

Automotive Chassis Systems 8th Edition

Chapter 17 – Power Brake Unit Operation, Diagnosis, and Service

Lesson Plan



CHAPTER SUMMARY:

1. The Need for Power Brake Assist and Principle of Vacuum
2. Vacuum Booster Theory, Vacuum Check Valve, and Vacuum Brake Booster Operation
3. Dual- (Tandem-) Diaphragm Vacuum Boosters and Brake Assist System
4. Vacuum Booster Operation Test and Vacuum Booster Leak Test
5. Hydraulic System Leak Test and Pushrod Clearance Adjustment
6. Vacuum Booster Disassembly and Service and Hydro-Boos Hydraulic Brake Booster
7. Hydro-Boost Symptom-Based Guide

OBJECTIVES:



1. Discuss the need for power brake assist.
2. State the principles of vacuum and the vacuum booster theory.
3. Discuss the operation of a vacuum check valve, vacuum brake booster, dual-diaphragm vacuum boosters, and brake assist system.
4. Discuss the vacuum booster operation test, vacuum booster leak test, and hydraulic system leak test.
5. Describe how to adjust the pushrod length and disassemble the vacuum brake booster for service.
6. Explain the operation and diagnosis of Hydro-boost hydraulic brake booster.

RESOURCES: ([All resources may be found at jameshalderman.com](http://www.jameshalderman.com))



1. Task Sheet: Vacuum Power Brake Booster Test
2. Task Sheet: Vacuum Supply/Manifold or Auxiliary Pump
3. Task Sheet: Vacuum-Type Power Booster Unit
4. Task Sheet: Hydro-Boost Test
5. Task Sheet: Master Cylinder Pushrod Length
6. [Crossword Puzzle and Word Search](#)
7. [Videos: ASE A5 Brakes](#)
8. [Animations: ASE A5 Brakes](#)

ACTIVITIES:



1. Task Sheet: Vacuum Power Brake Booster Test
2. Task Sheet: Vacuum Supply/Manifold or Auxiliary Pump
3. Task Sheet: Vacuum-Type Power Booster Unit
4. Task Sheet: Hydro-Boost Test
5. Task Sheet: Master Cylinder Pushrod Length

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.
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NOTES AND EVALUATION:
