



# A New Wonder From Warner

By Mike Weinberg  
Contributing Editor

There is no doubt about it, performance is back in today's cars and trucks. The "experts" who predicted the decline of the V-8 motor and performance cars are eating their words. The fierce competition for market share among manufacturers has put the P-for-Power back in performance. Car and truck buyers can choose from 4, 6, 8, 10 and 12 cylinder power plants. Current models are using turbo-charging, super-charging, a variety of fuel-injection systems, computer controls and electronically shifted automatic transmissions to make power, while attaining fuel economy and emissions goals. There are any number of new stock models that you can buy right off the showroom floor that are faster, stop and handle better than purpose-built race cars I drove 25 years ago.

To handle some of this new-found torque and horsepower, the

wizards at Borg-Warner Automotive have given us a wonderful new gear box – the T56. Big brother to the T5, this unit sports 6 speeds, two of which are over-driven. The T56 is found in regular production '94 Camaro and Firebird models, and in Chrysler's newest muscle car, the Viper. The T56 weighs 125 pounds dry and uses aluminum cases. Ratios for the Viper and F-body GM cars are as follows:

- 2.66-1 first gear
- 1.78-1 second gear
- 1.30-1 third gear
- 1.00-1 fourth gear
- 0.74-1 fifth gear
- 0.50-1 sixth gear
- 2.90-1 reverse gear

Reverse is fully synchronized and of constant-mesh design for quiet operation. As you can see, the steps in the ratio are close and provide for smooth gear-to-gear transitions. With these ratios, the T56 is rated at a strong 450 ft/lbs of torque, making it capable of handling really stout engines.

Looking like a T5 on steroids, the T56 shares many of the inno-

vative designs of its little brother. The main and counter shafts are supported by tapered roller bearings. All speed gears ride on needle bearings. Synchronizers use Warner's double-cone design with organic friction material as linings. Both 5th and 6th gears ride on the counter shaft. The T56 uses a single rail-shift system that is durable, smooth shifting and easy to work on. Warner designed the T56 with two integral shifter positions to make it easily adaptable to other vehicle applications. The centerline distance between shafts is 85mm, which makes room for some beefy gears.

There are some interesting electronics attached to the T56. The speedometer drive is an electronic speed sensor, and backup lights are operated conventionally with a switch on the reverse shift-rail linkage. There are two electronic solenoids to be found on the T56. One is the reverse lockout solenoid, which is powered when the vehicle is traveling under 5 mph, and decreases the reverse-shift restraint for smoother shift-

## JEEP TRANSFER CASES

All Jeep Transfer Cases are Remanufactured with the Latest O.E. Components

\*Includes New Morse Chain

WRANGLER - YJ, TJ, NV231J, NV241J

CHEROKEE - XJ, NV231J, NV242J, NV249J

LIBERTY - KJ, NV231J, NV242J

GRAND CHEROKEE - ZJ, WJ, WK, NV140J, NV147J, NV231J, NV242J, NV245J, NV247J, NV249J

CHEROKEE/WAGONEER/J10 - NP208J, NP219J, NP228J, NP229J

Rockland Standard Gear can custom fit all of these transfer cases to any TJ, YJ, ZJ, WJ, XJ & KJ model

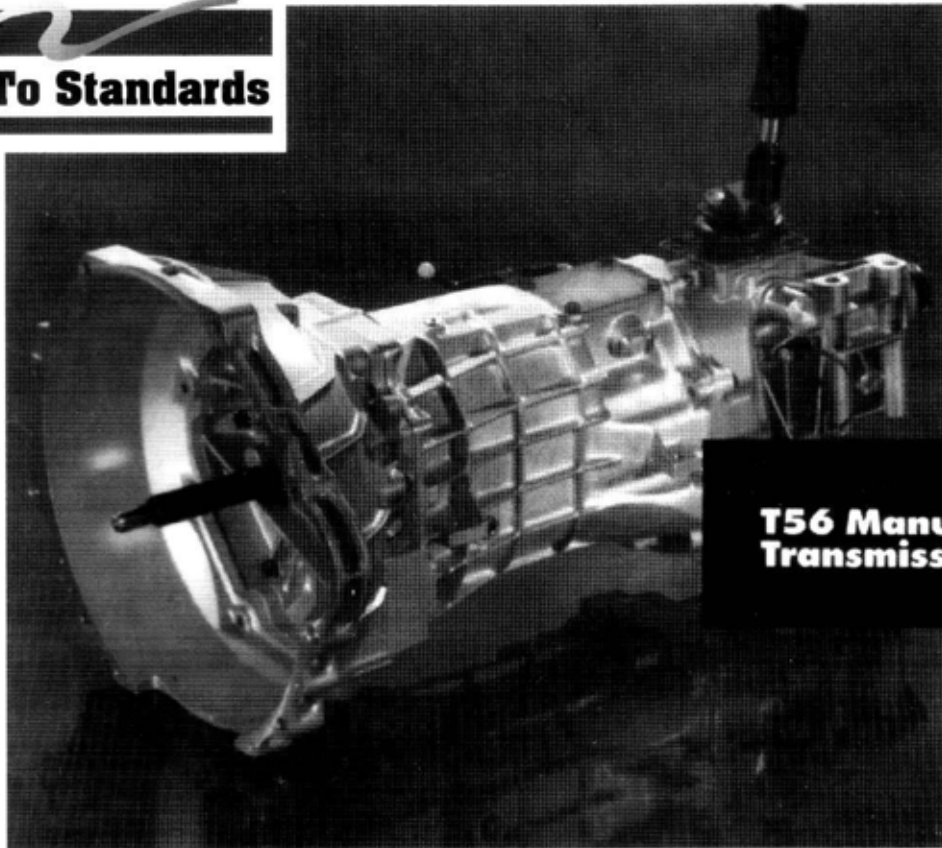
231J Command Trac  
w/ Slip-Yoke Eliminator



247J & 249J AWD  
Non-viscous - more MPG, less wear  
Perfect for warmer climates  
Retains safety of AWD



## Up To Standards



**T56 Manual Transmission**

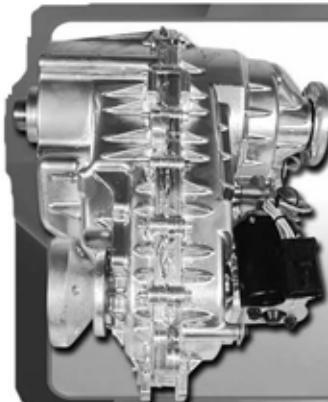
ing. If the power is interrupted to this solenoid, reverse still can be obtained but with more substantial effort on the shifter.

The other solenoid operates a "skip shift" function. Until recently, the only way to control shifting in relation to throttle opening and torque demand was with an automatic transmission. Models equipped with manual gear boxes left shift points and throttle opening to driver discretion, and created problems for car makers

meeting the Clean Air standard and the CAFE (Corporate Average Fuel Economy) rules. The skip-shift feature on the T56 enables the vehicle's ECU to measure throttle opening, torque demand and rate of acceleration and, under the right conditions, power up the solenoid to force a shift from 1st directly to 4th gear. If the skip shift activates, the driver can shift from 4th to a lower gear if necessary.

The guys at Borg-Warner didn't forget about us when they brought the T56 to market. There also is an aftermarket version of the T56 that can be used to replace the T5 in older pony cars. The aftermarket unit ratios are:

- 2.97-1 first gear
- 2.07-1 second gear
- 1.43-1 third gear
- 1.00-1 fourth gear
- 0.80-1 fifth gear
- 0.62-1 sixth gear
- 3.28-1 reverse gear



