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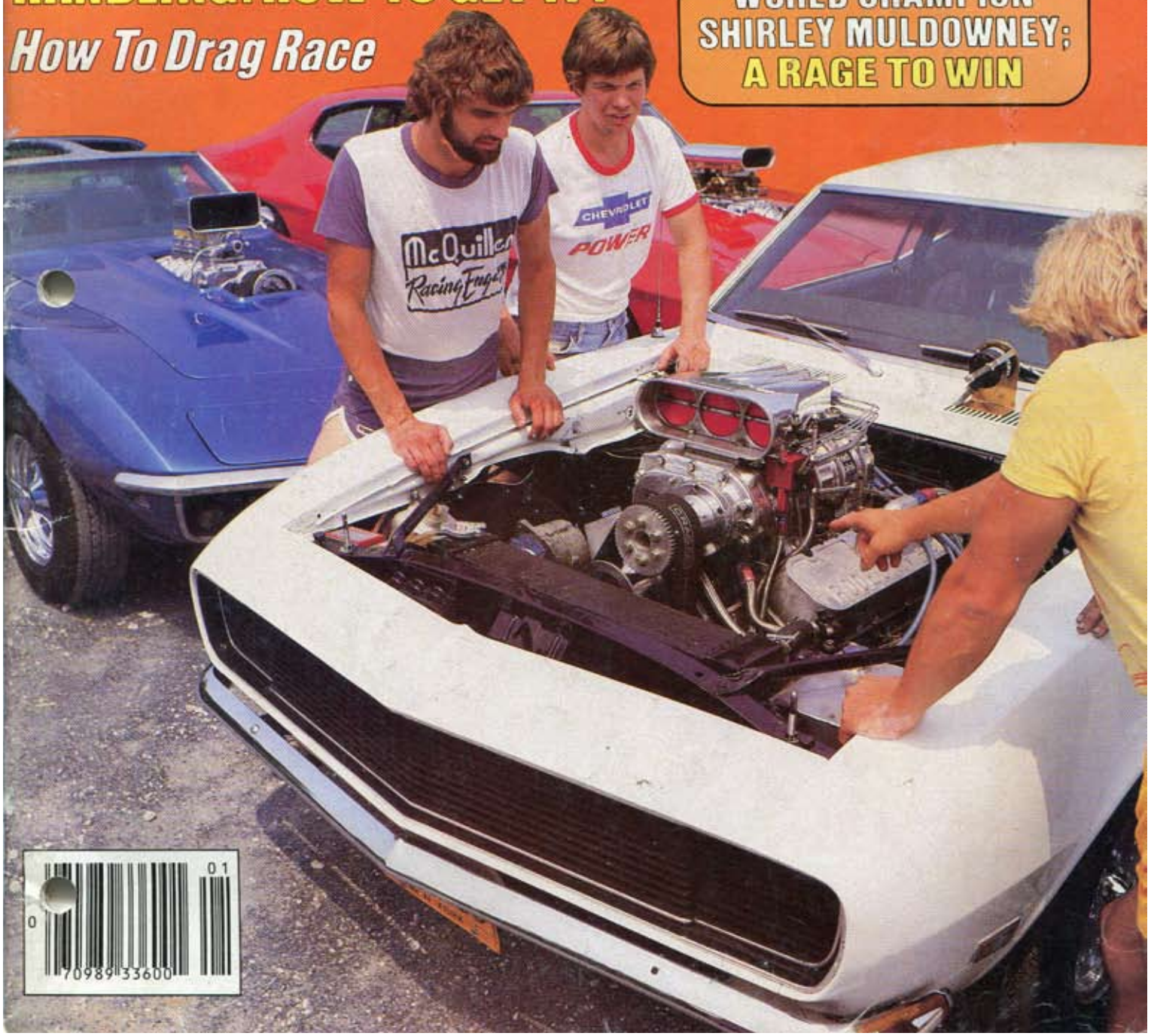

