

Gauge Replacement Bracket Instructions

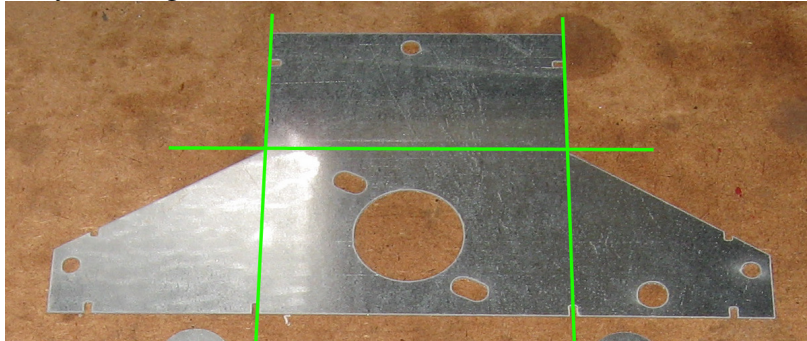
Part 1. Bracket Prep

The fun starts with bending the brackets. All the bends are marked with natural corners on the brackets, or with notches. Attention needs to be paid, however, to the direction of the bends, as in some cases the direction of the bend will depend on the year of your truck.

*** It is possible to bend the brackets by hand, or with a wrench, but your bends will be ugly. I recommend clamping two pieces of scrap flat stock on both sides of the bend. ***

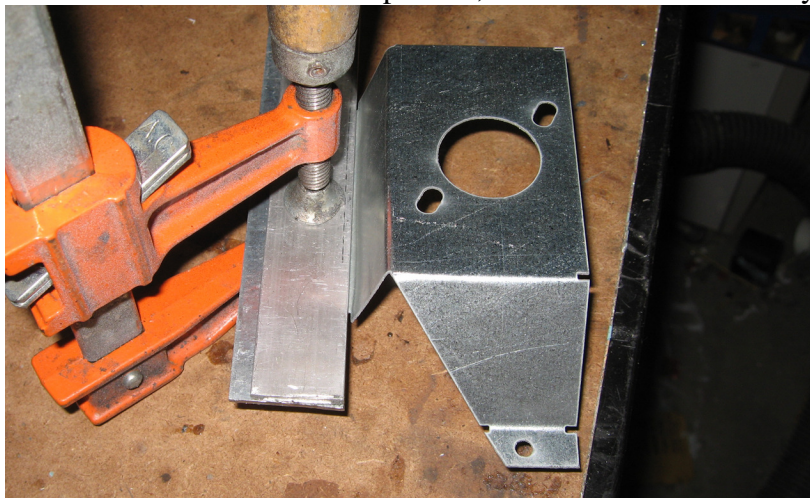
Speedometer Bracket

Orient the bracket so that the oblong fastener slots are positioned at 10 and 4 o'clock, and bend **away** from you along the lines shown:



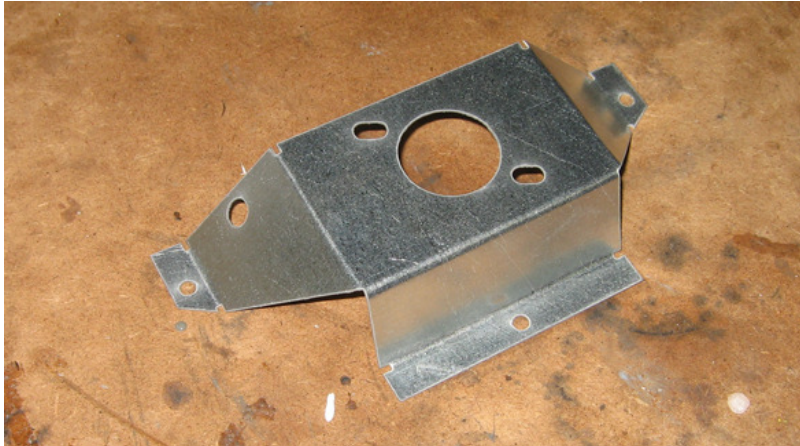
Do not worry about the angle of the bends for now, it can be easily corrected by hand during installation. Aim for $\sim 45^\circ$ for the sides, and nearly-but-not-quite 90° for the back.

Then fold the tabs at the end of each leaf upwards, at the location marked by the notches:



The completed bracket will look like this:

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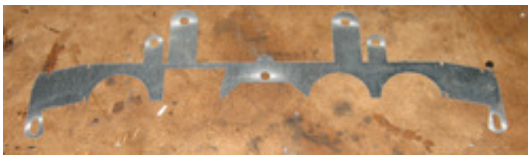


Gauge Mask

The gauge mask includes a special shaped cutout for the stock fuel gauge. The position of the gauge varies from early to later years, moving from the inner right position to the inner left, so verify your location before bending.

Early Clusters (no turn signals in speedometer):

Note: orientation shown is for a right hand fuel gauge.



