

# Automotive Technology 6<sup>th</sup> Edition

## Chapter 85 – Evaporative Emission Control Systems

### Lesson Plan



#### **CHAPTER SUMMARY:**

1. Evaporative emission control system and nonenhanced evaporative control systems
  2. Enhanced evaporative control systems and leak detection pump system
  3. Onboard refueling vapor recovery, diagnosing the EVAP system, and onboard refueling vapor recovery
  4. Diagnosing the EVAP system, evaporative system monitor, typical EVAP monitor, and EVAP DTC's
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#### **OBJECTIVES:**

1. Explain the operation of an evaporative emission control system and compare enhanced and nonenhanced evaporative control (EVAP) systems.
  2. Discuss leak detection pump systems and onboard refueling vapor recovery, and explain how to diagnose the EVAP system.
  3. Discuss the functions of an evaporative system monitor.
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**RESOURCES:** (All resources may be found at <http://www.jameshalderman.com>)

1. **Task Sheet ASE (A8-E-5) P-2:** EVAP System Component Inspection
  2. **Task Sheet ASE (A8-E-5) P-2:** Evaporative Emission Controls Diagnosis
  3. **Task Sheet ASE (A8-E-7) P-3:** Evaporative Emission DTC Diagnosis
  4. Chapter PowerPoint
  5. Chapter Crossword Puzzle and Word Search
  6. Animations: Evaporative Emission Control System
  7. Videos: See list at the end of the lesson plan.
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#### **ACTIVITIES:**

1. **Task Sheet ASE (A8-E-5) P-2:** Have students complete EVAP System Component Inspection Task Sheet.
  2. **Task Sheet ASE (A8-E-5) P-2:** Have students complete Evaporative Emission Controls Diagnosis Task Sheet.
  3. **Task Sheet ASE (A8-E-7) P-3:** Have students complete Evaporative Emission DTC Diagnosis 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:**

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**Videos:** (at <http://www.jameshalderman.com>)

- Vent solenoid (time 2:53)
- LDP EVAP system (time 5:43)
- Fuel vapor control valve (time 0:46)
- VSV diagnostics (time 4:44)
- EVAP diagnostics (time 12:53)
- EVAP (time 6:06)
- EVAP part 2 (time 9:34)
- Purge control solenoid (time 1:28)
- Charcoal canister (time 1:11)
- VW EVAP system (time 32:15)
- P1494 leak detection pump (time 2:45)
- P0442 (time 6:11)
- Vacuum leak (time 12:09)
- EVAP leak test (time 7:59)
- GM EVAP vent solenoid testing (time 33:00)