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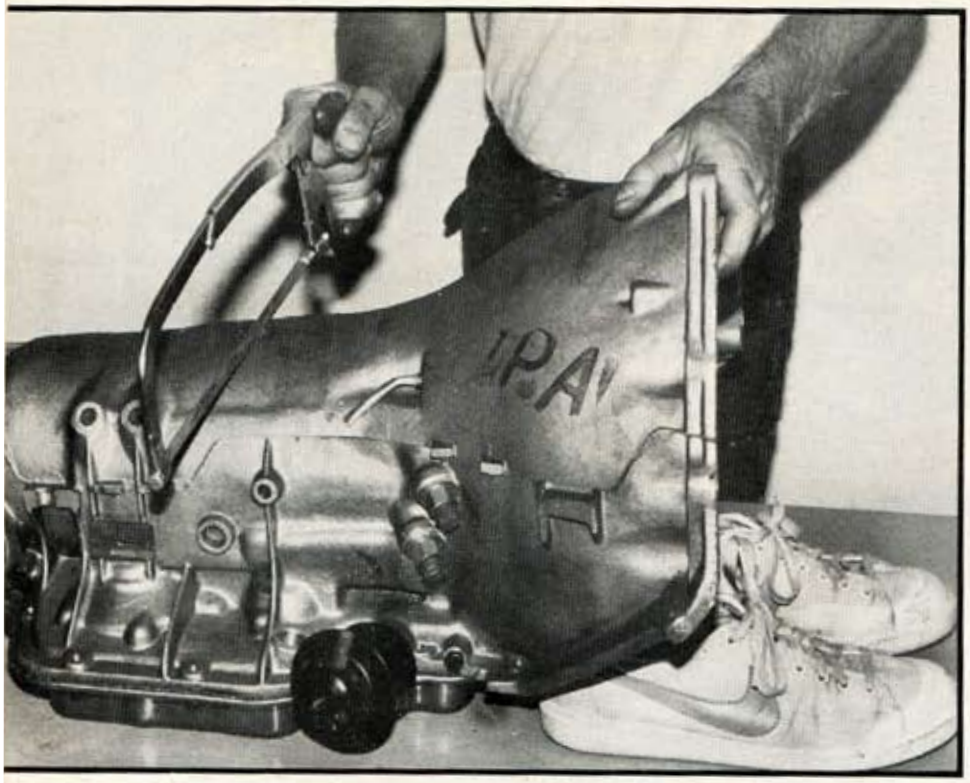


TURBO 400 TRICKERY

Making The Turbo 400 Transmission Better

BY CAM BENTY Photos by C. Van Tune

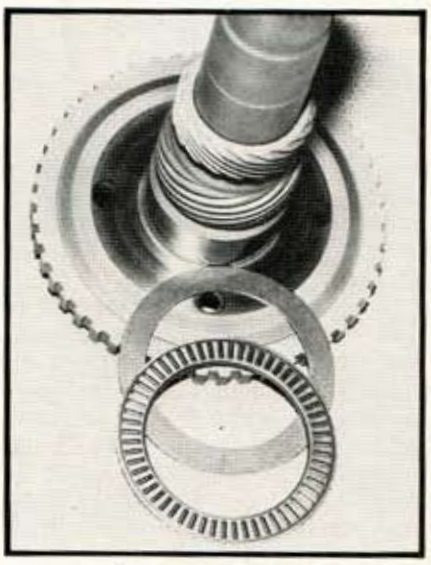
One of the major problems with Turbo 400 transmissions concerns sealing between center support housing and high gear clutch drum. In stock configuration, four steel piston-ring style rings are located on the center housing. When high gear clutch drum is in place rings expand—with first three rings directing the flow of transmission fluid to the high gear clutches. Last ring directs flow of fluid to second gear sprag clutch. Advanced Transmission remachines center housing collar, installing seven Teflon rings to give more support for clutch drum—not allowing it to walk around and lose fluid. First five rings direct fluid to second gear clutch sprag. Teflon rings are resistant to hot oil temperatures, fine metal in the fluid, high line pressures, and sealing problems.

Most mechanical items have advantages and disadvantages. With the 400 Turbo Hydramatic transmission produced by GM, a favorite of racers and street machiners looking for added driveline strength, the advantages are many, however there are a few problems which can cause potential purchasers to select another transmission.

