

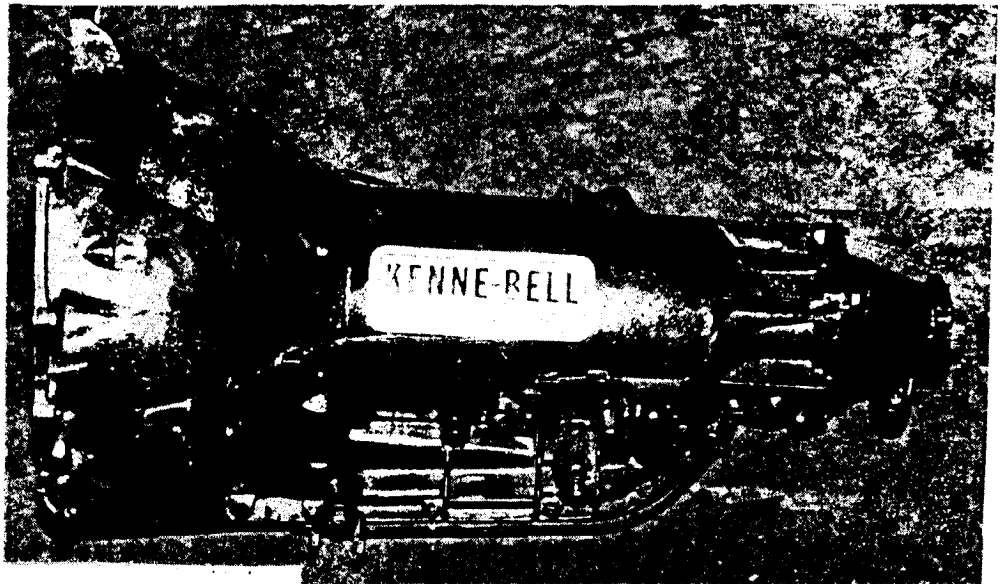
# dual-purpose torque converters

GM Turbo 400 owners can now have the advantages of a high-stall converter without suffering the consequences.

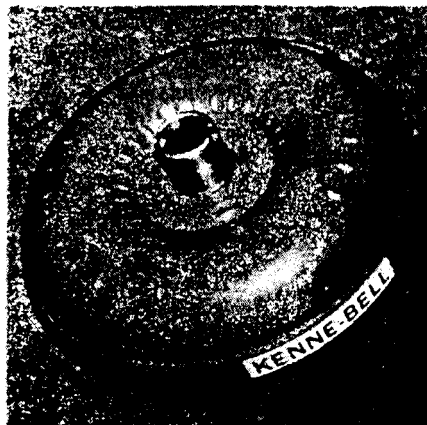
By Leonard Emanuelson

Building a dual-purpose street/strip machine amounts to a bunch of trade-offs. You can't have too much carburetion or the car will have a giant flat spot. You can't use a real radical camshaft because it just won't live. These trade-offs continue right on down to the rear-end gear ratio, which can't be the optimum because the car just wouldn't be practical on the street.

That brings us to the subject of torque converters. Ideally, you should use the highest stall-speed torque converter



*It's almost too good to be true, but there is a torque converter that actually has two different stall speeds—it is called the variable-pitch torque converter and was used by GM on their 400 Turbo Hydra-matic transmissions from '65-'67 for Buicks, Oldsmobiles and Cadillacs. Now this same system is available from Kenne-Bell Performance Products,*



available for the best quarter-mile performance. The higher the stall speed, the more radical you can go on the engine components. For street use you want just the opposite, the lowest stall speed converter available for the utmost efficiency and lowest heat build-up. Here we are again at opposite ends of the world trying to find the fine line that is the ideal compromise.

We aren't going to try to fool you by telling you there is an ideal compromise, because, a compromise is just that, a compromise. However, there is a torque converter for the GM 400 Turbo Hydra-matic transmission that gives some latitude in each direction and fits the bill for the average hot street machine or street rod that occasionally sees the bracket races. It is a variable stall speed converter that has a very low stall speed of 1800 rpm or, with the flip of the switch, a 2600 rpm stall speed. This is really a near-ideal situation, since an engine with a big cam can idle freely at, let's say, 1200 rpm without giving the

car a tendency to creep forward. Then after the car has moved away from a stop, it can be switched to the low stall speed and reap the benefits of reduced converter slippage.

Without getting into the theory of how a torque converter works, we will attempt to explain how a variable-pitch converter differs from a fixed stall speed converter. Inside a torque converter there are blades and vanes that determine the amount of stall speed by the angle at which they have been preset. The variable-pitch converter, as the name implies, can vary the angle of these vanes and blades by a hydraulically operated piston system for two different stall speeds. Kenne-Bell Performance Products has capitalized on the fact that GM phased out the variable-pitch converter in 1968 and

now offers both the converter and parts needed to convert any 400 Turbo for use with the variable-pitch converter.

