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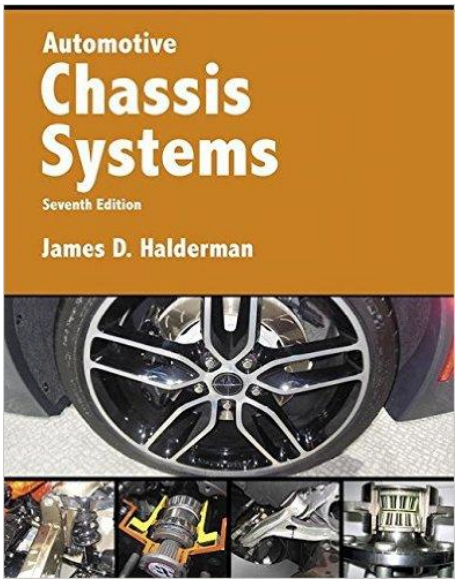
Halderman newsletter **May 2016**

What's new with Jim?



I am happy to announce that the latest edition (7th) of Automotive Chassis Systems (ISBN 0-13-406445-3) is now available to order for summer or fall classes. Here is what is new in the new edition:

- Over 50 new full color photos and line drawings have been added to help bring the subject to life.
- All of the content throughout has been updated to meet the latest NATEF and ASE standards.
- The chapter on brake principles (Chapter 4) has been expanded and now includes the details on brake friction materials which are now in one location instead of being repeated in the drum and disc brake chapters.
- Qualifying a brake lathe information added to Chapter 14.
- The chapter on regenerative brakes (Chapter 20) has been moved as suggested by automotive instructors.
- The chapter on power steering has been split into two separate chapters -Hydraulic Power Steering Systems (Chapter 30) and Electric Power Steering Systems (Chapter 31) making teaching and learning these topics easier.
- New Case study elements which include the "Three Cs" (Complaint, Cause and Correction) added to many chapters.
- New content on tire selection, chrome clad wheels and using a pin plate to balance wheels added in Chapter 23.
- Additional content on snap-in and clamp-on TPMS sensors plus updated relearn procedures in Chapter 4.
- Additional content on various wheel weight material plus wheel flange information added to the totally updated Chapter 23.
- New information a Hi Per strut included in Chapter 25.
- Many new review and chapter quiz questions where changed to match the new and updated content in each

IN THIS ISSUE

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WHERE'S JIM?
Shows Jim will be attending this month.

May 20- Mecum Auto Auction (just looking, not buying)

chapter.

Examples of what was changed and updated include:

1. The GM regular production code (RPO) information added to chapter 3 (Braking System Components and Performance Standards)
2. Ceramic brake pads and environmental concerns of copper in brake friction material added to Chapter 4 (Brake Principles and Friction Materials).
3. Case studies have been updated to include the "Three Cs" (complaint, cause and correction).
4. The BCM control of the red brake warning light (RBWL) has been added to Chapter 6.
5. Brake line corrosion reduction coating has been added to Chapter 7 (Brake Fluid and Lines).
6. New disc brake photo sequence added to Chapter 13 (Disc Brake Diagnosis and Service)

Please continue to follow me on LinkedIn, Facebook and Twitter for up-to-the-minute updates and for the fantastic interaction I receive from many of you.

Sincerely,
Jim

Auto Trivia

The Chevrolet Corvette ZR1 (1990-1995) had a unique engine that was produced by which company?
a. Boeing
b. Isuzu
c. Ferrari
d. Mercury Marine

Answer at the bottom of this page!

Sample ASE question

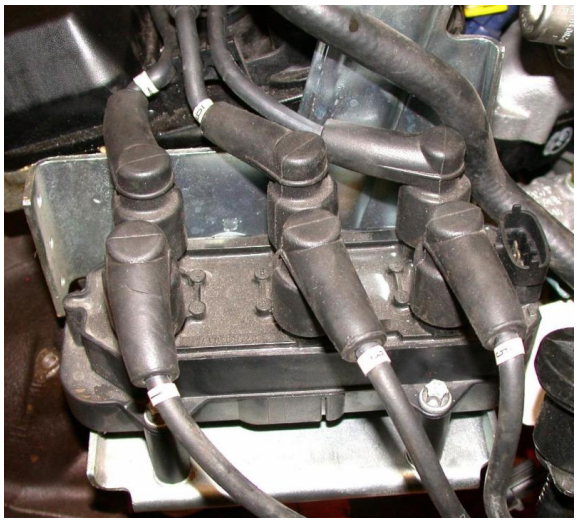
Question:
The owner of vehicle that is equipped with a supercharger complains that lately the engine is producing lower than normal power. Which is the most likely cause?
a. A stuck closed bypass valve
b. A clogged exhaust system
c. A plugged PCV valve
d. Low coolant level
Answer:
The correct answer is b. A clogged exhaust system is correct because if the exhaust system is restricted, the amount of airflow through the engine is reduced. When the amount of airflow through the engine is reduced, the amount of poster that the engine produces is reduced. Answer a is not correct because if the bypass were stuck closed then the supercharger would be able to supply full output to the engine. The only way the bypass valve could be the cause of a low power concern would be if it were stuck open (not closed). Answer c is not correct because while a plugged PCV valve could cause increased crankcase pressures, it would not cause a substantial reduction in engine output. Answer d is not correct because while a decrease in coolant level could cause the engine to run hotter than normal, it would not cause a substantial reduction in engine output.

Tech Tip

Odds fire straight

Waste-spark ignition systems fire two spark plugs at the same time. Most vehicle manufacturers use a waste-spark system that fires the odd-numbered cylinders (1, 3, and 5) by straight polarity (current flow from the top of the spark plug through the gap and to the ground electrode). The even-

numbered cylinders (2, 4, and 6) are fired reverse polarity, meaning that the spark jumps from the side electrode to the center electrode. Some vehicle manufacturers equip their vehicles with platinum plugs with the expansive platinum alloy only on one electrode as follows:
* On odd-numbered cylinders (1, 3, 5), the platinum is on the center electrode.
* On even-numbered cylinders (2, 4, 6), the platinum is on the ground electrode.
Replacement spark plugs use platinum on both electrodes (double platinum) and can, therefore, be placed in any cylinder location.



Straight Talk

From the April 30, Wheels section of Dayton Daily News

Reader asks about loose gas cap message

Wheels: A.F. writes by e-mail: "I have A 2009 Ford Crown Victoria and the check gas cap light on the dash came on. I stopped and checked the cap and it looked fine to me. I even added more gas. Still the check gas cap light remained on. This morning after sitting all night in the garage, I again took off the cap and retightened it, but when I started the car up it still said check gas cap. What is your thought and will this reset itself? Do I need a new gas cap? Why would this light come on when the gas cap is off as it does not come on when I fill up the car and have the gas cap off? Is there anything else besides a bad gas cap that could trigger this light? If I buy a new gas cap, do you think it will make it go off and how long might that take? The car has about 150,000 miles on it."

Halderman: The check gas cap message comes on if the system detects a leak in the fuel system. If the cap looks normal and seems to be okay, then try driving the vehicle for a week or so and see if the message goes away. It will not go away until the system does another self-test. The self-test has to be performed under very strict conditions, such as after 8 hours soak time with the temperature within a certain range and the fuel level between 15% and 85%. Therefore, if the fuel level is too high or too low, the self-test will not occur and the light will remain on. You can ask your technician to turn the warning light off using a scan tool but be prepared to pay for this service. If the light comes back, have a technician check the cap for leakage and if the cap is not leaking, this means that there is likely a leak in the evaporative emission control system. Testing this system usually requires that a special machine be used, so while a replacement gas cap will often take care of this concern, be prepared for further diagnostic charges and repair expense if the leak is not caused by the gas cap.

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

Trivia question answer: D.

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.