

Automotive Technology 7th Edition

Chapter 16 – Diesel Engine Operation and Aftertreatment

Lesson Plan



CHAPTER SUMMARY:

1. Diesel Engines, Fuel Tank and Lift Pump, Injection Pump, and Engine-Driven Vacuum Pump
 2. HEUI System, Diesel Injector Nozzles, Glow Plugs, Diesel Fuel Heaters, and Diesel Engine Turbochargers
 3. Exhaust Gas Recirculation, Diesel Particulate Matter, and Diesel Oxidation Catalyst
 4. Diesel Exhaust Particulate Filter and Selective Catalytic Reduction
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OBJECTIVES:

1. State the characteristics of diesel engines.
 2. Describe the fuel tank and lift pump.
 3. Describe the injection pump.
 4. Describe the engine-driven vacuum pump.
 5. Explain the HEUI system.
 6. Discuss the purpose of diesel injector nozzles.
 7. Discuss the purpose of glow plugs.
 8. Discuss the purpose of diesel fuel heaters.
 9. Explain the purpose of diesel engine turbochargers.
 10. Discuss the purpose of the exhaust gas recirculation system.
 11. Explain diesel particulate matter.
 12. Discuss the function of diesel oxidation catalysts.
 13. Discuss the function of diesel exhaust particulate filters.
 14. Discuss selective catalytic reduction.
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RESOURCES: (All resources may be found at jameshalderman.com)

1. Task Sheet: Diesel Engine Service Information
 2. Task Sheet: Diesel Exhaust Fluid Service II
 3. Chapter PowerPoint
 4. Crossword Puzzle and Word Search
 5. Videos: [\(A9\) Light Diesel Videos](#)
 6. Animations: [\(A9\) Light Diesel Animations](#)
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ACTIVITIES:

1. Task Sheet: Diesel Engine Service Information
 2. Task Sheet: Diesel Exhaust Fluid Service II
 3. 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.

NOTES AND EVALUATION:

