The 2010 ATRA Expo is right around the corner. Each year I look forward to Expo, not only for the learning experience, but to catch up with friends and meet new people in our industry. And this year’s Expo will be our first time in San Antonio, Texas. I can’t wait!

Each year I try to focus on the Chrysler/Dodge line of automatic transmissions and transaxles. Over the years we’ve discussed diagnostic routines and build information, as well as updated parts for the RE (42, 44, 46, 47, and 48RE) family of transmissions, the TE/AE/LE/RLE family of transmissions (40, 41, 42, and 62 series), the full RFE (45, 5-45, and 68RFE), and the AS68RC lineup.

This year we’ll continue our Chrysler/Dodge theme by focusing on the Continuously Variable Transaxle (CVT): how it works, as well as diagnostic and rebuild procedures when dealing with this high dollar unit.

The concept of replacing an automatic transmission with a CVT began near the end of the 20th century, only to be sent back to the drawing board because they just wouldn’t hold up to...
the demands of everyday driving.

Technology and materials have changed and the durability problem has been overcome, even when coupled with today’s high-torque engines. There are many auto manufacturers starting to use CVTs, and they’re proving to be both reliable and durable under normal driving conditions.

That durability has its limits: towing creates more failures than normal, and high horsepower applications (pushing the driving limits) have a tendency to burn off the belts.

Chrysler/Dodge introduced their CVT in the Dodge Caliber, Jeep Compos, and Jeep Patriot, both FWD and AWD vehicles, with the 2.0L and 2.4L engines.

The CVT unit selects the best drive ratio based on torque demand and driving style. This happens by varying the size of two pulleys that push a steel belt to achieve the best overall driving ratio. This includes an extremely low ratio for acceleration, and a super high overdrive ratio for fuel economy. Compared to a unit with stepped gear ratios, such as a normal shifting transmission, the CVT typically gets about a 12% increase in fuel economy. Consumers have recognized the value of this and are generally sold on this economy.

There are many vehicles with these CVTs on the road today, and they’re already beginning to show up in shops across the country. So it’s important to understand how these units work.

We’ll be covering how the CVT systems function, and learning important techniques for repairing this unit. It should prove to be an exciting learning experience as we go through the mechanical, electrical, and hydraulic operating principles that allow these transmissions to work.

I look forward to seeing all of you at Expo 2010 this year. Until next time, keep those transmissions in good shifting health!

The Doctor 🧪