### FORD Transfer Cases

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- EXPLORER, MOUNTAINEER - BW4404F, BW4405F, BW4410F, BW4411F
- EXPEDITION, NAVIGATOR - BW4406F, BW4416F
- AVIATOR - BW4410F, BW4411F
- BRONCO - NP208F, BW1356F, RANGER-BW1350F, BW1354F, BW4405F
- BRONCO II - BW1350F, BW1354F
- AEROSTAR - RA28F
- PICKUP - NP208F, BW1345F, BW1356F, BW4406F, BW4407F, BW4416F, NV271F, NV273F
- EXCURSION - NV271F, NV273F



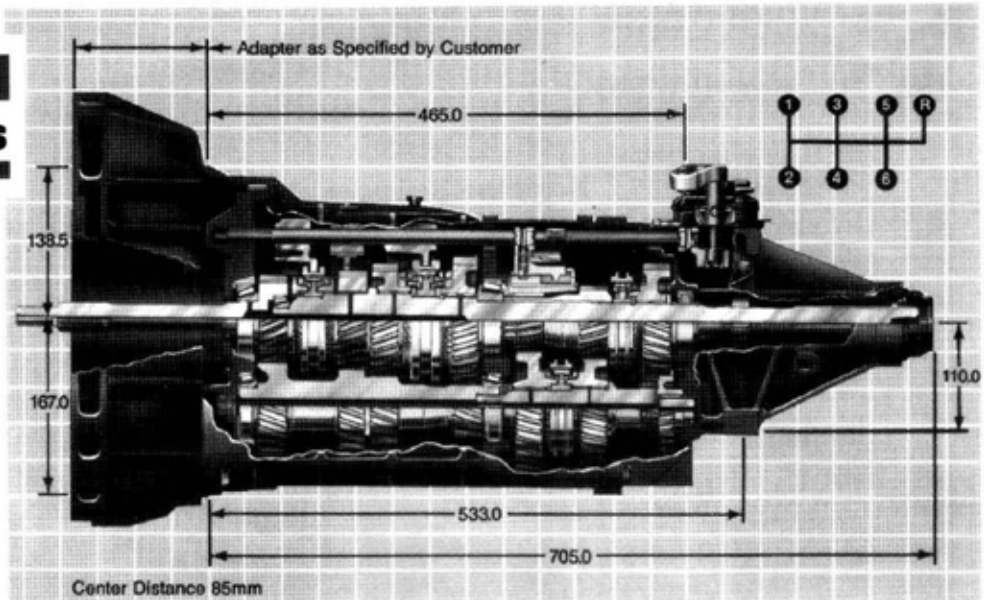
### Dodge Transfer Cases

**All Dodge Transfer Cases are Remanufactured with O.E. Components**  
\*Includes New Morse Chain  
• Durango RT - Converts Full Time AWD to Select Trac or Command Trac

- DURANGO - NV133D, NV144D, NV231D, NV233D, NV242D, NV244D
- DAKOTA - NV231D, NV233D, NV242D, NV244D
- RAM PICKUP - NV241DL, NV241DH, NV271D, NV273D
- RAM QUAD CAB - NV231DHD, NV241DL, NV243D, NV244D
- RAMCHARGER - NP208D, NV241D

## Up To Standards

These ratios match up with the T5 ratios in the earlier Camaro, Firebird and Mustang models. Both models of the T56 have a detachable bellhousing, and Borg-Warner provides an adapter ring to make this unit a direct bolt-up to an earlier model T5 bellhousing. Some minor modifications to the driveshaft, cross member and shifter may be necessary. The aftermarket version has an extension housing machined to accept a gear-driven speedo. The racers and hotrod guys already are using the T56, and Advance Adapters of Paso Robles, CA is hard at work developing adapter kits to enable this bad boy to be transplanted



where T10s, Saginaws, Muncies and Ford Top Loaders used to be. This is better than sliced bread.

Well, Borg-Warner did its part, and now we can only hope that the Big Three will wake up and smell the coffee and put the T56 where it really would fulfill its po-

tential – in trucks. The T56 has the right torque rating, good ratios, would make trucks more fuel efficient and would require minimal chassis changes. Maybe GM is tired of its generally disastrous fling with the German-designed HM290...■

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