

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

## Chapter 27 – Cylinder Head Servicing and Inspection

### Lesson Plan



#### **CHAPTER SUMMARY:**

1. Cylinder Heads, Intake and exhaust Ports, and Cylinder Head Passages,
2. Cylinder Head Disassembly and Inspection, Cylinder Resurfacing, and Intake Manifold Alignment
3. Valve Guides, Valve Guide Replacement, Intake and Exhaust Valves, and Valve Seats
4. Valve Springs, Valve Keepers and Rotators, and Valve Seat Reconditioning
5. Valve Stem Height, Installed Height, Valve Stem Seals, and Installing the Valves



#### **OBJECTIVES:**

1. Explain the design and construction of cylinder heads.
2. Explain the design and construction of intake and exhaust ports.
3. Discuss cylinder head passages.
4. Describe cylinder head disassembly and inspection.
5. Describe cylinder head resurfacing.
6. Discuss valve guides.
7. Describe valve guide replacement.
8. Discuss intake and exhaust valves.
9. Discuss valve seats.
10. Discuss valve springs.
11. Discuss valve replacement and reconditioning.
12. Discuss valve stem height and installed height.
13. Explain valve stem seals.
14. Describe the procedure of installing valves.



#### **RESOURCES:** (All resources may be found at jameshalderman.com)

1. Task Sheet: Cylinder Head Specifications
2. Task Sheet: Cylinder Head Flatness Measurement
3. Task Sheet: Valve Guide Specifications and Measurements
4. Task Sheet: Cylinder Head and Valve Train Components
5. Task Sheet: Valve Spring Squareness and Free Height
6. Task Sheet: Valve Stem Seal Replacement
7. Task Sheet: Valve Seat Inspection and Measurement
8. Task Sheet: Valve Spring Assembled Height
9. Chapter PowerPoint
10. Crossword Puzzle and Word Search
11. Videos: [\(A1\) Engine Repair Videos](#)
12. Animations: [\(A1\) Engine Repair Animations](#)

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#### **ACTIVITIES:**

1. Task Sheet: Cylinder Head Specifications
2. Task Sheet: Cylinder Head Flatness Measurement
3. Task Sheet: Valve Guide Specifications and Measurements
4. Task Sheet: Cylinder Head and Valve Train Components
5. Task Sheet: Valve Spring Squareness and Free Height
6. Task Sheet: Valve Stem Seal Replacement
7. Task Sheet: Valve Seat Inspection and Measurement
8. Task Sheet: Valve Spring Assembled Height
9. Crossword Puzzle and Word Search



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#### **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:**

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