
Subject: Column shift transmission gear indicator repair
Posted by [Wayne Parham](#) on Tue, 27 Aug 2024 18:17:20 GMT
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This note describes a way to repair the column-shift transmission gear indicator in a 1968 Impala.

I searched for replacement parts and found none. Not even good used parts, which is probably OK since the age of the parts would have been problematic. I would have ended up with the same defect that caused the need for repair.

There are some photos at the end of this document to help you see what we're working with.

The shift indicator is a red "needle" that is spring-loaded to one side, with tension pulling the indicator towards (and past) "Park" on the dashboard gauge printed behind the needle. There is a stranded stainless-steel wire that is connected to the indicator needle and that is positioned to run down to the steering column, where it attaches to the shift lever. Movement into gear rotates a section of the steering column, which pulls the stainless wire and deflects the indicator to position it to show the correct gear. The wire attachment to the rotating steering column section is adjustable to fine-tune and set the needle indicator so that its display is accurate.

The situation that caused defect, in my case, was that the wire passes through a plastic sheath that was brittle and cracked. This allows the cable assembly to kink, which creates too much friction for the stainless cable to easily move within the sheath.

My first attempt to repair the cable assembly was to apply E6000 glue around the breaks in the sheath. This didn't work because the whole sheath is brittle. A fix in one spot doesn't protect the areas adjacent to it. I tried this process with and without external "splints" to strengthen the broken section(s).

My second attempt was to purchase actuator wire used for servo control in model airplanes. This attempt got me closer because it is actually the same approach. But the products I chose were too large. They were intended for a larger load, and they didn't want to bend at the smaller radius required by the indicator cable in the car.

My third attempt to fix the cable assembly was to replace the entire sheath with new material, using the insulator of 14-gauge electrical wire. This got closer to the goal. I could easily position the cable assembly with the bends required. However, the friction was too high when put into position. The cable worked when it was held straight, but when curved into position to run through the dash to the steering column, it no longer moved the indicator because the friction was too great. The insulator was rubber, after all, and was not designed to reduced friction. It was designed to provide electrical insulation. So it wasn't the right material for the task I was trying to use it for.

One more notable mention about this attempt: By this time, I had learned that I could desolder the cupped end that attaches to the rotating part of the steering column. This is required for the repair, because the small stainless-steel wire must be pushed through the sheath. To do that requires the cupped end of the cable to be removed, the wires pushed through, and then the end

of the cable must be re-attached.

I found that a normal 40-watt soldering iron worked fine for this task. The cupped end could be desoldered easily, and it could also be re-attached with just a few seconds of heat from the soldering iron to melt the solder and insert the wire. I tinned the iron with a little bit of electrical solder, but this was just to improve heat transfer. No extra solder was required to flow into the joint, and in my case, no extra flux was needed either.

My third attempt showed me that I was close to finding a solution - which was to purchase a short section of small diameter nylon tubing. After cutting it to the proper length, I removed the cupped-end terminator of the stainless-wire with the soldering iron, ran the wire through the nylon tubing and re-attached the cupped end by heating it and pushing the wire back in.

That worked perfectly!

I will say a little more about the soldering process. The first time I desoldered the stainless-steel wire from the mounting end, I was able to reinsert it easily. But the second time, it had begun to fray. Actually, only one strand had pulled away but that bothered me. I wanted full strength and didn't want to lose even a single strand.

So I twisted it - much like I might have done to a copper stranded wire before soldering it to something. But that didn't really work well, and tinning it with electrical solder didn't work well either. As I said above, I added no solder and no flux - largely because it wouldn't accept it. I'm guessing the solder and flux used at the factory was not the same as used for electronics, but more like what is used for radiator repair - an acid flux core product instead of the rosin core stuff I was using.

What I did about the fray was to cut back the end of the stainless-steel wire just a little bit. I only needed to cut it back about 1/8" and that was enough to get past that one frayed strand. When I heated the cupped mounting end for a few seconds, I could press the wire back into it with all strands inserted. It cooled in a second or two and was perfect.

One might try this process with acid core solder, but I didn't need to do that. If you think you need additional solder, you might try that, but I didn't need it.

Photos below:

I purchased an instrument cluster to help me work out what I needed to do to fix the shift indicator. At the time I purchased it, I hoped I might be able to use some of its parts. But honestly, there was nothing I needed from this. It ended up just being useful as a way to work things out.

Disassembled instrument cluster, showing indicator "needle"

The seller had cut the signal wires and the shift indicator cable, so you cannot see the other end, which is where I did my soldering. But you can see the needle indicator and the spring loading here. You can also see the small routing bracket that is used to hold the cable and bend it 90-degrees to exit downward.

Gear selection panel, mounted right behind indicator needle

This panel is mounted right behind the indicator needle, and holds it and the routing bracket in place. My car uses a Powerglide, so only has Low and Drive labels. This panel shows L1 and L2, so it obviously came from a three-speed car. That may be of interest to anyone that wants to swap in a TH350 or TH400.

2mm nylon hose used as "sheath" for wire to pass through

This is the material I used for the "sheath." It allows a low-friction passage for the stainless-steel wire.

Rear of instrument cluster, showing lights, wires and connector

While you've got this instrument cluster out of the car, I might suggest replacing the light bulbs with LEDs. They're 194 bulbs and you can get compatible bulbs using LEDs in various colors. I used a combination of white and blue for backlighting - alternating each one - to give the dash a light blue glow. I used red for all the warning lights and green for the turn signals. The headlight "bright" indicator has a red filter on the console, but I used a white bulb for that position. Made the indicator just a little softer.

There is also a replacement for the mylar "circuit board" if yours is damaged in any way. If the connector contacts are starting to fray, replace that. Once we're done with this instrument cluster, we don't ever want to have to go back into the dash, if we can help it.

File Attachments

- 1) [20240824_104056.jpg](#), downloaded 67 times
 - 2) [20240824_104126.jpg](#), downloaded 65 times
 - 3) [20240824_104259.jpg](#), downloaded 70 times
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