FROM THE BENCH BY CHRIS WICKERSHAM

Modifying the Ford Factory 4 Blade Fan

Our Model A's were first on the road more than 90 years ago and today people seem to enjoy seeing a car this old still being driven. Often when I stop for gas there is someone who wants to get a closer look at my Model A and many times I have been asked to show them the engine. They are always amazed at the simplicity of design and how easy it is to recognize the major components which is not always possible with today's automobiles. When I raise the hood to show the engine I want it to look like a Model A engine of the era, not like one that has been all modernized.

As we all know the original 2 blade Model A fan is subject to internal corrosion and fatigue which can result in a blade separating from the hub. When this happens the owner is lucky if the blade does not go thru the hood or damage the radiator. Because it is not advisable at all to run an original fan, I feel the next best option is to use the 4 blade fan that was used on the 1932 – 1934 Fords with a Model B engine. You just have to be careful and find a good fan that has not been damaged, badly rusted or is excessively pitted.

I do not like the aluminum replacement 2 blade fan because of the aluminum tapered hole for the water pump shaft. When installed the fan belt pulls the fan assembly to one side which tends to loosen the fan on the shaft. Using a flat washer under the nut and keeping the nut tight will help, but an aluminum hub on a tapered steel shaft is not a good design. There also is available a multi blade plastic fan that attaches to a steel hub that many owners have used with very good success but in my opinion this does not look at all like something Henry would have installed on our Model A's when they were new.

Recently I have discovered that there is a weakness in the design of the factory 4 blade fan. If you carefully look at one of these fans, you will see 4 large rivets that attach the fan blades to the pulley assembly and 4 small rivets that attach the fan blade and pulley assembly to an inner hub with a tapered hole for the water pump shaft. When these fans have been in use for a long period of time, the heads of the small rivets tend to loosen. If this is allowed to continue, the fan and pulley assembly could eventually separate from the inner hub. This condition develops over a period of time and accompanied by a rattling noise in the area of the water pump. It is easy to check for any looseness of the fan by grabbing one blade and moving side to side. If looseness is detected, either the hub itself is not tight on the shaft or the small rivets are starting to loosen up.

There is a very easy repair to fix this problem. Replace the 4 small rivets with larger ¼ inch screws. First remove only one rivet and then drill thru both the fan and hub assembly with a ¼ inch drill. Install a ¼ -28 (fine thread), 1 inch long, button head, socket head screw with a grade 8 nylon inserted self locking nut. Then remove the other 3 rivets, drill out those holes and install the other three screws and nuts. Enlarging the holes in this manner will keep the holes in good alignment with a tight fit of the screws. A drop of Loctite on the threads is also a good idea. The button head screws are slightly larger and much stronger than the original rivets and the heads of the screws are much larger than the original rivet heads which will keep the fan assembly from loosening on the hub. Do not use ordinary slotted round head screws as they are not nearly as strong as socket head screws. An extra bonus is with the fan installed you can check the screws for tightness with an allen wrench. The nuts on the inside will not turn because of their close fit to the inside of the pulley assembly. Just be sure to include an allen wrench with the tools you carry in your car.




Tech Tip

When removing or installing the radiator, I find the most difficult part of the job is removing and reinstalling the 2 bolt and spring assemblies that attach the radiator to the frame. You often have to remove the radiator shell to gain access to the cotter key that retains the nut and then you have to hold the head of the bolt which is up inside the front cross member while you remove the nut. This is especially difficult if you are working by yourself.

To simplify this procedure I make a "T" Bolt by welding a short piece of ¼ inch bar stock to the head of the bolt and use a nylon inserted self locking nut to replace the castellated nut and cotter key. The "T" Bolt does not require a wrench to keep it from turning and the self locking nut does not require the pesky cotter key. One person can easily remove the radiator by himself and there is no reason to first remove the radiator shell to gain access to the cotter key. Of course, this would not be acceptable for a "Fine Point" restoration but it sure works well with a street driven or tour Model A.