How to Repair a Vacuum Windshield Wiper Motor

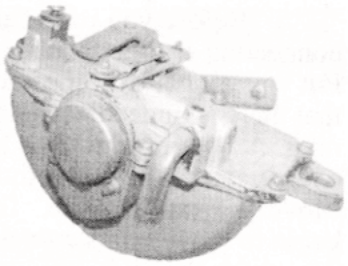
These instructions are for a Trico Vacuum Wiper Motor (upper left), but are generally applicable to similar types and makes.

Easy Way:

Pack it up and send it to Clean Sweep Wiper Motor Repair, Rome Truck Parts, or to Ficken Wiper Service (see info on page 37)

Tough Way:

Do it yourself. The subject wiper motor is a Trico Vacuum Wiper Motor. Other than bad gaskets, there were no broken parts.



When I began the project, the motor was so encrusted with dirt, grease, and crud that I couldn't even read the manufacturer's name on the top. Since I planned on disassembling the entire motor, I wasn't too concerned about getting moisture inside. To start, I connected a length of tubing to the vacuum hose terminal and plugged the line. Then I sprayed the entire motor with Oil Eater®, scrubbed with a stiff nail brush and toothbrush, rinsed in hot water, and repeated. Most of the grease was gone, but it was still a mess. I took the motor over to the media blaster and thoroughly cleaned the outside. I would never do this if I hadn't planned on taking the motor completely apart. Just a bit of abrasive material in the motor could permanently ruin it. I blew the motor off with compressed air and was now ready to begin tinkering with something that I knew nothing about.

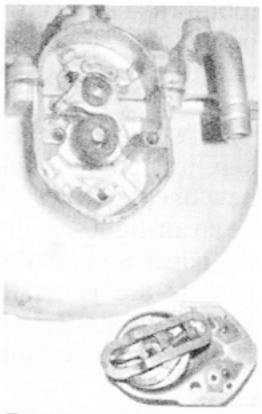
Trico didn't use normal screw-head or hex-head fasteners; they used a raised rectangle. The easiest tool, I found, to use was a tiny crescent wrench and a pair of needle nosed pliers. On this particular model, three different sized screws were used. The eight screws that retain the top plate are one size; the two screws that hold the slide on/off switch are the small ones, and the two that hold the round cover on the back side are sheet metal screws.

The very first thing that I did was to photograph the motor from all angles, and as I went along, I photographed every step. In that way I'd have photos to refer to in re-assembling the motor, and I needed them.

I removed the two screws holding the slide-switch on the top, and removed the two pieces of the slide mechanism. Removed parts were put into an empty tuna fish can so they didn't jump off the work bench and run away.

Remove the two screws holding the slide-switch on the top.

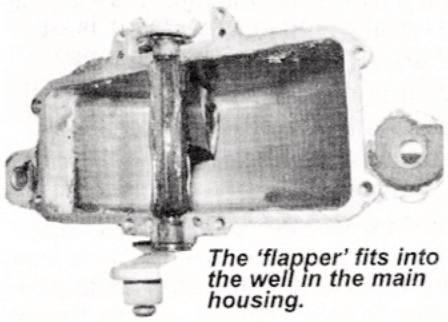
Next, off came the round cover on the back of the motor that covers the reversing mechanism. The thin paper gasket came off in several pieces, indicating that I'd have to make or obtain at least one new gasket. Under the cover is a spring loaded slide. Photograph the assembly just so you can see how the spring is connected. It's not difficult, but unless you make special note of how the spring is connected, it can mean some experimentation.



Remove the round cover on the back of the motor.

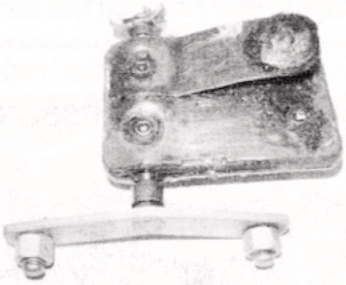
The top cover is the next step. Remove the eight screws and put them in the parts can. Gently lift off the top cover. You will see a vacuum flapper assembly within the motor housing. Lift it out. More than likely the flapper will be coated with hard, crusty grease. Same thing for the inside of

the motor housing. DO NOT clean either the flapper assembly or the housing well in the media blaster. The abrasive can score the surfaces preventing a vacuum in the future. Wash the housing out with Oil Eater® and a rag. Get all the bits of hard grease off the walls of the well, and rinse thoroughly. Dry the housing.



The 'flapper' fits into the well in the main housing.

The flapper will require additional cleaning work. Use a paper towel to wipe off any 'soft' grease. Next use a plastic or wooden scraper to clean off the hardened grease. When you have removed as much as you think that you can, soak the part in an Oil Eater® solution. After a few minutes, clean it with a stiff brush and the old toothbrush and rinse. A lot more hard grease will be visible. Scrap it off, wash again and continue until the part is grease and crud free.



Lift out the 'flapper' assembly and carefully remove all traces of grease, both soft and crusty.

Examine the top cover gasket. If it is broken, it is going to take a lot of patience to make a new one, but the gasket is very important. It has to be an air-tight seal. It is a thin gasket; a piece of typing paper is about the right thickness. Replacement gaskets are generally available from Model 'A' Ford parts houses. Use a Q-Tip to clean out all crevices in the motor, cover, and bleeder holes.

Clean the round cover, clean the parts of the reversing mechanism, and blow through the vacuum tube to make sure that it is clear. When you are satisfied that the parts will pass a white-glove inspection, it is time to re-assemble. Make or buy your gaskets before you do anything else. Trace the old gasket if possible, and use small, sharp scissors and an Exacto knife to cut out the gasket. For the round cover, a piece of postcard weight stock is fine.

Liberally coat the well - sides and bottom - with Vaseline®. Be liberal but you don't want it too thick. The layer of Vaseline® will lubricate and provide a seal. Move the flapper back and forth by hand. Remove excess Vaseline®. If the cam falls off the end, be sure that the little 'ears' point up and out when you re-install it. With the flapper in place, install the gasket and the top cover. Put the screws in, but don't tighten them yet.

Re-assemble the parts that go under the round cover, install the gasket and the round cover and the two screws. Again, do not tighten yet.

Now the slide mechanism. Install the heavy slide first. Be sure that the pin on the end of the on-off lever fits into the square hole at one end of the slide. The spring plate is next. You will notice that one end of the spring is a semi-circle and the other end is just rounded off. The semi-circle end goes toward the round cover, and a washer fits under the retainer screw on that end. Look the motor over to be sure that everything is installed properly. Gently try the swing arm to make sure that everything moves properly. If you are satisfied, tighten all the screws using a pair of needle-nosed pliers. Make sure that the screws are all tight.

Before you re-install the motor, test it by connecting it to a vacuum fitting on the engine. Put your finger over the vacuum fitting to be sure that there is, indeed, vacuum with the engine running. A length of rubber hose connected to the engine and to the wiper motor should do the job. Move the on-off slide. The swing arm should begin to move on its own and at a decent rate. As you move the slide, the speed of the swing arm should slow down, and when turned off, it should park itself.

The same basic procedure can be used on a variety of vacuum wiper motors. You will find that parts or descriptions will vary, but essentially the technique is the same: disassemble, clean, make new gaskets, lubricate and re-assemble, being sure that the system does not leak air.

And remember, if all else fails, there are a couple of wiper-motor services that can put everything back together the way it is supposed to be.

S.K.