Advanced Engine Performance Diagnosis 8th Edition
Chapter 20 – Fuel Trim Diagnosis
Lesson Plan

CHAPTER SUMMARY:

1. Fuel Trim, Base Pulse-Width, Determining Pulse Width, and Fuel Trim Operation
2. Using Fuel Trim as a Diagnostic Aid, Fuel Trim Cells, Fuel Trim Diagnosis, and MASS Airflow Accuracy
3. Volumetric Efficiency

OBJECTIVES:

1. Explain the purpose and function of fuel trim.
2. Discuss the difference between speed density and mass airflow fuel control.
3. Explain how the PCM determines the base injector pulse width.
4. Compare short-term and long-term fuel trim.
5. Explain how fuel trim can aid in diagnosis.
6. Explain the purpose of fuel trim cells.
7. Describe how to diagnose fuel trim concerns.
8. List factors that can affect the accuracy of the mass airflow sensor.
9. Describe how knowing the volumetric efficiency of the engine can help diagnose engine performance concerns.

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

1. Task Sheet: Fuel Trim Diagnosis
2. Chapter PowerPoint
3. Crossword and Word Search Puzzles
4. Videos: (A8) Fuel, Air Induction, and Exhaust Systems Diagnosis and Repair
5. Animations: (A8) Fuel, Air Induction, and Exhaust Systems Diagnosis and Repair

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ACTIVITIES:

1. Task Sheet: Fuel Trim Diagnosis

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.

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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