Steering Column Ignition Lock Fix For GM Overdrive Transmission Conversions

By Larry Klusza, 2023

Disclaimer: What is documented here applies specifically to a 4L60E transmission in a 1970 GTO, but should be applicable to '68 –'72 GM A-Bodied cars. Though not guaranteed, it may also serve as a guide for other vehicles as well. I hope you find it helpful. Older cars without a steering column lock are not affected. - *L.K.*

I had a high performance 4L60E overdrive transmission from Silver Sport installed in my 1970 Pontiac GTO a short time back, replacing the Turbo 400 transmission that was in the car. Although the new transmission worked fine, I noticed that the steering column/ignition interlock no longer functioned as smoothly as it did. The console shifter action was stiff and there was binding in the steering column interlock that made removing the ignition key difficult. Additionally, although the backup lights worked when shifted into reverse, I discovered that the neutral safety switch didn't work at all (Yikes!). Sending the car back to the shop was not an option due to the distance and expense involved. It fell to me to find and correct the issue.

One of the components included in the Silver Sport installation kit was the console shifter conversion from the folks at Shiftworks. It really is a fine product. It contains high quality components and installs easily. The instructions tell you that there is an optional neutral switch relocation kit available because the conversion doesn't support the interlock linkage. It ensures that both the backup lights and neutral safety functions operate as intended with the new shifter detent pattern. Doing so also makes the column mounted backup light and neutral switches unnecessary, allowing you to ditch them as well as the linkage that activated them. However, eliminating the linkage also disables activation of the steering column/ignition interlock, forcing you to turn the lower steering column cover by hand in order to remove the ignition key. I was not willing to do that.

To retain the ignition interlock function for me, the shop used a Shiftworks shift lever different from what was required for my transmission. The lever (Photo 1) had the "ears" necessary to engage the interlock linkage, but also had an offset for the cable connection. This bracket would have been used in a 4L60 with the short shaft. My 4L60E transmission uses the longer shaft.

Unfortunately, due to the offset lower portion, that lever introduced substantial shift cable misalignment as well as bind in the column interlock linkage. Shiftworks Tech Support told me that because of the custom nature of such installations, they didn't make a flat lever for a long shaft 4L60E-type transmission that included the "ears" for the steering column/ignition interlock functions.

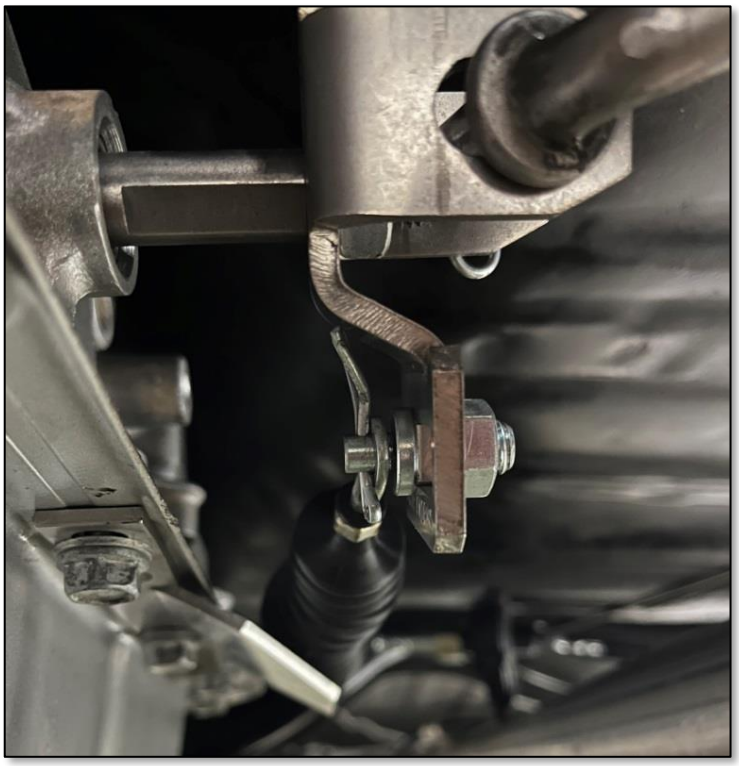

Photo 1: Cable misalignment due to wrong bracket.

Photo 2: Correct bracket for the 4L60E but modified with "ears" from the old bracket

The correct lever for my application was flat, but didn't have the ears. That Shiftworks part number is 4LE-C. I removed the ears from the offset bracket and welded them to the new one.

This resulted in a lever that addressed the shifter cable misalignment and allowed for the retention of the steering column/shifter interlock linkage. A two-for-one solution.

I also chose to purchase Shiftworks' own shifter cable. It's a premium piece but worth the extra cost. It out-performs an original OEM cable easily and any reproduction cable by a very wide margin. I found the difference to be like night and day.

With the alignment and linkage retention issue handled, I discovered that there was still some bind in the rod that ran from the cross shaft up to the steering column. That was the next thing to be addressed.

Photo 3 shows the complete stock linkage assembly after removal from the vehicle. Designed for use with a Turbo 350 or 400 transmission, it was barely able to function after the 4L60E was installed.

The longer gear selector shaft on the 4L60E forces the interlock cross shaft deeper into the frame-mounted swivel bracket, to the point of coil bind. Fore/aft misalignment also meant that the vertical rod from the cross shaft up to the steering column was also binding where it connects to the cross shaft.

Basically, the solution for this entailed substituting a 3/8" rod end for the jam screw, wavy spring washer and bushing. The hole size in the cross-shaft tab must be reduced by installing a 5/8" OD by 1/8" thick bushing w/ a 3/8" hole. Nip 2 to 3 coils off the tension spring to avoid coil bind and you're done. Here's how I did mine.

Photo 3: The Interlock linkage assembly removed from the vehicle.

(Photos 4 and 5) First, measure and cut 2.250” from the bottom end of the long rod. Then with a 3/8-24 RH die, thread the balance as far as you can go up to the bend in the rod. This will accommodate the 3/8” rod end.

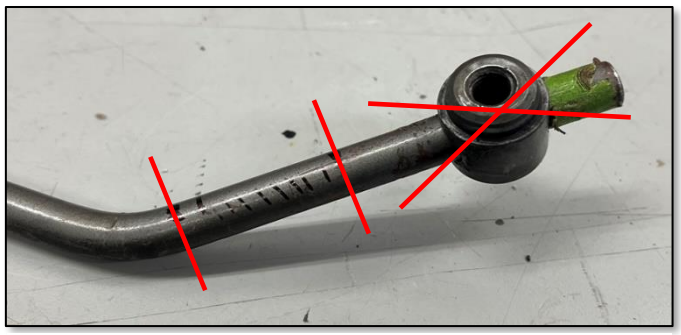

Photo 4: Modifying the lower portion of the steering column rod

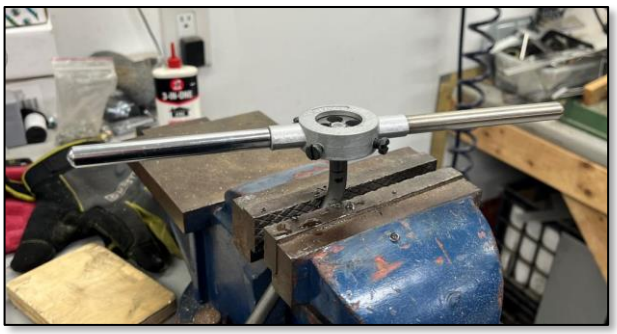

Photo 5: Threading the remaining stub end after the cut

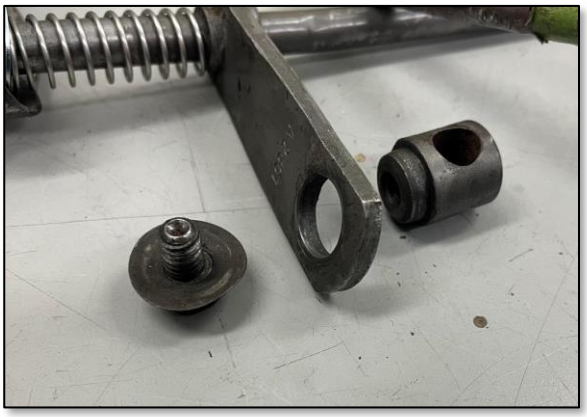

Photo 4

Next, discard the jam screw, wavey spring washer and bushing. Their function will be replaced by a 3/8” rod end and jamb nut.

Although you can probably buy a bushing, I made mine from 5/8” aluminum bar stock with a 3/8” hole drilled in the center, which was then cut off in a saw to about 1/8”

Photo 5

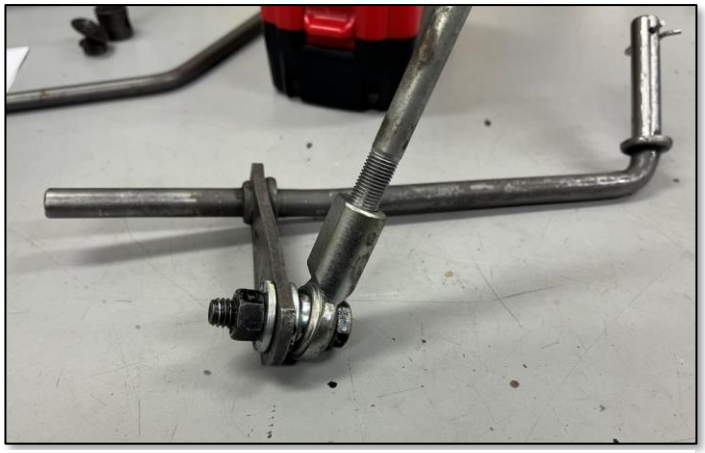

Photo 6

Here is a mockup of the assembly. You can see that the aluminum bushing I made is retained in the pivot tab by a washer on each side, with the bolt holding the whole assembly together. I also put a slight twist in the pivot tab to help things along but am not sure it was truly necessary. Your experience may differ.

Here is the last test fit. Just remember to trim 2 to 3 coils from the tension spring to avoid coil bind. Of course, the rod end received a jamb nut and the 3/8-16 bolt received a Nylok nut when the install was finalized.

At this point the only reason to make any adjustments to the rod length is to ensure that the column/ignition lock will allow you to smoothly shift the transmission into Park and remove the ignition key without difficulty.

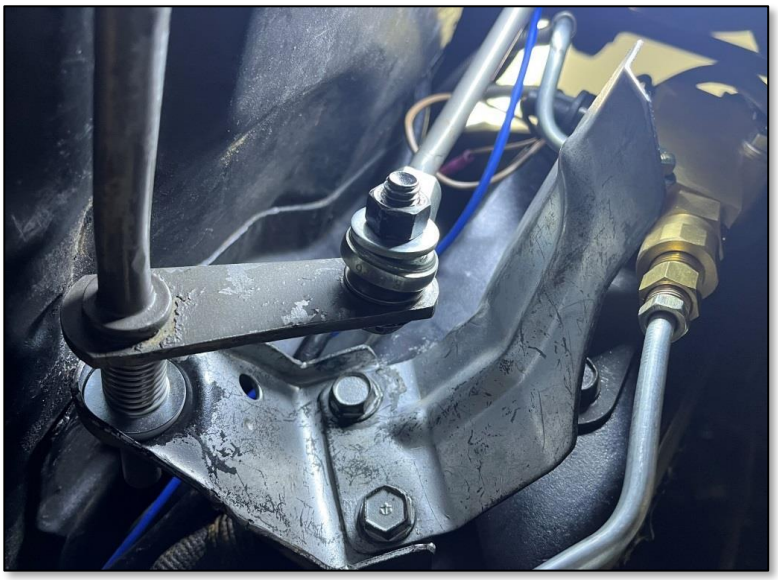

Photo 7

Then it was on to the Neutral safety switch install.

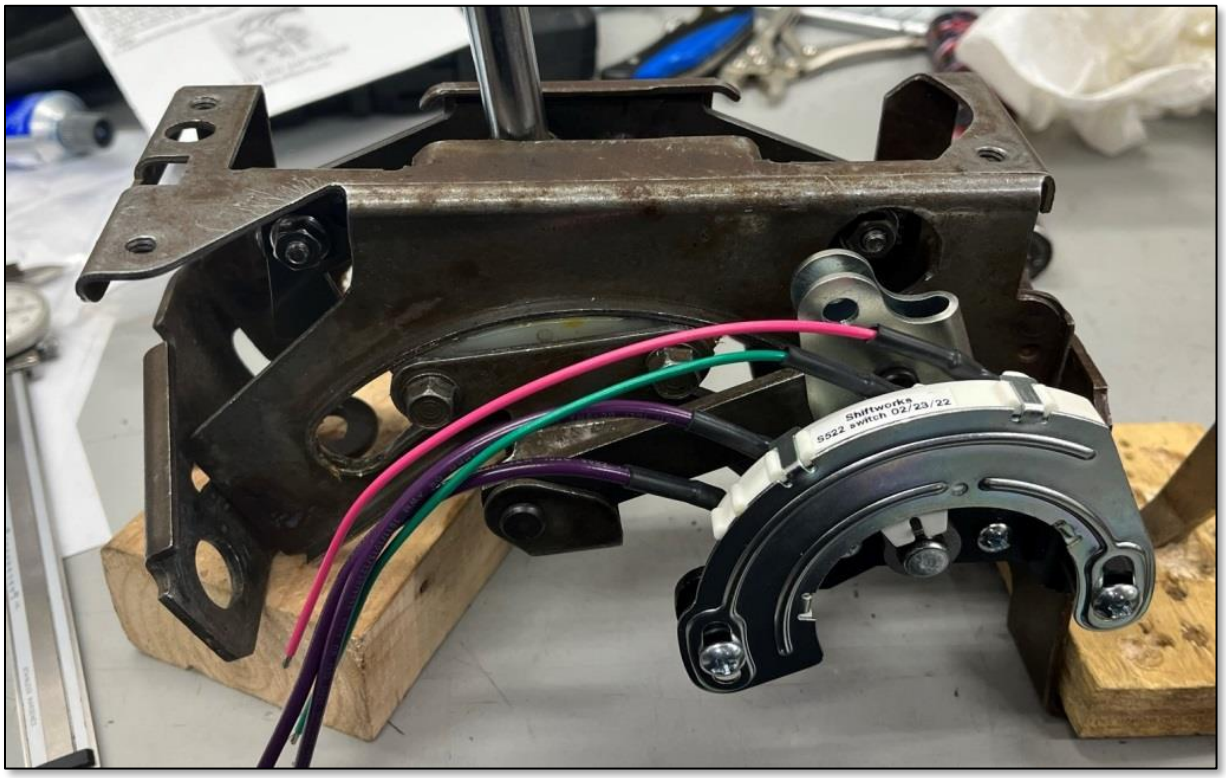

Photo 8: The shifter assembly showing the easily installed neutral safety switch from Shiftworks

The neutral safety switch relocation kit from Shiftworks comes with clear instructions and is easy to install. The only thing left to do after reinstalling the shifter is to extend the backup light and neutral safety circuit wiring from the base of the steering column over to the new switch. Reinstall the console and you're done. The column/ignition interlock action now operates smoothly with no drag or restrictions, and the neutral safety and backup light functions work perfectly.