



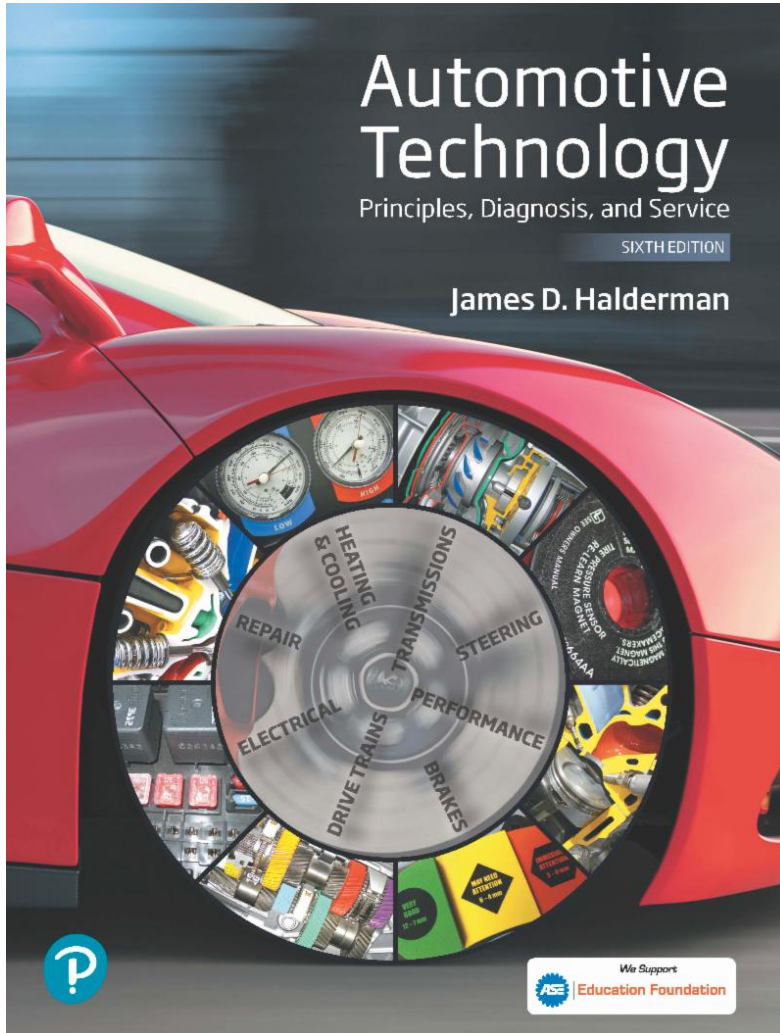
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Halderman newsletter

May 2019

What's new with Jim?



I am pleased to announce that the new edition of my big book, Automotive Technology-6th, is now out and available to be ordered for fall classes.

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Large book format 12" x 9.1" x 2.5"

8.5 pounds

Textbook ISBN: 9780135257272

Textbook with access card (Revel) ISBN: 9780135577769

eBook ISBN: 9780135257494

Task sheets (printed) ISBN: 9780135257630

NEW THIS EDITION-

Based on the suggestions and recommendations from automotive instructors and reviewers, the following changes

IN THIS ISSUE

[Auto Trivia](#)

[FAQ](#)

[Sample ASE](#)

[Tech Tip](#)

[Straight Talk](#)

Where's Jim?

May 2- Attending the advisory committee meeting for Greenville High School, in Greenville, Ohio

May 8- Presenting at the Auto Diesel Institute of Michigan, Owosso, MI

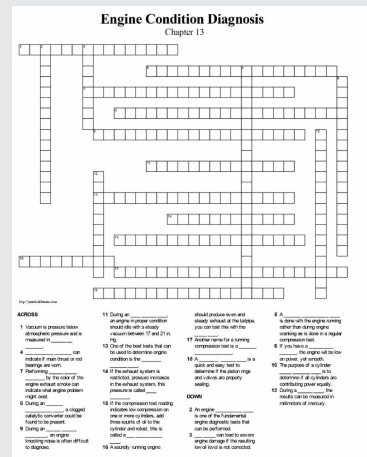
May 14- Attending the Mecum Auto Action in Indianapolis, IN