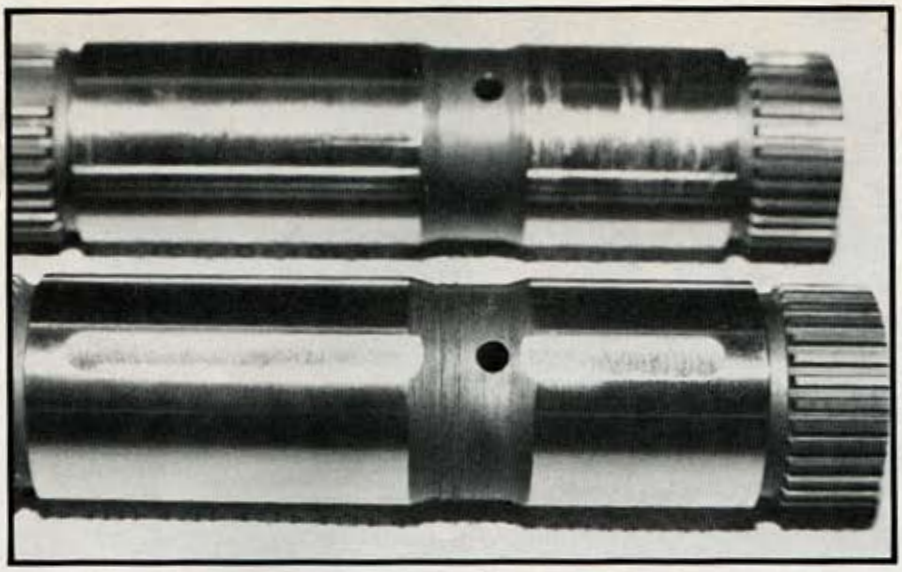
The biggest problems with the 400 Turbo Hydramatic transmissions are sealing problems with the center hub, pump and clutch drum, and internal heat built up by metal-on-metal contact. In addition, line pressure changes can drastically alter and damage the internal workings of the transmission causing costly repairs.

Jim Galatioto of Advanced Transmissions (11235 Coloma Road, Unit G, Rancho Cordova, CA 95670 916/635-2525) has developed a few items which alleviate these problems. By using Teflon sealing rings instead of the stock metal units and replacing the thrust washers with Torrington bearings, the transmissions run cooler with less leakage and can withstand the increased line pressures which often accompany the installation of an aftermarket shift kit.

As an added transmission improver, Jim has also designed a new valve body with both forward and reverse shifting patterns. Both bodies make for better driveability around town and race ready action when the time arises.



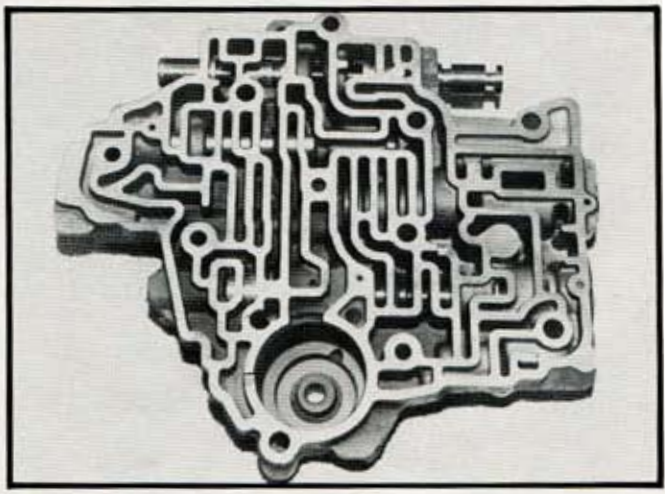
Thrust washers are commonplace in 400 Turbo Hydramatic transmission, however they cause friction within transmission. Advanced Transmission substitutes a needle bearing to reduce friction and overall transmission temperature.



Advanced Transmission modifies sun gear shaft by cutting a groove the length of the shaft to help lubricate center support bushing. This prevents galling by sun gear as noted in shaft in the background.

Stock pump forward clutch apply hub also uses metal rings to seal it to center support housing as is found with center support housing clutch drum connection. Advanced Transmission substitutes Teflon rings here as well.

A similar needle bearing is used in rear planetary output carriers (shown here) and forward clutch drive hub.



Advanced Transmission also offers "Total control" valve bodies with full manual control reverse pattern (L-2-3) or forward pattern (3-2-L). The valve bodies give total control and can be shifted at any rpm, giving quick instant shift according to Advanced Transmission. For cars using low gears on the street or strip, valve body can be set up so when shifting back to manual low gear, the transmission will have no decompression freewheeling out of gear).