What the Shop Manual Won't Tell You about Rebuilding

A

Borg-Warner Model 8 Automatic Transmission

by

Stan Gundry with John Metzker

In a recent booklet I wrote on tips for Avanti restoration I advised my readers not to attempt to rebuild an automatic transmission on their own. I had come to that conclusion even though John Metzker had encouraged me to give it a try. But the complexity of the shop manual instructions and of the transmission itself scared me away from attempting the job. And so I advised my reader's not to attempt it.**

I now believe I could have given better advice. I have just completed a low-budget restoration of a '64 Daytona hardtop with a V-8 and an automatic transmission. To keep the cost down I decided to rebuild the AT myself. The total cost was about $75, and I was pleasantly surprised at how easy it was. While it was tedious and time-consuming, anyone with average mechanical abilities and ingenuity can successfully complete the job without any special difficulty. Patience and attention to every detail of the shop manual are the keys to success. But there are a few things that the shop manual won't tell you. John Metzker helped me through these rough spots, and he joins me in writing this article for TW.

1. Background Information. The transmission we are dealing with in this article is technically known as a Borg-Warner Model 8 Automatic Transmission. It was the automatic transmission used on all Studebaker V-8's from 1956 to 1966 (including AT floorshifts with only slight modifications to be mentioned later). But Studebaker was not the only domestic auto maker to use this transmission. American Motors used it as much as Studebaker; and it was also used on some products from Jeep, International Harvester, Checker Motors, and Ford in that era. Rebuilders commonly refer to it as a Ford small case iron transmission or an AMC Model 8. In the different applications of the transmission there were modifications of servo and valve assemblies, but the basic transmission remained the same. Consequently, rebuild kits (including clutch plates, cast iron seal rings, gaskets, and O rings), relined clutch bands, seals, bushings, and new and used parts are still readily available from independent rebuilders and wholesale AT parts houses. (Rebuilders and wholesalers who have been around since the early 1960s can be especially helpful in locating what you need since they will be personally familiar with the transmission.)

Where should you begin? Assuming that the AT is already out of the car, you logically begin with disassembly. But before beginning that, I suggest that you read everything about the AT in the shop manual. It will familiarize you with the transmission. Some things you may not quite understand the first time through. Don't be concerned about that; it all will become clear to you later on as you have the disassembled transmission in front of you.

2. Tools Needed. Most of the special tools called for in the shop manual are not absolutely necessary, and it is possible to improvise in some cases. a) Of course you will need a basic set of mechanics tools including sockets, open and closed end wrenches, screwdrivers, etc.. If you discover you do not have a specific item in your set, it will certainly pay you to buy it. Another day will come when you need it. b) A press to remove and install seals and bushings would be helpful, but again not necessary. I easily accomplished everything I needed with a hammer and assorted bits of pipe, tubing, and sockets used as installing devices. c) If you do not have a special chisel to cut out bushings, you can use a chisel that is called a "muffler cutter." As the name implies it was intended for exhaust work, but works fine for this also. You also can easily make one out of a center punch. Simply take a center punch and grind off the end at approximately a 45 degree angle. The

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