

Advanced Engine Performance Diagnosis 7th Edition

Chapter 2 – Gasoline, Alternative Fuels, and Diesel Fuels

Lesson Plan

CHAPTER SUMMARY:



1. Gasoline, Refining, Volatility, and Air-Fuel Ratios
 2. Normal and Abnormal Combustion, Octan Rating and Gasoline Additives
 3. Gasoline Blending, Testing Gasoline for Alcohol Content, and General Gasoline Recommendations
 4. E85, Alternative Fuel Vehicles, Methanol, Propane, and Compressed Natural Gas
 5. Liquefied Natural Gas, P-Series Fuels, Synthetic Fuels
 6. Safety Procedures When Working with Alternative
 7. Diesel Fuel, Biodiesel, and E-Diesel Fuel
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OBJECTIVES:



1. Discuss the characteristics of gasoline, refining of gasoline, and volatility of gasoline.
 2. Explain air-fuel ratios, normal and abnormal combustion, and octane rating.
 3. Discuss gasoline additives, gasoline blending, and testing gasoline for alcohol content.
 4. Discuss general gasoline recommendations.
 5. Explain alternative fuel vehicles, and discuss the safety procedures when working with alternative fuels.
 6. Discuss E85, methanol, and propane fuel.
 7. Discuss compressed natural gas, liquefied natural gas, and P-series fuels.
 8. Discuss synthetic fuels.
 9. Compare diesel fuel, biodiesel, and E-diesel fuel.
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RESOURCES: ([All resources may be found at jameshalderman.com](http://www.jameshalderman.com))



1. Task Sheet: Flexible Fuel Vehicle Identification
 2. Task Sheet: Alternative Fuel Power and Economy Specifications
 3. Task Sheet: Alcohol Content in Gasoline
 4. Chapter PowerPoint
 5. [Crossword and Word Search Puzzles](#)
 6. [Videos: \(A8\) Engine Performance](#)
 7. [Animations: \(A8\) Engine Performance](#)
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ACTIVITIES:



1. Task Sheet: Flexible Fuel Vehicle Identification
 2. Task Sheet: Alternative Fuel Power and Economy Specifications
 3. Task Sheet: Alcohol Content in Gasoline
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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:
