

Automotive Technology 7th Edition

Chapter 95 – Brake Hydraulic Systems

Lesson Plan



CHAPTER SUMMARY:

1. Hydraulic Principles, Pascal's Law, Master Cylinders, and Diagnosing Master Cylinders
2. Hydraulic Valves and Switches, Electronic Brake Proportioning, and Combination Valves
3. Brake Pedal Position Sensor/Switch

OBJECTIVES:



1. Explain how the noncompressibility of liquids is used in brake systems.
2. State Pascal's law.
3. Describe the function, purpose, operation, and types of master cylinders.
4. Describe the process of diagnosing and troubleshooting master cylinders.
5. Discuss the different valves and switches used in the brake hydraulic system, including the fluid level switch, proportioning valve, and metering valve.
6. Explain electronic brake proportioning (EBP).
7. List the components included in a combination valve.
8. Describe how a brake light switch works.

RESOURCES: (All resources may be found at jameshalderman.com)



1. Task Sheet: Hydraulic Pressure Analysis
2. Task Sheet: Brake Pedal Height
3. Task Sheet: Master Cylinder Service
4. Task Sheet: Hydraulic System Fault Analysis
5. Task Sheet: Brake Control Valves
6. Task Sheet: Red Brake Warning Lamp Diagnosis
7. Task Sheet: Brake Stop Light Switch
8. Crossword Puzzle and Word Search
9. Chapter PowerPoint
10. Videos: [\(A5\) Brakes Videos](#)
11. Animations: [\(A5\) Brakes Animations](#)

ACTIVITIES:



1. Task Sheet: Hydraulic Pressure Analysis
2. Task Sheet: Brake Pedal Height
3. Task Sheet: Master Cylinder Service
4. Task Sheet: Hydraulic System Fault Analysis
5. Task Sheet: Brake Control Valves
6. Task Sheet: Red Brake Warning Lamp Diagnosis
7. Task Sheet: Brake Stop Light Switch
8. Crossword Puzzle and Word Search

ASSIGNMENTS:



1. Chapter crossword and word search puzzles from the website.
2. Complete end of chapter quiz from the textbook.
3. Complete multiple choice and short answer quizzes downloaded from the website.

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CLASS DISCUSSION:

1. Review and group discussion chapter Frequently Asked Questions and Tech Tips sections.
2. Review and group discussion of the five (5) chapter Review Questions.



NOTES AND EVALUATION:
