

Lubricating Midyear Windshield Wiper Transmissions

by Joe Randolph

Contrary to what its name implies, a “wiper transmission” is not part of the wiper motor assembly. The wiper transmission is the assembly that holds the shaft on which the windshield wiper arm rotates.

The shaft inside the wiper transmission is supported at the top and bottom by two Oilite bushings. Oilite is a porous bronze material that is saturated with oil to form a self-lubricating bearing. GM used this material to build “permanently lubricated” wiper transmissions that have no provisions for adding lubricant. This design was used in C2 Corvettes and probably other Corvette generations as well.

The problem with “permanently lubricated” Oilite bushings is that they eventually dry out and start to squeak and bind. I experienced this many years ago with a 1961 Chevy that I owned, and solved the problem with the procedure described here.

As a preventative measure, I applied the procedure to my 67 Corvette wiper transmissions while preparing the car for the National Road Tour to Hampton, VA. During the ten years I have owned my 67, the windshield wipers had never been operated for more than a minute or so as part of Flight judging. I figured (correctly) that the wipers might have to operate for much longer periods on the Road Tour, so some preventative maintenance might be appropriate. After all, those wipers transmissions had last been lubricated by GM 46 years ago!

The procedure for re-lubricating the wiper transmissions involves drilling a small hole in the middle of the casting to gain access to the area between the two Oilite bushings, adding some motor oil through this hole, and then sealing the hole.

Figure 1



Figure 2



Figure 1 shows the transmission supported in a drill press for drilling the hole. I chose to thread the hole with a 1/4-20 tap so that I could use a short 1/4-20 hex-head set screw to plug the hole.

Note that the set screw needs to be fairly short because it must only plug the hole in the casting, without contacting the shaft inside. I intentionally used only the tapered portion of the tap so that the set screw would have a slight interference fit in the soft casting material, and then used some sealant on the threads. Figure 2 shows the parts involved.

Figure 3



Figure 4



The hole provides access to the cavity containing the inside ends of the two Oilite bushings. I added some motor oil to the cavity and rotated the shaft in the bushings until some of the oil appeared at the outside end of each bushing, as shown in Figures 3 and 4. Warming the casting with some light heat from a torch helped to accelerate this process. I then filled the cavity with oil and left the transmission sitting overnight to allow the oil to soak into the Oilite bushings.

Prior to closing up the oil hole, it is important to drain any excess oil from the internal cavity. Otherwise, the excess oil will eventually work its way out of the lower end of the installed wiper transmission and drip on the floor inside the car (do not ask how I know this!).

Figure 5



Figure 6



NOTE: If you want to remove your original covers and then re-use them, that is probably possible but it would be challenging

Figure 5 shows the hole plugged with the set screw, and Figure 6 shows the new plastic cover installed on the transmission. I found that a small amount of heat from a heat gun allowed the new cover to stretch over the wiper mount and snap back into shape under the shoulder. In my case the original plastic covers were damaged from people trying to pry off the wiper arm without using the proper tool, so I simply cut off the originals and discarded them.

When reinstalling the wiper transmissions in the cowl, a sealant must be applied to prevent water from leaking past the junction between the cowl and the wiper transmission. GM used liberal amounts of some sort of “black goop” that has been reported to be a polyurethane compound. I used Loctite S30 polyurethane sealant for roof flashing, and found it satisfactory.

Note that simpler solutions could be used, such as drilling a smaller hole and plugging it with a bit of JB Weld.