May 16-18- Attending the Ford Truck expo in Pigeon Forge, TN

Keep up with me at:
www.jameshalderman.com
 Email Jim
 Facebook

Puzzle of the month

Find this month's puzzle of the month at this [link](#) and test your students knowledge on engine condition diagnosis.



have been made to the sixth edition:

- Chapter 58 - Safety, Comfort, and Convenience Accessories
- Chapter 59 - Security and Immobilizer Systems
- Chapter 61 -Autonomous Vehicles- Operation and Service Procedures
- Chapter 64- Air Management System
- Two new chapters were added under the hybrid vehicle section titled Hybrid High-Voltage Batteries (Chapter 92) and Electric and Plug-in Hybrid Electric Vehicles (Chapter 93).
- The chapter on power steering was expanded and then split into two chapters: Hydraulic Power Steering Systems (Chapter 122) and Electric Power Steering Systems (Chapter 123).
- A new chapter titled Vibration and Noise Diagnosis and Correction (Chapter 132) was added in response to instructor requests.
- Over 200 new full-color photos and line drawings to make the subject come alive.
- Updated throughout and correlated to the latest ASE tasks.
- New Case Studies included in this edition covering the "three Cs" (Complaint, Cause, and Correction).
- New OSHA hazardous chemical labeling requirements added to Chapter 7.
- New content on three-legged and low-profile fuses, plus smart junction boxes, added to Chapter 44.
- The chapter on brake principles (Chapter 97) has been expanded to include the details on brake friction materials, which are now in one location, instead of being repeated in the drum and disc brake chapters.
- Qualifying brake lathe information added to chapter 108.
- Additional content on snap-in and clamp-on TPMS sensors, plus updated relearn procedures, in chapter 114.
- Additional content on various wheel-weight material, plus wheel-flange information, added to the totally updated Chapter 115.
- Many new review and chapter quiz questions align to the new and updated content in each chapter.

Resources sorted by content and chapter

Each chapter contains the following FREE resources**Accessing these resources**

1. Select a book
2. Locate the chapter that contains the topic you are teaching
3. Select the resources grouped in the **Blue Tabbed** sections

Note: "Automotive Technology" contains resources for all eight ASE content areas.

New Updated Website Coming Soon

Coming this summer, an entirely new and updated interface making it easier to find exactly what is needed all pre-sorted by chapter. Each chapter will include:

- Power Point
- Puzzles
- Task Sheets
- Audiobook (English and Spanish)
- Lesson plans
- Animations
- Videos

Auto Trivia



What was different about the interior on early (1964 ½) Ford Mustangs that were not the same as later (after August 1964)?

- a. Seat belts were not offered in the early cars but were standard in later versions
- b. The passenger seat was fixed and not moveable in early cars
- c. The shifter was on the floor for the three-speed transmission on early cars only
- d. Seat belts were all black regardless of color of the interior only on the early cars.

Answer at the bottom of this page!

FAQ

Does the Air-Fuel Ratio Have to Vary from Rich to Lean?

No. The catalytic converter is most efficient when the air-fuel mixture is at 14.7:1 (stoichiometric). However, when carburetors were used for fuel control, they were not capable of providing exactly 14.7:1 and did fluctuate rich and lean within about 5% of stoichiometric.

Older fuel-injection systems (multiport or gang-fired systems) were capable of providing an air-fuel mixture within about 2% of stoichiometric. Vehicles equipped with sequential port fuel injectors can be kept within 1% of 14.7:1, which greatly increases the efficiency of the catalytic converter.

Sample ASE certification-type question

Question:

A compression-sensing type of ignition system _____.

