

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

## Chapter 87

### Positive Crankcase Ventilation and Secondary Air-Injection Systems

#### Lesson Plan

##### **CHAPTER SUMMARY:**



1. Crankcase ventilation and PCV system diagnosis
  2. PCV-related DTCs and secondary air-injection systems
  3. Secondary air-injection system diagnosis and SAI-related DTCs
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##### **OBJECTIVES:**



1. Describe the purpose and function of the positive crankcase ventilation (PCV) system.
  2. Explain the purpose and function of the secondary air-injection (SAI) system and how to diagnose faults in the system.
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**RESOURCES:** (All resources may be found at <http://www.jameshalderman.com>)



1. **Task Sheet ASE (A8-E-1) P-3, (A8-E-2) P-2:** PCV System Inspection
  2. **Task Sheet ASE (A8-E-1) P-3:** PCV System Diagnosis
  3. **Task Sheet ASE (A8-E-4) P-2:** Secondary Air Injection Diagnosis
  4. **Task Sheet ASE (A8-E-4) P-2:** AIR Pump Component Inspection
  5. **Task Sheet ASE (A8-E-4) P-2:** AIR Pump Electrical Component Inspection
  6. Chapter PowerPoint
  7. Chapter Crossword Puzzle and Word Search
  8. Animations: Positive Crankcase Ventilation (PCV) and Secondary Air Injection
  9. Videos: Testing Electric Air Pump (time 18:44) and PCV Oil Leak (time 1:04)
  10. Videos: PCV valve and grommet replacement (time 1:45)
  11. Videos: Secondary Air Injection system (time 1:11)
  12. Videos: Secondary air injection (time 4:23) and PCV valve operation (time 2:37)
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##### **ACTIVITIES:**



1. **Task Sheet ASE (A8-E-1) P-3, (A8-E-2) P-2:** Have students complete PCV System Inspection Task Sheet.
  2. **Task Sheet ASE (A8-E-1) P-3:** Have students complete PCV System Diagnosis Task Sheet.
  3. **Task Sheet ASE (A8-E-4) P-2:** Have students complete Secondary Air Injection Diagnosis Task Sheet.
  4. **Task Sheet ASE (A8-E-4) P-2:** Have students complete AIR Pump Component Inspection Task Sheet.
  5. **Task Sheet ASE (A8-E-4) P-2:** Have students complete AIR Pump Electrical Component Inspection 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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