

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

## Chapter 32 – Camshaft and Valve Trains

### Lesson Plan

#### **CHAPTER SUMMARY:**



1. Camshaft design, camshaft drives, and camshaft movement
  2. Rocker arms, pushrods, and lifters or tappets
  3. Overhead camshaft trains, valve train lubrication, and valve train problem diagnosis
  4. Camshaft specifications, camshaft removal, and measuring camshafts
  5. Selecting camshafts, variable valve timing, variable lift, and cylinder deactivation systems
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#### **OBJECTIVES:**



1. Describe the purpose and function of camshaft and camshaft design.
  2. Discuss camshaft drives and camshaft movement.
  3. Discuss rocker arms, pushrods, and lifters or tappets.
  4. Explain overhead camshaft valve trains, their lubrication, and problem diagnosis.
  5. Explain camshaft specifications.
  6. Explain how to remove, measure, and select a camshaft.
  7. Explain variable valve timing, and variable lift and cylinder deactivation systems.
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**RESOURCES:** (All resources may be found at <http://www.jameshalderman.com>) Internet access required to hyperlink.



1. Task Sheet ASE (A1-A-2) P-1: Camshaft Specification
  2. Task Sheet ASE (A1-B-3) P-2: Valve Train Inspection
  3. Task Sheet ASE (A1-B-12) P-2: Valve Lifter Inspection
  4. Task Sheet ASE (A1-B-4) P-3: Valve Adjustment
  5. Task Sheet ASE (A1-B-13) P-3: Camshaft Inspection
  6. Task Sheet ASE (A1-B-14) P-3, (A1-C-6) P-3: Camshaft Bearing Surface Inspection
  7. Task Sheet ASE (A1-B-6) P-1, (A8-A-11) P-1: Camshaft Position Sensor
  8. Chapter PowerPoint
  9. Chapter Crossword Puzzle and Word Search
  10. Videos: [\(A1\) Engine Repair Videos](#)
  11. Animations: [\(A1\) Engine Repair Animations](#)
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#### **ACTIVITIES:**



1. Task Sheet ASE (A1-A-2) P-1: Have students complete Camshaft Specification Task Sheet.
  2. Task Sheet ASE (A1-B-3) P-2: Have students complete Valve Train Inspection Task Sheet.
  3. Task Sheet ASE (A1-B-12) P-2: Have students complete Valve Lifter Inspection Task Sheet.
  4. Task Sheet ASE (A1-B-4) P-3: Have students complete Valve Adjustment Task Sheet.
  5. Task Sheet ASE (A1-B-13) P-3: Have students complete Camshaft Inspection Task Sheet.
  6. Task Sheet ASE (A1-B-14) P-3, (A1-C-6) P-3: Have students complete Camshaft Bearing Surface Inspection Task Sheet.
  7. Task Sheet ASE (A1-B-6) P-1, (A8-A-11) P-1: Have students complete Camshaft Position Sensor 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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