

Distributor Cracks

By Tom Endy, Westminster, California

The Model A Ford distributor is often found to have a crack in the cast housing. The crack is usually discovered at the top of the shaft tunnel where the upper bushing resides. However, they are also prone to cracking at the lower bushing. It is my opinion that the cracks do not occur during normal service. I believe someone attempting to remove and replace the bushings causes the housing to crack.

During normal service, "crud", comprised of wear particles and hardened lubricant, forms around the inner diameter of the shaft tunnel between the upper and lower bushings. When an attempt is made to remove the bushings using a bushing insertion tool and a shop press, the crud compacts and cracks the housing. The area around the top bushing is the most likely to crack since the housing is very thin in this area. Severely worn bushings can also allow the insertion tool to slip past the bushing and cause the housing to crack.

Using a bushing insertion tool and a shop press is the quick and easy way to remove both bushings. However, if cracking is to be avoided, it is best to not use this method. Though it is more time consuming, a better method is to split the bushings using a hacksaw blade. Once the bushing is split, take a common nail and flatten the end with a hammer and grind it to a chisel point. Insert the nail down along the split in the bushing and gently tap it with a hammer to force it away from the shaft tunnel.



Common nail shaped to a chisel point.



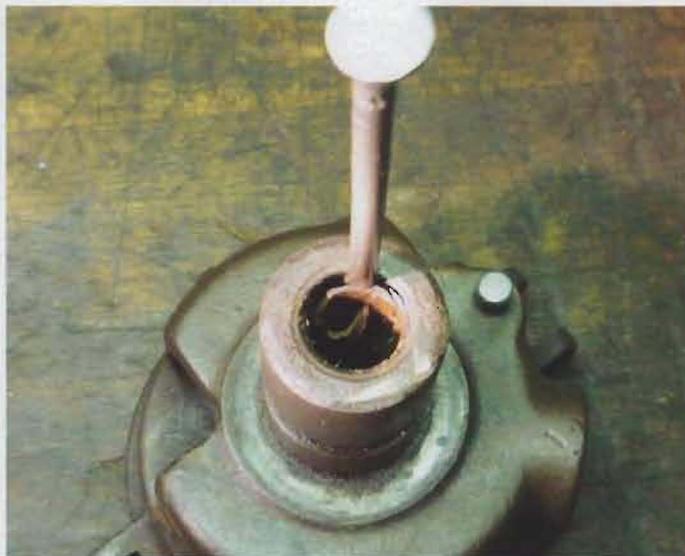
Typical crack found near the top bushing.

Grab the protruding area of the bushing with a pair of long nose pliers and curl the bushing out.

Once both bushings have been removed, the housing should be thoroughly cleaned. Bead blasting is the best method. The shaft tunnel should be free of any debris. Run a 1/4" drill bit through the oil reservoir hole to clean out any "crud" residing there. Often the hole is found completely blocked.

A shop press and a bushing insertion tool can be used to install the new bushings. A word of caution, some reproduction bushings on the market may be oversize and will surely crack the housing when pressed in. Over the years, I have obtained bushings from Bratton's Antique Auto and have found them to be the correct size. They fit properly, and I have never had a problem with them cracking a housing.

The housing can also become cracked if care is not taken during the pressing-in process. Both bushings should be pressed in from the bottom. In this manner, the top bushing will be correctly lined up as it approaches the top of the shaft tunnel where cracking is more likely.



Both bushings in the distributor housing have been split with a hacksaw blade and the modified nail is gently tapped down along the split.



The top bushing is curled out with long nose pliers.



The bottom bushing is curled out with long nose pliers.



Bushings have been removed, the housing has been de-greased and bead blasted and is ready for the installation of two new bushings.

Several tools have been developed to aid in the pressing in process. The insertion tool is a shaft with a step machined in it that the bushing is slid onto. Another tool is a collar made from the bottom section of a discarded unserviceable distributor housing machined to support the top of the shaft tunnel when the housing is placed upside down on a press platform. This is needed because the top of the tunnel for the shaft is below the level of the outside diameter of the distributor housing. A third tool is a plate to place the collar in for support. The plate must have a hole drilled through it to allow the insertion tool to pass through it.



The three tools used to press in the new bushings. The plate is at the upper left, the collar is at the lower center, and the insertion tool is on the right.



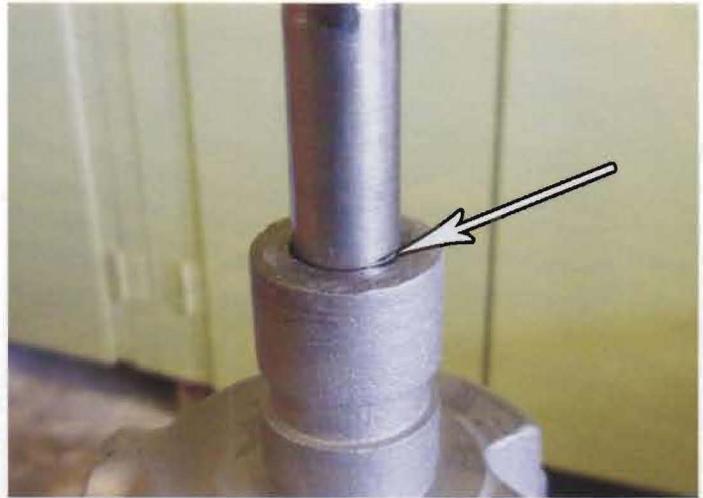
The collar is placed inside the recess in the plate.



The insertion tool has a step machined into it.



The distributor housing is placed under the press upside-down on the collar and on the plate. The top bushing is inserted from the bottom.



A marker on the insertion tool indicates when the top of the bushing has reached the approximate top of the shaft tunnel.



The distributor housing is turned over under the press and the insertion tool is inserted from the top and the bushing is pressed back into place if it slightly overran the top of the shaft tunnel.



With both bushings installed, and with no cracks in the housing, the two bushings are reamed to accept the new shaft.

Once the new bushings have been reamed and the new shaft fitted, the distributor can be fully assembled and put into service with the assurance that there are no cracks in the housing.

Turn The Press Down

Turn the press down and the shaft is inserted through the bushing. The bushing is reamed to fit the shaft. The distributor housing is turned over under the press and the insertion tool is inserted from the top and the bushing is pressed back into place if it slightly overran the top of the shaft tunnel.