# Too Long!

## By Tom Endy

## In these applications, the wrong length bolt can cause trouble.

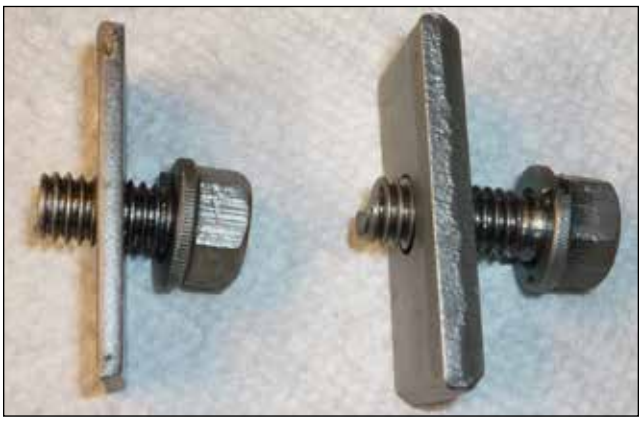
**When Henry designed** the Model A Ford, he took into consideration the size, length, and orientation of every bolt on the car. After ninety years most Model A's still on the road have been taken apart and put back together ten times over. By now there are most likely incorrect bolts in a number of places on the car. There are a few locations that if too long of a bolt is installed or if the orientation is not correct, it can cause you a significant amount of grief. The purpose of this article is to identify these areas and describe how they can create a problem.

### Zenith Carburetor Mounting Bolts

Note the forward bolt, if too long, will bottom on the casting protrusion and act as a fulcrum to break the mounting flange off.

**The correct size bolt is 5/16-18x3/4 inch.**

### Transmission Retainer, Counter, and Reverse Idler Shaft



A change was made in the machining of the cluster gear shaft in the manner in which it is retained at the rear of the transmission housing. The early shafts were retained with a 3/16 inch-thick retaining plate described as a retainer for the counter and reverse idler shafts. The length of the bolt used was one inch long.

The change to the shaft requires a retaining plate that is only 1/16 inch thick. As a result, the length of the bolt was reduced to 3/4 inch long. The photo shows the later configuration on the left, the early on the right.

When overhauling a transmission you may find the early configuration cluster shaft. Suppliers only supply the later configure cluster shaft. This will require the use of the thinner 1/16 inch-thick retaining strap. If you install it with the original one-inch-long bolt, the end may contact the cluster gear and reverse idler gears where they mesh. It is therefore prudent to locate a 3/4-inch bolt or cut a quarter inch off the original one-inch bolt.

**The correct size bolt for the later cluster shaft is 3/8-16x3/4.**

## Starter Mounting Bolts

The three starter mounting bolts are all the same length. However, the one in the top corner between the starter and the engine, if too long, will interfere with the flywheel and prevent the engine from rotating.

**The correct bolts are 3/8-16x1.**

## Flywheel to Crankshaft Mounting Bolts/Retainer

The four flywheel to crankshaft mounting bolts must be the proper length. If they are too long, they protrude through and interfere with the rear main bearing and possibly do damage to it. The retainer disk must also be installed as it affects the overall length of the bolts. Lock washers should not be used as they will position the heads of the bolts such that they will contact the springs in the clutch disk.

**The correct bolt size is 7/16-20x13/16.**

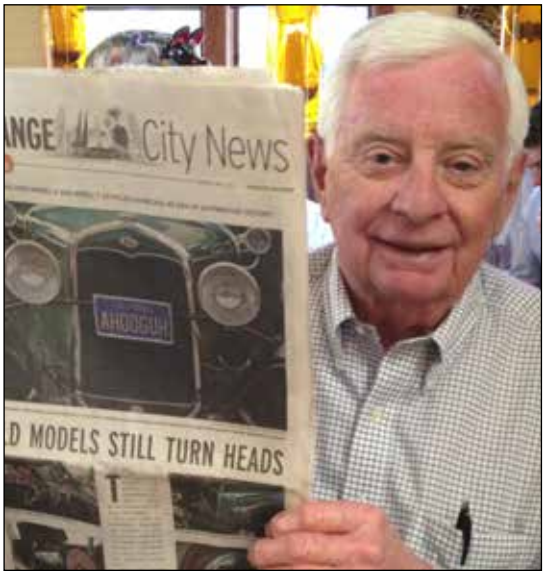
## Front Wheel Backing Plate Mounting Bolts

The four mounting bolts and nuts used on each front wheel backing plate must be oriented correctly with the nuts on the outside facing the center of the car. This then orients the heads of the bolts on the inside of the brake drum. This is exactly opposite to how the rear backing plates are mounted, which causes confusion. Quite often the front bolts are found oriented incorrectly. This causes the rotating hardware inside the drum to contact the edges of the castle nuts.

**The correct mounting bolt size is 3/8-24x13/16.**

## Check the Catalog

Most suppliers sell the various bolt sets. Their catalog usually specifies the correct bolt size. It would be prudent to have a catalog handy when putting a Model A back together to make sure you are installing the proper size bolts.

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