

SHARE:

[Join Our Email List](#)

HALDERMAN

WWW.JAMESHALDERMAN.COM

Awesome Resources = Student Success!

Connect with me

[View as Webpage](#)

Visit Our Website

Author & Automotive Expert James D. Halderman

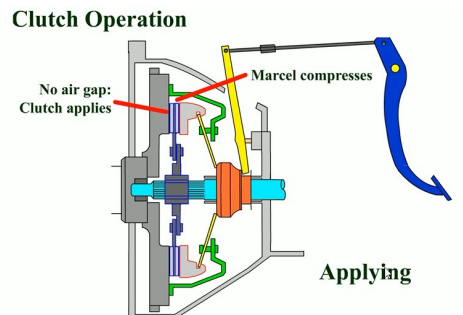
What's new with Jim?

HALDERMAN

WWW.JAMESHALDERMAN.COM

Awesome Resources = Student Success!

My team, all working from their home now, are busy as ever creating more and exciting resources. For example, additional animations are being created almost every week and are being saved to my website according to the chapter where they best can be used. They are also in movie format (MP4) making it easy to save and incorporate into presentations.



Interesting Story: A instructor wrote and thanked for the clutch animations. He said he tried to explain how a clutch worked, but no one in the class understood it even when he showed the parts involved. He pulled up the animation and almost immediately, everyone in the class understood how a clutch works.

Where's Jim?

Due to the Coronavirus, all events have been canceled and I have no travel plans planned for the rest of the year.

Keep up with me at:

www.jameshalderman.com

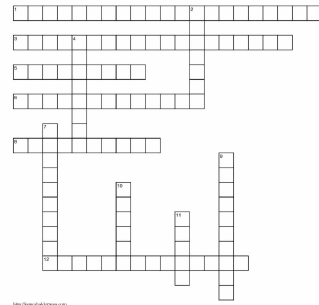
[Email Jim](#)

[Facebook](#)

Puzzle of the month

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

Torque Converters
Chapter 5



ACROSS

- 1 The _____ is applied to eliminate the slippage during the coupling phase, which improves fuel economy.
- 3 _____ are small speed increases and slowdowns as the crankshaft revolves between engine cylinder firing pulses.
- 5 The torque converter is bolted to a thin metal disc called a _____.
- 6 The _____ occurs when the speeds of the impeller and turbine are nearly equal.
- 8 The clockwise flow of fluid leaving the impeller, in the direction of engine rotation, is called _____.

DOWN

- 2 The _____ is the converter's output member.
- 4 The _____ is the driving member and rotates with the engine, and is located on the transmission side of the converter.
- 7 _____ is the fastest RPM that an engine can reach while the turbine is held stationary.
- 9 The _____ is a continuous circulation of fluid outward from the impeller, around the guide ring, inward into the turbine, through the stator, and back into the impeller.
- 10 The _____ is the reaction member of the torque converter.

Auto Trivia

- The front shown is a _____
- a. 1953 Chevrolet Corvette
 - b. 1955 Porsche 356
 - c. 1958 Ferrari
 - d. 1960 Karman Ghia



**Answer at the bottom*

FAQ

What Is Wrong When the ATF Looks Like a Strawberry Milkshake?

If water or coolant gets into the automatic transmission fluid, it makes the ATF look like a strawberry milkshake. Common reasons for this condition include:

- A leak in the AFT cooler inside the radiator.
- Water getting into the

transmission/transaxle through the vent at the top of unit. This could be caused by driving through high water or due to a flood where the vehicle is under water or partially under water.

The transmission/transaxle will require a complete overhaul because the clutch and band friction material is held to the steel backing using water-soluble glue. The water that is mixed with the ATF will loosen this glue and cause the friction material to become detached from the steel backing, making the transmission unable to transmit engine torque.



Sample ASE certification-type question

A transmission fluid temperature (TFT) sensor wire was broken during an accident. Which is the most likely result?

