



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

COIMBATORE-35.



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Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai.

DEPARTMENT OF AUTOMOBILE ENGINEERING

COURSE NAME : 19AUB202 – AUTOMOTIVE SYSTEMS

II YEAR / III SEMESTER

Unit 5 – Braking System

Topic : Need and Characteristics and Principle of Braking system



BRAKING SYSTEM



- ❖ Braking system is designed to slow and halt the motion of vehicle.
- ❖ To do this, various components within the brake system must convert vehicle's moving energy into heat.
- ❖ This is done by using friction.
- ❖ Friction is the resistance to movement exerted by two objects on each other



TYPES OF BRAKES AND BRAKING SYSTEM



❖ Drum Brake

❖ Disc Brake

❖ Mechanical Braking system

❖ Hydraulic Braking system

❖ Air Braking system

❖ Electromagnetic Braking system

❖ Power Braking system



NEED FOR BRAKING SYSTEM



- ❖ To stop the vehicle
- ❖ To slow down the vehicle
- ❖ Ensuring safety in driving
- ❖ Control and Maneuverability
- ❖ Prevention of Overheating
- ❖ Wear and Tear Reduction
- ❖ Energy Management



CHARACTERISTICS FOR GOOD BRAKING SYSTEM



- ❖ A good braking system should be highly efficient in converting kinetic energy into heat, allowing the vehicle to decelerate or stop effectively
- ❖ The braking system must be reliable and consistent, providing predictable performance over time and under different driving conditions.
- ❖ The braking system should offer responsive control, allowing the driver to modulate braking force easily and effectively.
- ❖ Brakes should be designed to resist fade, which occurs when prolonged or repeated braking leads to a reduction in braking efficiency due to heat buildup.



CHARACTERISTICS FOR GOOD BRAKING SYSTEM



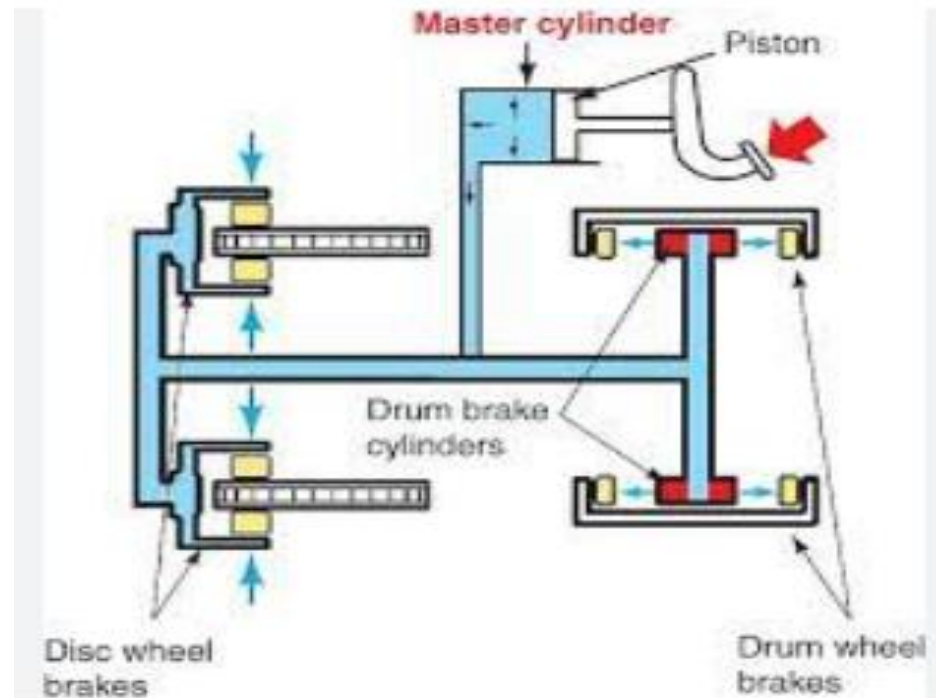
- ❖ The braking force should be evenly distributed among all wheels to prevent skidding or uneven wear.
- ❖ A good braking system should provide short stopping distances, allowing the vehicle to come to a stop quickly and safely.
- ❖ Braking components, such as brake pads, rotors, and calipers, should be durable and resistant to wear.
- ❖ The braking system should be designed for ease of maintenance.
- ❖ Components should be accessible for inspection and replacement, and routine maintenance tasks should be straightforward.