Jim Bell of Kenne-Bell has taken the variable-pitch converter a few steps farther. Actually there are two "VP" converters, a 13-inch-diameter model that was standard equipment in the heavy cars and a smaller 11-inch model that was standard equipment behind the smaller V 8 and V 6 engines. In stock form the 13-inch converter has a high stall speed of 2400 rpm and a low stall speed of 1800 rpm. The 11-inch unit has a high stall speed of 2800 rpm and the same low stall of 1800 rpm. The Kenne-Bell - VP" converter is available in three different versions. They have increased the stall speed by machining the stator piston (check photo) so the blades close farther, giving a higher stall speed. The modified 13-inch

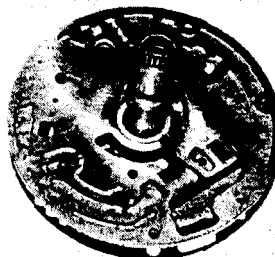
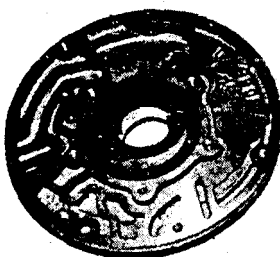


The variable-pitch torque converter is available from Kenne-Bell in two different diameters (13- or 11-inch) and with three different stall speeds.

converter has a high stall of 2600 rpm and the 11-inch now stalls at 3400 rpm.

The third "VP" converter from Kenne-Bell is a 13-inch unit modified for RV vehicles or anyone desiring improved gas mileage. With this particular converter the switch that changes the blade angle is usually wired into the brake light switch, so whenever the brake pedal is depressed the converter goes into the high stall position, permitting the engine to idle freely.

For the real hot street/strip machine, the Kenne-Bell modified 11-inch "VP" converter is the hot setup. It is the same converter that has been used on all the Jones & Benisck record-holding Buicks and one of Kenne-Bell's company Stage 11 1970 Buicks that ran 10.40s, 126 mph weighing in at 3600 pounds. Yet the converter will act just like a stocker on the street. Jim took us for a ride in a "VP"-equipped Buick and explained the optimum driving technique. His cars are usually set up with the stall speed changeover switch mounted on the gear shift lever. For takeoff, the



To convert any GM 400 Turbo Hydramatic transmission for use with the variable-pitch torque converter you will need this pump assembly and drilled shaft along with this special solenoid. Kenne-Bell provides complete instructions and also offers complete transmissions already converted for the "VP" and modified for high-performance use.

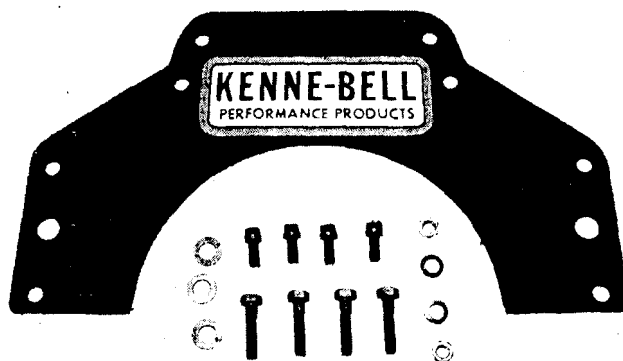
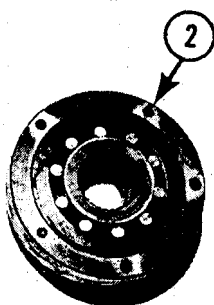
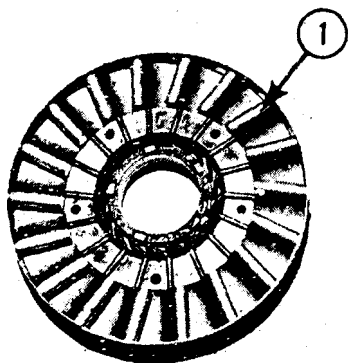
converter is switched to high stall. As soon as the car has launched and engine rpm is up around 4500 rpm (almost instantly), then the converter is switched to the low stall position. It really works great and is worth anywhere from a half-to a full second off the ET over a stock torque converter!

Along with the variable-pitch torque converter and conversion kit for all 400 Turbos, Kenne-Bell offers complete transmissions already converted and modified for high-performance use. Due to the popularity of Chevy Turbo 400s, Kenne-Bell also offers an adapter kit that links any GM Turbo to a Chevy

engine with no hassle.

Take it from us, this is one of the few changes available to help make your hot street machine easier to live with on a day-to-day basis.

With the popularity of the Chevy Turbo 400 transmissions making these units scarce in the junkyards, Kenne-Bell offers this low-cost adapter that will mate any 400 Turbo trans to a Chevy engine.



Here is the variable-pitch stator assembly partially disassembled. The stator blades (arrow 1) can rotate when acted upon by the stator piston (arrow 2). The blades are now in the closed (high stall speed) position. When the blades rotate open the stall speed goes to the low 1800 rpm condition.