

Automotive Technology 6th Edition

Chapter 99 – Hydraulic Valves and Switches

Lesson Plan

CHAPTER SUMMARY:



1. Pressure-differential switch (brake warning switch) and brake fluid level sensor
 2. Proportioning valve, electronic brake proportioning, and metering valve (hold-off) operation
 3. Combination valves and brake pedal position sensor/switch
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OBJECTIVES:



1. Describe the operation of a pressure-differential switch and a brake fluid level sensor switch.
 2. Describe the operation of the proportioning valve.
 3. Discuss the need and use of a metering valve.
 4. List the components included in a combination valve.
 5. Describe how a brake light switch works.
 6. This chapter will help you prepare for the Brakes (A5) ASE certification test content area “A” (Hydraulic, Power Assist, and Parking Brake Systems Diagnosis and Repair)
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RESOURCES: (All resources may be found at <http://www.jameshalderman.com>)



1. Task Sheet ASE (A5-B-5) P-1: Brake Control Valves
 2. Task Sheet ASE (A-5-B-10) P-3, (A5-B-11) P-2: Red Brake Warning Lamp Diagnosis
 3. Task Sheet ASE (A5-F-5) P-1: Brake Stop Light Switch
 4. Chapter PowerPoint
 5. Chapter Crossword Puzzle and Word Search
 6. Animations: Brake Combination Valve, Metering Valve, and Pressure Differential Switch/Valve
 7. Animations: Pressure Differential Switch/Valve
 8. Videos: Combination valve (time 1:09) and Brake pressure switch (time 2:10)
 9. Videos: Brake stop light check (time 1:52)
 10. Videos: Auto Repair: How to Replace a Proportioning Valve (time 2:28)
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ACTIVITIES:



1. Task Sheet ASE (A5-B-5) P-1: Have students complete Brake Control Valves Task Sheet.
 2. Task Sheet ASE (A-5-B-10) P-3, (A5-B-11) P-2: Have students complete Brake Red Brake Warning Lamp Diagnosis Task Sheet.
 3. Task Sheet ASE (A5-F-5) P-1: Have students complete Brake Stop Light Switch Task Sheet.
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ASSIGNMENTS:



1. Chapter crossword and word search puzzles.
 2. Complete end of chapter 10 question quiz.
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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](#).
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NOTES AND EVALUATION:


