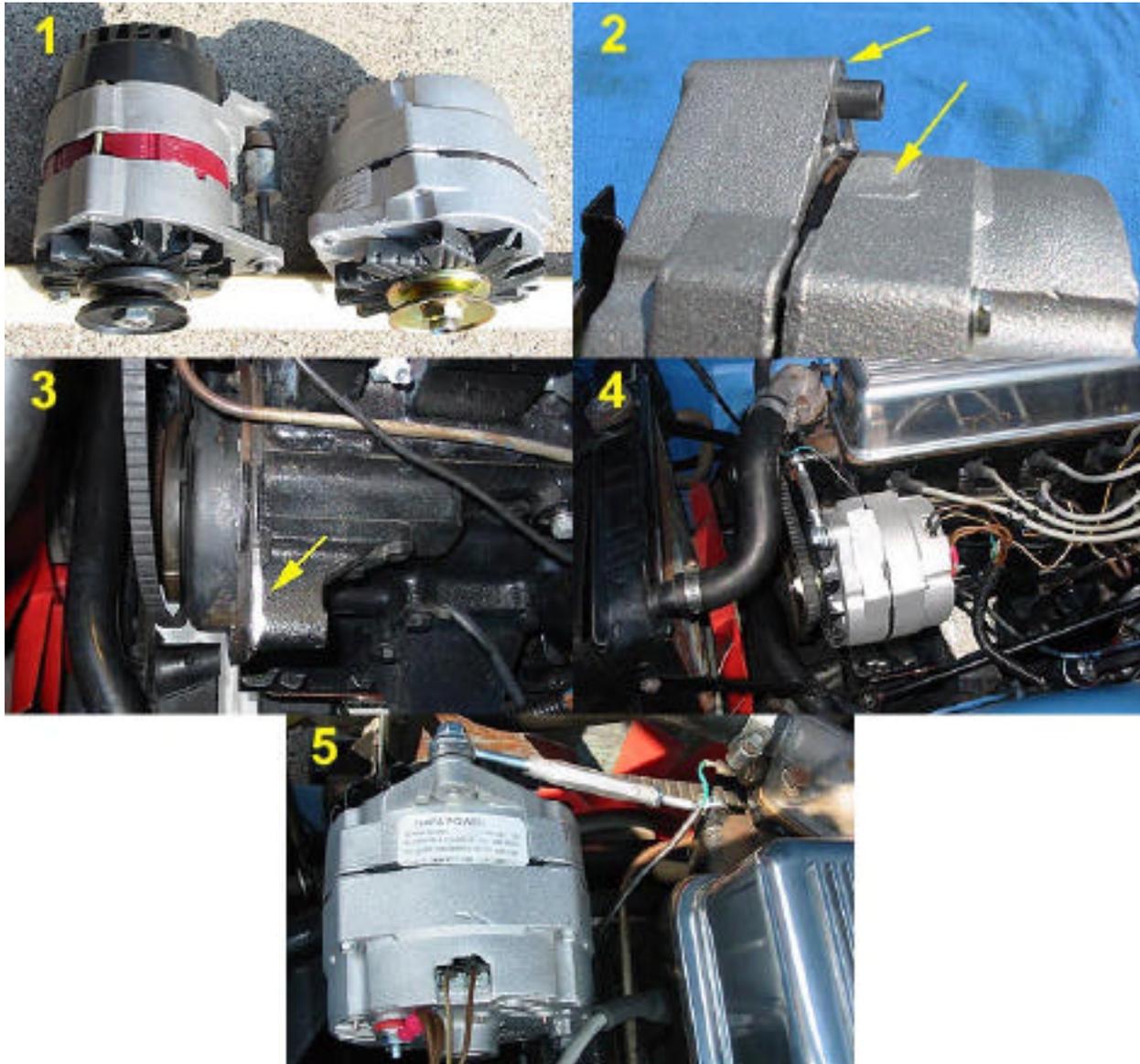


## Six Step Lucas to GM/Delco Alternator Swap for under \$50

By George Pasek

While I have read about using a GM/Delco alternator as a replacement for the Lucas, I have not run across a "How To" step by step write-up. So, after the installation of one in my '73 TR6 turned out to be so easy I thought I'd pass on what I did... Step by Step.



STEP-1 Find a Alternator.

PHOTO-1 Many of the sights that talk of this swap say to use the GM # 7127 SI type. Apparently there is a number of configurations available and basically they are all the same with variations on the output and connections. I found that the one listed for a 1974 Chev Camaro w/350 V8 had a 63 amp output and would fit my needs perfectly. The NAPA part number was RSE 213-4011 but the connections were at the 3 o'clock position. I preferred the 12 o'clock position so he gave me the 4011A. I chose to go with the 12 o'clock because it would be easy to

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get at them if I needed to check/test it. The 3 o'clock would have put them too close to the engine and spark plug wire, 6 o'clock would be harder for the testing, and the 9 o'clock would probably get me tangled up if I have to reach down there for some other work. Just don't wash the engine without covering up the alternator.

### STEP-2 Make a Bushing.

The alternator has a 3/8" hole for the pivot bolt whereas the mount on the engine is 5/16" so either the mount on the engine has to be drilled out to 3/8" or a bushing has to be made/bought to reduce the hole in the alternator to 5/16". I chose to make a bushing. I went to the local hardware store and bought a 1/8" x 4" Galvanized Pipe Nipple, cut it in half, drilled out the inside to 5/16", chucked it up in my drill press and using a flat file turned down the outside to 3/8", finally putting it in a vise and cutting it to 1-1/2" in length. I started with the 4" nipple because that gave me two shots at getting it right. Another idea is to find a place that sells bearings and motor parts and look for a "Shaft Adapter Bushing". One catalog I grabbed showed them in the 5/16 ID x 3/8 OD by 1-1/16" long for \$1.14. A couple of these should work just fine.

### STEP-3 Prepare Alternator

Remove the Lucas alternator from the engine and hold the Delco in place. You will notice the Delco sits too far forward due to the casting for the pivot being too wide. Note PHOTO-2 and you will see that you will have to cut off the additional casting flush with the rest of the front cover. Also on my Delco there was a small knob of casting on the rear cover that I also trimmed off. This cutting was done with a hack saw and the Delco clamped securely in a bench vise. I put a piece of tape across the two covers to prevent the cuttings from getting inside the alternator. Also in PHOTO-2 you can see part of the bushing discussed in STEP-2 above which I left protruding for the photo.

### STEP-4 Trim Engine Front Plate

So now you should have the Delco ready to go and the reducer bushing installed. Mount the Delco to the engine using a 4" 5/16 bolt. Rotate the alternator up towards the engine and attempt to put on the belt. If it was like mine, it won't fit. I had two choices here, get a longer belt, or trim down the edge of the engine plate that is preventing the alternator from rotating closer to the engine. Changing the belt at this time was not a option because the steering rack was in the way so I opted to trim the plate. Note PHOTO-3. I used a grinder and trimmed down the plate flush with the cast alternator mount on the engine. Now my alternator rotated towards the engine enough to fit the original belt. You may want to give the trimmed plate a shot of black paint to keep it from rusting

### STEP-5 Finish mounting Delco Alternator

So now the bottom of the Delco is bolted up and the fan belt is on, now comes the tensioner. I was originally planning to make a bracket but then I got the idea to try using a 1/4" x 7" turnbuckle and that worked great and was a lot less work. I used a 5/16-24 x 3" bolt on the engine side to accommodate the thicker turnbuckle and washer, and after these photo's were

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taken I put in a 1-1/2" metric bolt on the alternator end which allows a nut/lock/flat on the back side.

### STEP-6 Connect it Up and Make it Work

PHOTO's 4 & 5 show the finished product. On my '73 I had what I suppose is called a 4 wire hookup. I had a plug-in connector with 2 large Brown wires and a small Brown/Yellow, and a separate small Brown wire with a stake-on connector that plugged into the Lucas separately. The two large Brown wires are the power to the battery and were connected together inside the Lucas, so I crimped/soldered them to a single eyelet connector and attached it to the Delco output screw terminal. The small Brown/Yellow wire is the field excitation wire which comes from the dash charge indicator lamp and is connected to the #1 terminal on the Delco. The remaining small Brown wire is the voltage sensing wire and it goes to the #2 terminal.

So, that's it. Maybe I just got lucky on my installation, but there was no alignment of the Delco to the belt required. I figured that I would have to maybe file off more of the alternator bottom pivot mount or add some shim washers to get the pulley true with the engine pulley's but everything lined up just as if it was "Made To Fit"... What a Deal!! I will probably in the near future run a new larger wire from the Delco output to the battery because now with a monster 63 amps of current there is the possibility of overloading the smaller wires charging a weak battery.

### Parts List:

Delco Alternator, NAPA RSE2134011A	\$34.89
1/4 x 7" Turnbuckle	1.99
1/8 x 4" Galvanized Pipe Nipple	1.99
Nuts, Bolts, Locks, Flats, Locks	4.47

Total \$43.34