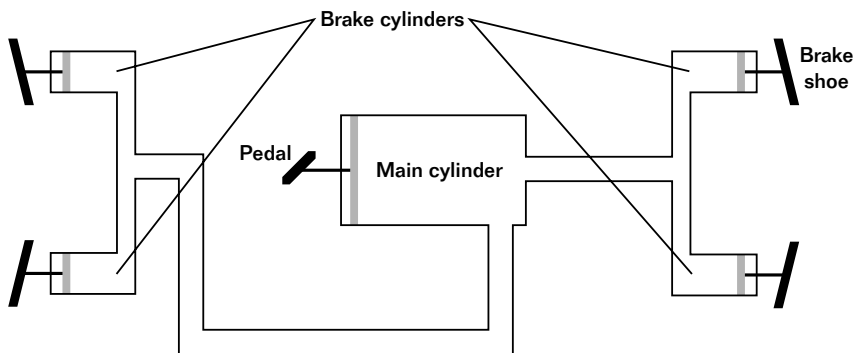
Section
9-2

HOLT PHYSICS

Concept Review

Fluid Pressure and Temperature

A car's brake system transfers pressure from the main cylinder to the brake shoes on all four wheels, as shown in the diagram. The surface area of the main cylinder piston is $7.20 \times 10^{-4} \text{ m}^2$ (7.20 cm^2), and that of the piston in each individual brake cylinder is $1.80 \times 10^{-4} \text{ m}^2$ (1.80 cm^2). The driver exerts a 5.00 N force on the pedal.



1. What is the pressure exerted on the main cylinder?

2. What is the pressure added to the liquid in this brake system?

3. What is the pressure added to each brake cylinder?

4. What is the force exerted on each brake shoe?

5. As the driver pushes the pedal, the piston moves $2.00 \times 10^{-2} \text{ m}$ (2.00 cm) in the main cylinder.
 - a. How much volume of brake fluid is pushed out of the main cylinder?

 - b. How much does the piston move in each of the brake cylinders?

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