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### WARNER T-85/T-89 THREE-SPEED TRANSMISSIONS

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These heavy-duty manual gearboxes were a favorite of U.S. manufacturers

Few transmissions can claim to be as popular with American manufacturers as the Warner T-85. From the mid-Fifties to the early-Sixties, you were likely to see it mounted behind the engines of most U.S. car makers. The helical-cut gears offered in the T-85 made it a much quieter transmission than its predecessors, which lent to its popularity as standard equipment in many three-speed applications during that time period. Some manufacturers such as American Motors and Ford added an electric overdrive, also designed by Warner, to the tail housing to make this transmission more reliable at highway speeds and more fuel-efficient. The T-85 was also the transmission that Warner tinkered with to build its most popular four-speed transmission, the T-10. The T-85 is popular with many classic car enthusiasts because

A vertical advertisement for Hemmings Motor News magazine. At the top, the word "SUBS" is written in large, bold, yellow letters. Below it is a stack of three magazine covers. The top cover is the "Hemmings Motor News" issue, the middle one is "World's Greatest", and the bottom one is "World's Most Wanted". Below the stack, the text "World's Collected Market" is visible. At the bottom, there are four bullet points: "Over 10,000 cars each month", "Thousands of parts for sale", "Auction results", and "Buyer's Guide".

it can be installed behind just about any engine size and can handle the higher torque and horsepower engines with ease. Although not used in any Chevrolets as original equipment, the T-85 will replace the weaker Saginaw three-speed with minimal installation problems.

The T-85 has a 9-bolt D-shaped side cover to access the gears and side-shifting linkage that was inline rather than staggered, as they are in the T-89, so the T-85 shares those same features with the T-10. The case is 9 1/2 inches long and made of cast-iron, making the T-85/89 transmission both very strong and very heavy. Its initial use was in performance V-8 engine applications such as 1955 Packards and Mercurys, 1956 Studebakers and the turbocharged 1957 Ford Thunderbirds.

First gear was not synchronized, although second and third gears were, using 36-tooth bronze synchronizer rings. The T-85/89 uses a four-step cluster gear. The major difference between the two transmissions is the mainshaft; the T-85 uses a helically cut first and reverse mainshaft, whereas the T-89 has a straight-cut mainshaft. When Warner built the T-85 into the T-10, it put the fourth gear in the reverse position in the gear case and moved reverse back to the tailshaft. The high-ratio non-synchronized first gear allows you to shift into second at higher rpm, but this also makes it very difficult to downshift from second to first at speed. Shift ratios were either 2.53 or 2.49:1 for first gear, 1.59:1 for second gear, and 1.00:1 for third gear. The reverse ratio was 3.15:1. Truck ratios were 2.99 or 2.97:1 for first, depending on year and model with 1.75:1 for second and 1.00:1 for third. Reverse remained at 3.15:1. The input shaft is 1 1/8 inches in diameter in most passenger car applications and 1 3/8 inches in the Ford trucks, and has 10 splines. The clutch outside diameter varies between engine sizes and manufacturers, but both the friction disc and pressure plate were available between 9 1/2 and 12 inches.

The casting number on the passenger side of the transmission is another easy way to identify the T-85. The transmission model is part of its casting number, usually with an additional letter designation after the T-85. You will find the T-85 three-speed in these cars:

1957-'66 American Motors/ Rambler with 287 or 327 engine.

1965-'69 Jeep J-series 4WD pickups (used with a Dana 20 transfer case)

1963-'67 Jeep 4WD Wagoneer and Cherokee with a V-8 engine

1965-'71 Ford truck

1955-'58 Packard



1962-'64 Plymouth with 413 or 426 engine

1964-'65 Buick

1960 Dodge Dart, Matador and Polara

1956 Studebaker

1957 Nash Ambassador with a V-8 engine

1957 Hudson with a V-8 engine

1958 Edsel

1955-'57 Mercury

1958-'64 Pontiac

1962-'63 Oldsmobile

Some of the more sought-after casting numbers are the T-85-K, which came with overdrive and was used in '67 AMC Marlins with "twin-stick" shifters, and the T-85-N, which was the 1965-up Ford truck unit that came with the Warner R-11 overdrive. The overdrive units are also easily identified. The casting number is on the passenger side of the overdrive unit, and the case will designate the R-10 or R-11 model.

These appeared in V-8 powered cars such as:

1965-'67 AMC Marlin, Ambassador and Classic

1956-'57 Thunderbird and '58-'60 Ford (with 352 engine)

1960-'62 Ford Galaxie (with 406 or 427 engine)

1956-'58 Studebaker Golden Hawk and Taxi

1965-'71 Ford trucks

Although many Ford trucks used the T-85 after 1956, only the 1965-up units came equipped with an overdrive unit as original equipment.

The similar T-89 transmission was used in these models:

1960-'66 Jeeps

1956-'71 Ford trucks

1959-'64 Studebaker

When interchanging one of these units, note that the input shaft is slightly longer on the truck transmissions by about 1/2 inch, so the clutch pilot bushing would have to be shortened to compensate for the extra length. Many non-overdrive T-85s used a torque-tube style driveshaft, so adapting the transmission to your drivetrain would involve changing or shortening the driveshaft as well as using a yoke adapter on the tailshaft. Many of the overdrive units had a 17-spline output shaft for a slip yoke.

When you locate a donor T-85, grab the original clutch disc and throw-out bearing too, or purchase a remanufactured disc and new bearing that fits the original application. This will make the installation easier. You can often press the old throw-out bearing off the original collar and reuse your collar with a new bearing instead of buying a whole new assembly. A pressure plate of the same diameter with the proper flywheel pattern will be necessary as well. Any good parts store should be able to match one up for you, based on bolt pattern and diameter.

The R-11 was the strongest of the overdrive units. All of the overdrive units are controlled by a solenoid, which requires the original dash control, harness, overdrive relay and kickdown switch. The kickdown switch was installed on the back of the brake pedal. Although overdrive would work in all gears, effectively giving you six gear possibilities instead of the usual three, it works best at higher rpm or highway speeds, and you should not engage the overdrive when driving around town. Its intended use was for vehicle speeds of at least 40 mph.

Most original overdrive applications were for "three on the tree"; however, aftermarket floor shifters are available. The use of a T-85 with overdrive may present clearance problems when used with a floor shifter and bench seat combination because of the solenoid's location on the shifter side of the tailshaft. Many truck enthusiasts who have successfully completed this exchange have opted for bucket seats in their truck to make this conversion easier.

Next time you are at a swap meet or fishing around at your local pick-a-part, keep an eye out for one of these transmissions. If you don't have a need for a unit for your current project, you may very well want to use one on your next restoration.

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The advertisement features a central graphic with a light green background. On the left, a framed magazine cover is shown. To its right, the text 'PUT YOUR CAR ON THE COVER!' is written in large, bold, red, italicized letters. Further right, a small photograph of a blue classic car is shown with a red arrow pointing to a stack of three magazine covers: 'SPORTS & EXOTIC', 'Classic Car', and 'MUSCLE'. Below the text, there is a small, faint link.

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