PRINCIPLE OF BRAKING SYSTEM



- ❖ The principle of a braking system involves converting the kinetic energy of a moving vehicle into heat energy through the application of friction.
- ❖ Pascal law is used





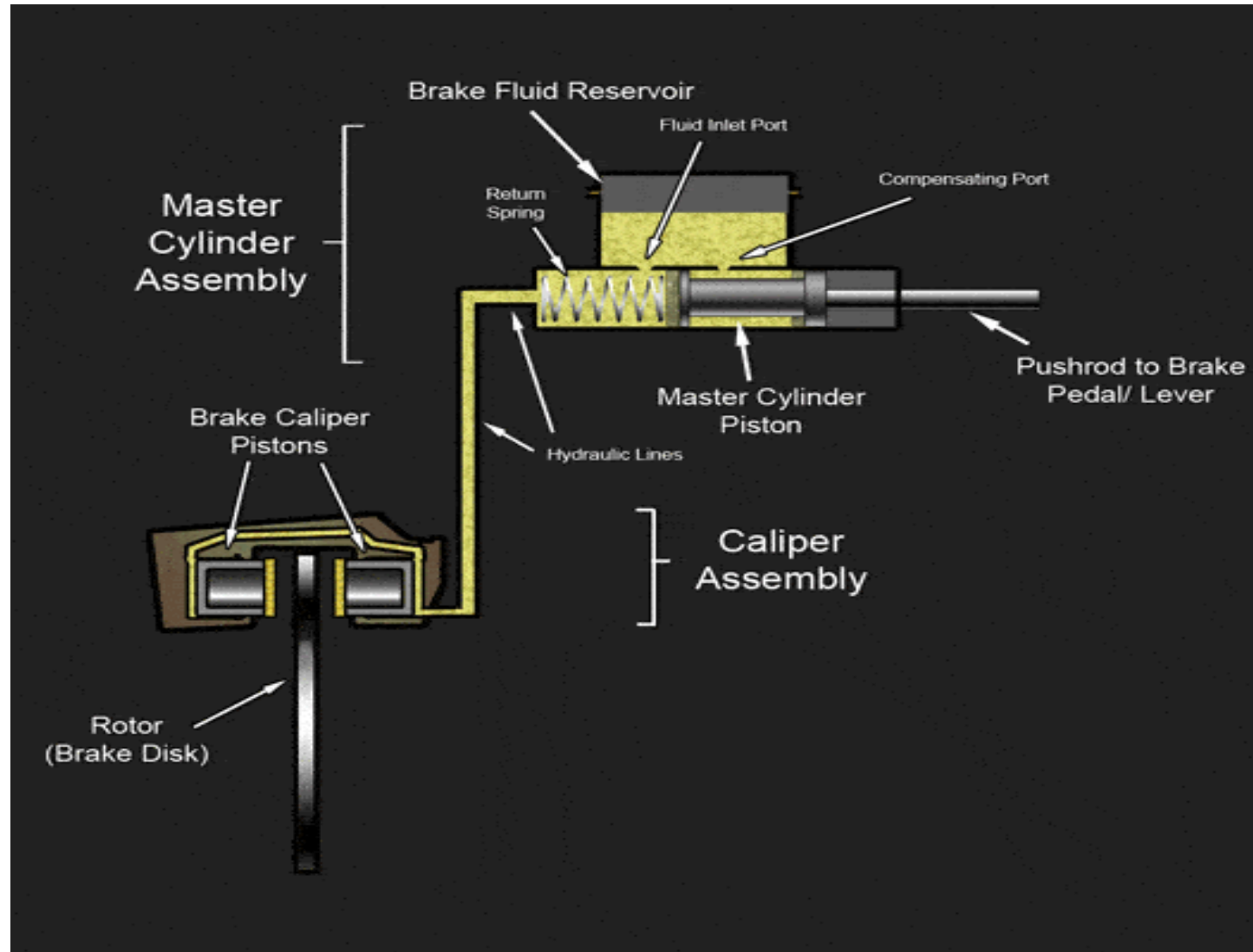
APPLICATIONS



- ❖ Master Cylinder
- ❖ Pedal
- ❖ Brake lines
- ❖ Friction material (Brake pad or Brake shoe)
- ❖ Brake Caliper or Wheel Cylinder



BRAKING SYSTEM PRINCIPLE





THANK YOU !!!