CHAPTER 11

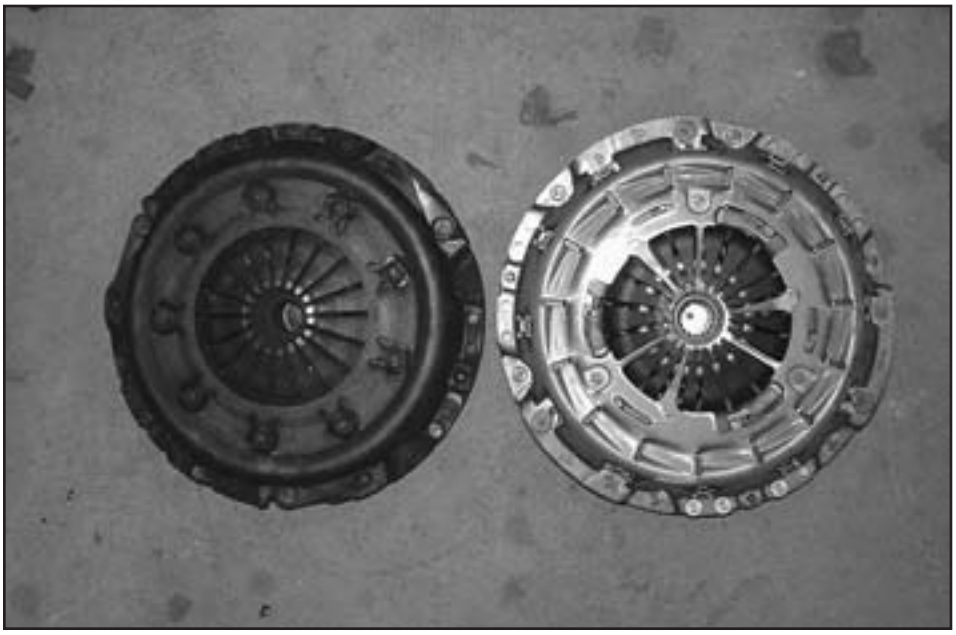
TRANSAXLE TECH

by Mike Ancas and Michael Carpenter

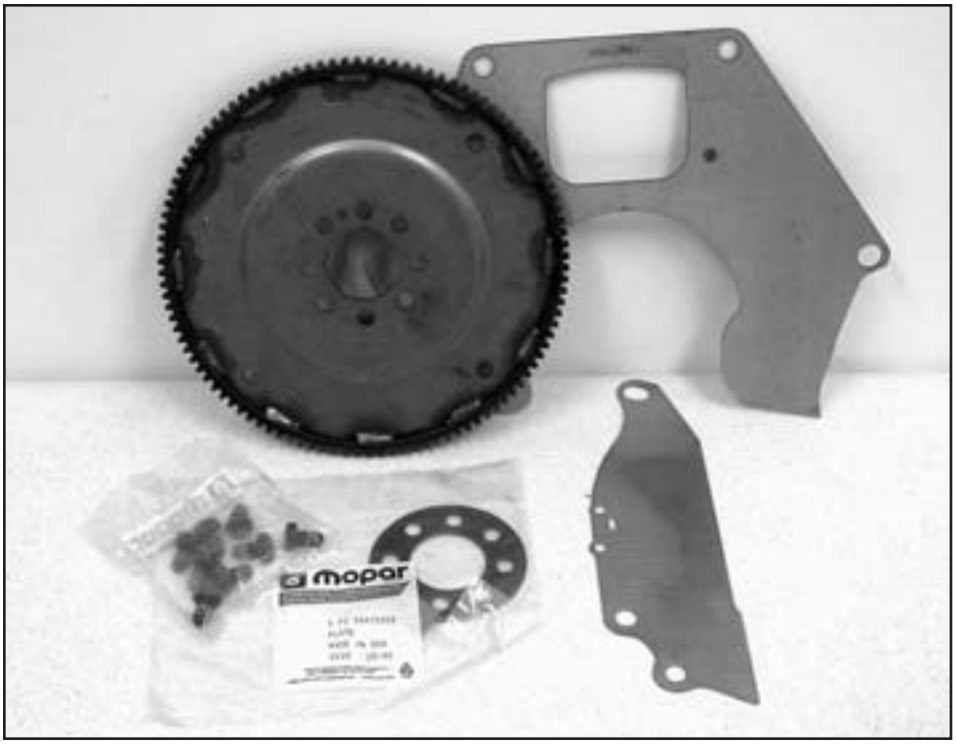
Neon Transmissions

In general, Neon transaxles are very strong, lightweight, and reliable. Designed and built by New Venture Gear for Chrysler, the transmission is a split-case design that weighs in at only 80 pounds. Even drag racers with turbocharged engines cranking out well over 400 horsepower rarely develop problems. The same goes for road racing and autocrossing. Axles will snap, clutches will break, but the trannies have a reputation of holding together under extreme conditions.

Neon transmissions are strong units that can handle a turbo upgrade with no problem. However, you may want to consider installing a limited-slip differential if you plan to do some racing.



There are several choices you can make regarding clutches. The stock Neon clutch (left) is still okay even after 100,000 miles. Since it was already out, we replaced it with a PT Cruiser clutch that has easier pedal effort and more holding power. The PT clutch is also a cheaper option than an aftermarket clutch.



Mopar Performance Parts offers a kit to help you install a modular clutch assembly in place of your traditional clutch and flywheel assembly. Once you install a modular clutch with this kit, installing another modular clutch is as simple as swapping it in.

The only real weak link is the differential, which does not like excessive wheel spin. But we should take a closer look at the different gear ratios and final drives to see just which tranny may be best for your project.

I've got nothing against Chrysler automatic trannies. Unless you're content to keep your Neon on the street, a car with an auto tranny is not the best car to start with. We've seen people spend literally thousands of dollars on all the bolt-on modifications, only to run about the same times at the strip that they would have with a manual transmission in a stock car. Of course, you can swap out your auto for a stick, but why bother? Neons are cheap, and the ones with automatic transmission are worth more on the used-car market. The real exception to this is if you are serious about turbocharging your car. The automatic works great for drag racing a high-torque car, as traction is easier to manage, and the auto helps keep the car in boost.

It may seem that there were a lot of different 5-speed configurations from 1995 to 1999, but in reality, there were only a few. Actually, from 1995 through 2000, all manual trannies had the same gear ratios from first through fourth gear. From mid 2000 on, first and second gear changed slightly. First went from 3.54:1 to 3.50:1, and second went from 2.13:1 to 1.95:1. The earlier cars had slightly lower gears, which means they got off the line with a little more gusto.

The first-generation cars basically had two different trannies. The base SOHC cars had a lower final drive (3.55:1) than all of the other cars. The lower final drive acts like a multiplying factor, and in this case makes it harder for a car to get off the line. Using this transmission is like pedaling your bike up a steep hill in fifth gear instead of first. But if you think about it, the base cars are light and the SOHC motor has great low-end torque, so when actually driving the car, you really couldn't tell much.

All DOHC cars had a higher final drive of 3.94:1, which compensates for the small amount of low-end torque they give up to the SOHC cars. If you want to take full advantage of the low-end torque produced by a Neon powerplant, then the SOHC ACR is your best choice. They have the 3.94:1 final drive mated to their SOHC engines. For many local autocross courses that have a lot of turns and fewer straightaways, the SOHC ACR is your best choice. Even in road