

Advanced Engine Performance Diagnosis 7th Edition

Chapter 29 – Symptoms-Based Diagnosis

Lesson Plan



CHAPTER SUMMARY:

1. Engine Hesitates, Sags, or Stumbles During Acceleration and Rough Idle or Stalling
2. Spark Knock (Ping or Detonation) and Engine Cranks Okay But Is Hard To Start
3. Engine Does Not Crank or Cranks Slowly, Dieseling or Run-On, and Backfire
4. Cuts Out or Misfires, Lack of Power, Surges, and Poor Fuel Economy
5. Rich Exhaust, Lean Exhaust, and Symptoms of a Defective Component
6. Excessive CO exhaust Emission, Excessive HC Exhaust Emissions, and Excessive NOx Exhaust Emissions

OBJECTIVES:



1. List the possible causes of an engine performance problem based on its symptoms.
2. List the methods of determining rich versus lean exhaust.
3. Describe what symptoms may occur if a particular engine part or sensor is defective.
4. List the possible causes of excessive HC, CO, and NOx exhaust emissions.

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



1. Task Sheet: No-Code Diagnosis of Driveability Concerns
2. Chapter PowerPoint
3. [Crossword and Word Search Puzzles \(A8\)](#)
4. [Videos: \(A8\) Engine Performance](#)
5. [Animations: \(A8\) Engine Performance](#)

ACTIVITIES:



1. Task Sheet: No-Code Diagnosis of Driveability Concerns

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](#).

NOTES AND EVALUATION

