**Automotive Engines Theory and Servicing 10th Edition**

**Chapter 9 – Gasoline Engine Operation, Parts, and Specification**

**Lesson Plan**

**CHAPTER SUMMARY:**

1. Purpose and Function, Energy and Power, Engine Construction Overview, and Engine Parts and Systems

2. Four-Stroke Cycle Operation, Engine Classification and Construction, and Engine Measurement

3. Compression Ratio and Torque and Horsepower

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**OBJECTIVES:**

1. Discuss the engine’s purpose and function, energy and power, and engine construction.

2. Explain engine parts and systems.

3. Explain four-stroke cycle operation.

4. Discuss engine classification and construction.

5. Explain engine measurement.

6. Discuss compression ratio, torque, and horsepower.

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**RESOURCES:** [(All resources may be found at jameshalderman.com)](https://jameshalderman.com/)

1. Task Sheet: Hybrid Vehicle ICE Service Precautions

2. Task Sheet: Remove Cylinder Head(s) & Inspect

3. Task Sheet: Engine Block Disassembly

4. Task Sheet: Oil Pressure Measurement

5. Chapter PowerPoint

6. [Crossword Puzzle and Word Search (A1)](https://jameshalderman.com/a1_puzzles_lib_page/)

7. [Crossword Puzzle and Word Search (A8)](https://jameshalderman.com/a8_puzzles_lib_page/)

8. [Videos: (A1) Engine Repair](https://jameshalderman.com/a1_vid_lib_page/)

9. [Videos: (A8) Engine Performance](https://jameshalderman.com/a8_vid_lib_page/)

10. [Animations: (A1) Engine Repair](https://jameshalderman.com/a1_anim_lib_page/)

11. [Animations: (A8) Engine Performance](https://jameshalderman.com/a8_anim_lib_page/)

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**ACTIVITIES:**

1. Task Sheet: Hybrid Vehicle ICE Service Precautions

2. Task Sheet: Remove Cylinder Head(s) & Inspect

3. Task Sheet: Engine Block Disassembly

4. Task Sheet: Oil Pressure Measurement \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**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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