

# Automotive Technology 7<sup>th</sup> Edition

## Chapter 104 – Power Brake Unit Operation, Diagnosis, and Service

### Lesson Plan



#### **CHAPTER SUMMARY:**

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



#### **OBJECTIVES:**

1. Discuss the need for power brake assist.
2. State the principles of vacuum.
3. Discuss vacuum booster theory.
4. Discuss the operation of a vacuum check valve.
5. Discuss the operation of a vacuum brake booster.
6. Describe dual-diaphragm vacuum boosters.
7. Discuss the brake assist system.
8. Discuss the vacuum booster operation test.
9. Describe the vacuum booster leak test.
10. Describe the hydraulic system leak test.
11. Describe how to adjust the pushrod length.
12. Explain the operation and diagnosis of Hydro-Boost hydraulic brake booster.
13. List Hydro-Boost symptoms and possible causes.



#### **RESOURCES:** (All resources may be found at 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. Chapter PowerPoint
8. Videos: [\(A5\) Brakes Videos](#)
9. Animations: [\(A5\) Brakes Animations](#)



#### **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
6. Crossword Puzzle and Word Search

**Automotive Technology 7<sup>th</sup> Edition**  
**Chapter 104 – Power Brake Unit Operation, Diagnosis, and Service**  
**Lesson Plan**



**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.



---

**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:**

---