- a. Uses a waste-spark-type ignition system
- b. Does not use a camshaft position (CMP) sensor
- c. Uses a coil-on-plug type ignition system
- d. Both a and b

Answer/Explanation

The correct answer is d. Both answers a and b are correct. Answer a is correct because a compression-sensing type of system uses a waste-spark-type ignition system and compares when the one of the companion cylinders fires first which is the cylinder NOT on compression stroke. Answer b is correct because by using a compression-sensing circuit, the powertrain control module (PCM) can determine which cylinder is under compression and then using data from the crankshaft position (CKP) sensor determine the cylinder location thereby eliminating the need for a camshaft position sensor. Answer c is not correct because the compression-sensing circuit requires a waste-spark type ignition and not a coil-on-plug type system to work.

Tech Tip

MAF Sensor or Airflow Problem?

If a MAF sensor reading is lower than normal, such as at wide-open throttle, it could be an engine breathing problem or a defective/contaminated MAF sensor. To determine which the case is, check the following:

- If the fuel trim numbers follow the airflow, there is an airflow measurement error (MAF sensor related problem).
- If the fuel trim numbers are okay, the MAF is okay.
- If the BARO reading is lower than normal, there is an engine breathing issue, such as a restricted intake or exhaust.



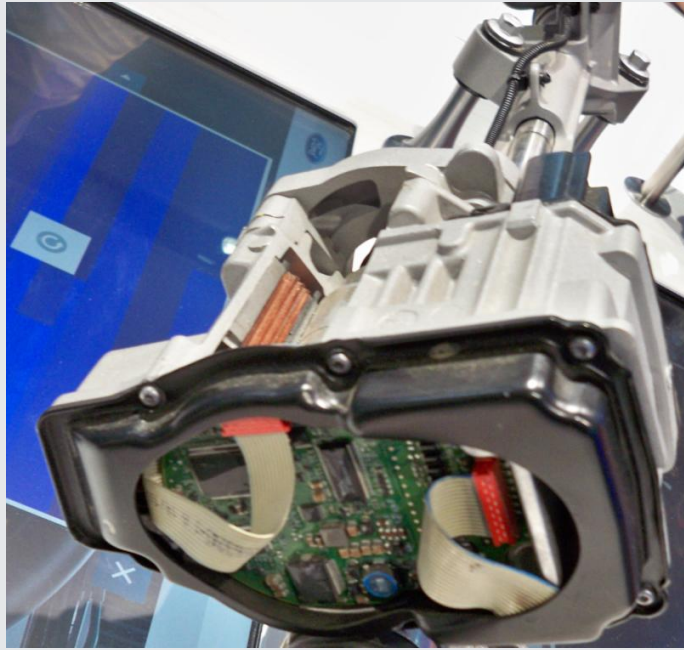
Straight Talk

Reader Asks About Lack of Power Steering

Wheels: Jeff asks:

"The power steering did not work the other day when I started my 2015 Chevrolet Colorado pickup truck. However, if I shut off the engine and then restated it, it appeared to be working. This has happened several times. Any ideas?"

Halderman: The Chevrolet Colorado pickup truck is equipped with an electric power steering (EPS) system and is not hydraulically operated as in many earlier pickup trucks. General Motors has issued a recall to correct the issue that can cause the loss of power steering assist. From the technical information, the cause appears to be related to a poor electrical connection within the steering gear connector that can cause a loss of power steering assist. You should contact your local Chevrolet dealer or you can visit <https://my.gm.com/recalls>. On this site, owners should enter their Vehicle Identification Number (VIN) to see any open recalls, as well as customer satisfaction programs.



Have an automotive question? Please write to Jim with your questions at jim@jameshalderman.com

Trivia question answer: B.

Please let me know what you think of the newsletter. I would love to include any of your automotive news, trivia questions or any tech tips you might have. Send me your suggestions!

You can email me [here](#) or visit [my website](#). You can connect with me on Facebook, Twitter and LinkedIn too (links above).

Regards,

Jim Halderman

James D. Halderman writes automotive technology textbooks for [Pearson Education](#). He is an ASE-certified Master Technician with more than 20 years instructional experience.