

Advanced Engine Performance Diagnosis 8th Edition

Chapter 17 – MAP and MAF Sensors

Lesson Plan



CHAPTER SUMMARY:

1. Air Pressure, Pressure Sensors, Manifold Absolute Pressure Sensors, and PCM Uses of the MAP Sensor
 2. Barometric Pressure Sensor, Testing the MAP Sensor, and MASS Airflow Sensor Types
 3. PCM Uses for Airflow Sensors, Testing MASS Airflow Sensors, and MAF Sensor Contamination
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OBJECTIVES:

1. Discuss the variations in pressure that can occur within an engine.
 2. Describe principles of pressure sensors.
 3. Discuss how MAP sensors work.
 4. Discuss the PCM uses of the MAP sensor.
 5. Describe how the BARO sensor is used to test altitude.
 6. List the methods that can be used to test MAP sensors.
 7. Discuss MAF sensor types.
 8. Discuss the PCM uses for the MAF sensor.
 9. List the methods that can be used to test MAF sensors.
 10. List the methods that can be used to test MAF sensor contamination.
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RESOURCES: (All resources may be found at jameshalderman.com)

1. Task Sheet: MAP Sensor Visual Inspection
 2. Task Sheet: MAP Sensor DMM Testing
 3. Task Sheet: MAP Sensor Waveform Test
 4. Task Sheet: MAP Sensor Diagnosis
 5. Task Sheet: MAP Sensor Output Chart
 6. Task Sheet: MAF Sensor Visual Inspection
 7. Task Sheet: Air Vane Sensor DMM Testing
 8. Task Sheet: MAF Sensor Waveform Testing
 9. Task Sheet: MAF Sensor Diagnosis
 10. Task Sheet: MAF Sensor Scope
 11. Chapter PowerPoint
 12. Crossword and Word Search Puzzles
 13. Videos: (A8) Computerized Engine Controls Diagnosis and Repair
 14. Animations: (A8) Computerized Engine Controls Diagnosis and Repair
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ACTIVITIES:

1. Task Sheet: MAP Sensor Visual Inspection
 2. Task Sheet: MAP Sensor DMM Testing
 3. Task Sheet: MAP Sensor Waveform Test
 4. Task Sheet: MAP Sensor Diagnosis
 5. Task Sheet: MAP Sensor Output Chart
 6. Task Sheet: MAF Sensor Visual Inspection
 7. Task Sheet: Air Vane Sensor DMM Testing
 8. Task Sheet: MAF Sensor Waveform Testing
 9. Task Sheet: MAF Sensor Diagnosis
 10. Task Sheet: MAF Sensor Scope
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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: