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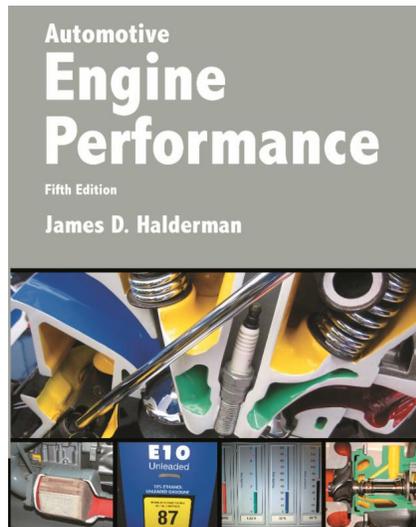
Halderman newsletter

November 2015

What's new with Jim?

I am pleased to announce that the latest (5th) edition of Automotive Engine Performance will be published soon and will be available in time for second semester classes. The updates to the Fifth Edition include:

- Many new full color line drawings and photos were added to this edition to help bring the subject to life.
- Updated throughout and correlated to the latest ASE/ NATEF tasks.
- New OSHA hazardous chemical labeling requirements added to Chapter 2.
- Atkinson Cycle engine design added to Chapter 3.
- Scope testing of MAF sensors added to Chapter 23.
- Additional content on gasoline direct injection (GDI) added to Chapter 28.
- Fiat Chrysler Multiair System information added to Chapter 30.
- Tier 3 Emission Standards added to Chapter 31.



Unlike other textbooks, this book is written so that the theory, construction, diagnosis, and service of a particular component or system is presented in one location. There is no need to search through the entire book for other references to the same topic. Testimonial:

Testimonial:

"As I said before, great textbook. My students are reading more than they ever had."

Joe

Southern Maine Community College

Warmest regards,

Please continue to follow me on [LinkedIn](#), [Facebook](#) and [Twitter](#) for up-

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Where's Jim?

www.jameshalderman.com
Email Jim
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SEMA

Nov. 2-6
Attending events

to-the-minute updates and for the fantastic interaction I receive from many of you.

Sincerely,
Jim

Auto Trivia

The Simpson gear train is _____.

- a. Two simple planetary gearsets with a common sun gear.
- b. A planetary gearset with two sets of planet gears and two sun gears.
- c. Three simple planetary gearsets with the ring gears of one set connected to the carrier of another.
- d. Three simple planetary gearsets with the ring gears connected to each other.

Answer posted at the bottom of this newsletter, and I will post this question on my [Facebook page](#) on Friday. And then will post the answer in comments shortly thereafter.

Sample ASE question

QUESTION:

A stall test is being performed and the scan tool showed 2,250 engine RPM. The specification for this vehicle is 1850 to 1950 RPM. What is the most likely cause?

- a. A weak or excessively worn engine
- b. A slipping forward clutch
- c. A defective torque converter clutch
- d. A defective or out-of-adjustment manual valve

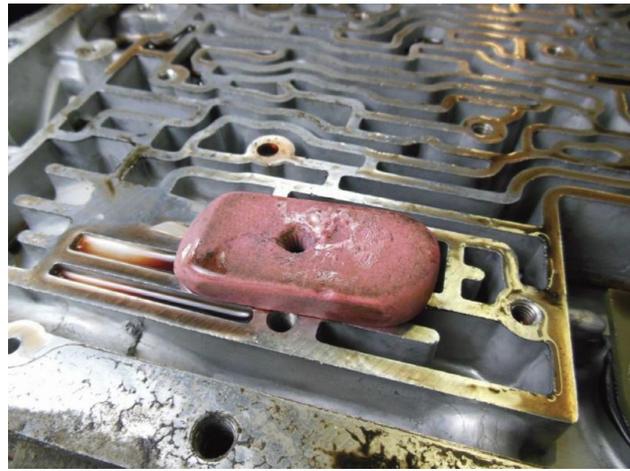
ANSWER:

The correct answer is b. The tachometer indicates that the stall speed is 2,250 RPM, which is higher than the stated specification of 1850 to 1950 RPM. This higher-than-normal stall speed could be caused by a slipping forward clutch because the drive wheels are not rotating (speedometer indicator zero), which means that something inside the transmission is slipping and the most likely part is the forward clutch because it is applied in all forward gears. Answer a is not correct because an excessively worn engine would not produce normal power, which would most likely cause the stall speed to be lower (not higher) than specifications. Answer c is not correct because the torque converter clutch is not applied at zero vehicle speed and would not affect the stall test results. Answer d is not correct because the transmission is in a drive gear and even if it were in second, this would not offset the stall speed.

Tech Tips

Air Testing Tricks

Some technicians use an air gun that is modified with a piece of rubber tubing for hard-to-reach locations. An eraser with a hole drilled through the center can be used to seal passages. This makes air testing at the valve body easy.



Straight Talk

From the October 31 Wheels section of Dayton Daily News

Reader asks about continuously variable transmission

Wheels: An e-mail from Romey asks: "What are your thoughts on continuously variable transmissions (CVT)? I saw an article that had a listing of the "8 Low Cost Vehicles for 2015." Some of them listed were equipped with a CVT transmission. What are your thoughts on CVT transmissions relative to initial cost, fuel economy, durability (will they last 200,000 miles), distinct advantages to the CVT, and are there different types? Do you think this is the wave of the future?"

Halderman: Thanks for writing with a good question. Without a doubt, a CVT transmission offers better fuel economy than a conventional automatic transmission and this is one of the reasons that it is being used by more vehicle manufacturers. It has some advantages and disadvantages just as any transmission design.



Advantages:

1. Very smooth without any jerking because it doesn't actually shift gears like a conventional automatic transmission.
2. Allows the vehicle to achieve fuel economy close to that of a manual transmission.

Disadvantages:

1. Unknown long term durability. The Ford 500 did offer a CVT, but it was dropped and replaced with a six-speed automatic. I read that the warranty cost was about double that of the six speed.
 2. Cannot be repaired and instead is now a replacement only assembly, which could be costly.
- What do I think about a CVT? I do like the smoothness. I do not like the high engine speed when climbing hills. I prefer a conventional automatic transmission, especially if it is a six or more speed automatic.

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

Trivia question answer: A.

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.