- a. The transmission/transaxle will start in second gear and shift normally after that
- b. The overdrive and the torque converter clutch may be inoperative

- c. No symptoms or change in shifting will be noticed
- d. The transmission/transaxle will not engage in drive or reverse

Answer/Explanation

The correct answer is b. An open transmission fluid temperature (TFT) sensor wire would be interpreted by the computer as very cold fluid temperature. The computer often delays the operation of overdrive and the torque converter clutch until the transmission fluid reaches a certain pre-determined value. This is an attempt to get the fluid up to normal operating temperature as soon as possible. Answer a is not correct because the fluid temperature sensor fault is not major enough to cause the computer to command a default gear selection, such as second gear only. Answer c is not correct because no symptoms may be noticed by the average driver. The computer will usually attempt to raise the very low fluid temperature by delaying the application of the torque converter clutch and overdrive in many cases. Answer d is not correct because the transmission systems are still intact enough to allow almost normal operation of the automatic transmission.

Tech Tip

Converter Drain-Back Test

If the fluid leaves the torque converter when the engine is off, the vehicle will not move. When the engine is restarted until the torque converter is refilled by the pump, there will be a delay. If the torque converter drain back is suspected, operate the vehicle until it is at normal operating temperature. Drive the vehicle through several full-shift cycles. Check and adjust the fluid level if it is low, and shut off the engine. Allow the vehicle to sit for 30 to 60 minutes, and recheck the fluid level marking it on the dipstick. Allow the vehicle to sit for 24 hours and recheck the fluid level. If the level has risen by 1 inch (25 mm) or more, converter drain back has occurred. This means that the sealing rings around the torque converter are not able to seal properly and means that the transmission or transaxle has to be removed to correct this condition.

Case Study

The Case of the Delayed Shift Subaru

The owner of a Subaru Legacy complained that the CVT (TR580) transmission was slow to engage from park to reverse and from drive to reverse. The technician assigned to the vehicle was able to verify that it required as long as four seconds to shift from drive to reverse or from neutral to reverse. After performing a thorough visual inspection, including a fluid level check, and not finding any issues, a scan tool was used to see if there were any transmission related diagnostic trouble codes. There were none so the technician checked for any technical service bulletins (TSBs) and found one (#16-97-15) that did address the customer complaint. In the TSB, there was a procedure to follow to relearn the TCM, which stated that this should be performed if there is a lag time greater than 1.5 seconds. The technician performed the relearn control procedure that included the following steps:



- Shift into “N” for 5 seconds, shift into “R” for 3 seconds, and shift back into “N”. Repeat 10 times.
 - Stay in “N” for 5 seconds, shift into “D” for 3 seconds, and shift back into “N”. Repeat 10 times.
- After 10 times, perform the “time lag test” again to confirm if this procedure corrected the customer complaint.
- The technician was pleased that the relearn procedure did result in a delay time of less than a second. The customer was very pleased because it did not require an expensive repair.

Summary:

- **Complaint**—Customer complained of excessive time into a drive gear.
- **Cause**—The transmission needed to be relearned.
- **Correction**—The relearn procedure as found in a TSB was used to relearn the shifting of the CVT

Straight Talk

Reader Has Question About Starting An Old Generator

*From the January 30 Wheels Section of the
Dayton Daily News*

Wheels:

RS writes by email:

“I have a generator purchased March 20, 2005, which has been sitting in my garage, but never used once. My question is should the engine oil be replaced before starting it up? Enjoy Straight Talk.”

Halderman

Thanks for writing. Good question. I think I would change the oil as it has been sitting and the oil has been absorbing moisture from the air for 15 years. For about a quart of oil and a little time, it would be a good investment. Be sure to use the specified viscosity, such as SAE 30 and if so, do not substitute SAE 10W-30. Also, be sure to use fresh gasoline and treat the fuel with a stabilizer so it will remain fresh longer. The shelf life of gasoline is only about 90 days so I suggest using what gas you have in a gas can and pour it into your vehicle and then purchase fresh gas for the generator regularly.



Have an automotive question? Get a straight answer by writing to Jim at jim@jameshalderman.com



**Answer To This Month's Trivia:
B. 1955 Porsche 356**

Contact Us