Bend the small tab upwards 90°, and **bend the larger tab back and forth to break it off**:



Proceed below.

Late Clusters (with turn signals inside speedometer):

Note: orientation shown is for a left hand fuel gauge.



Bend the small tabs upwards 90° and the larger tab upwards just slightly:



Then bend the ends of the large tabs back to flat:

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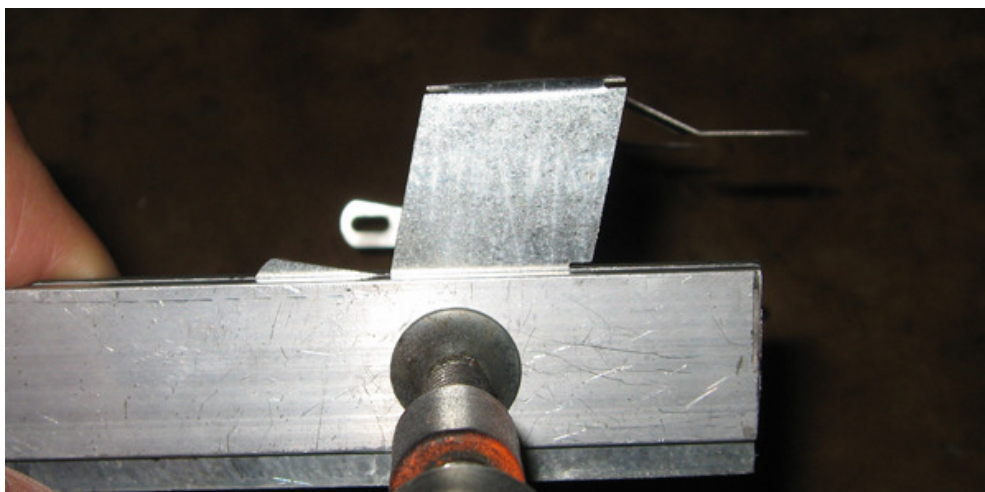


Proceed below.

Bend the ends of the bracket upwards 90° at the inner set of notches:



And finally bend the outer tabs down between the outer notch and the corner:



The completed bracket should look like these:

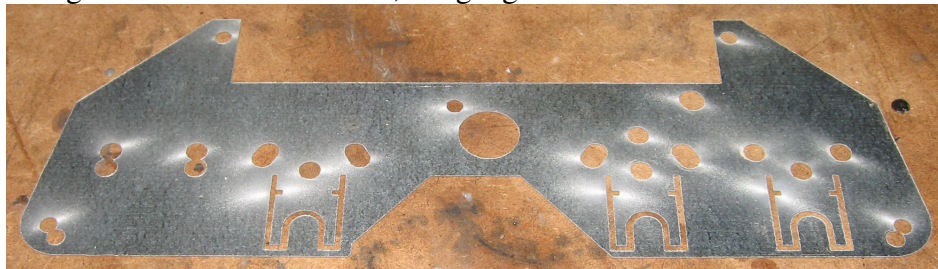


Paint the gauge masks with flat black paint (I like Rustoleum). It is only necessary to paint the outer surface:



Gauge Brackets

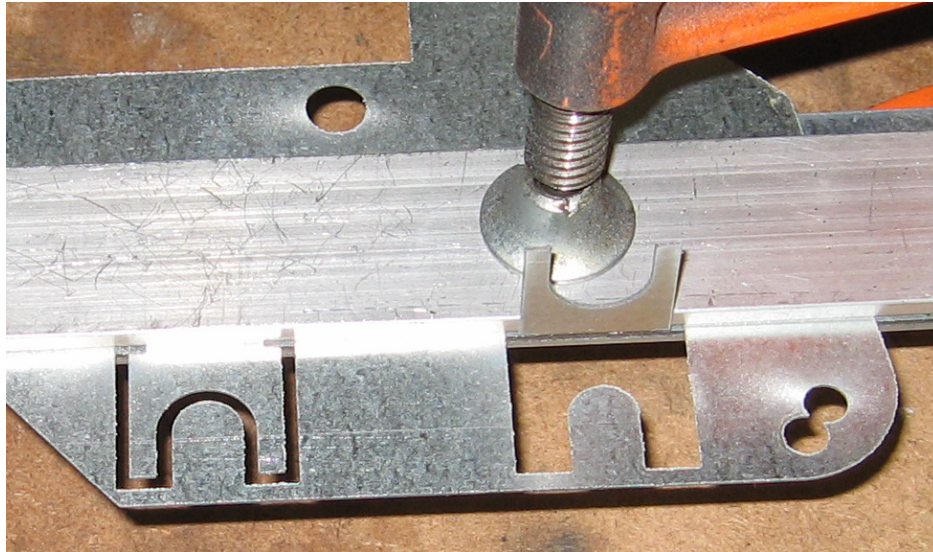
When looking at the rear of the cluster, the gauge bracket will install in this direction:



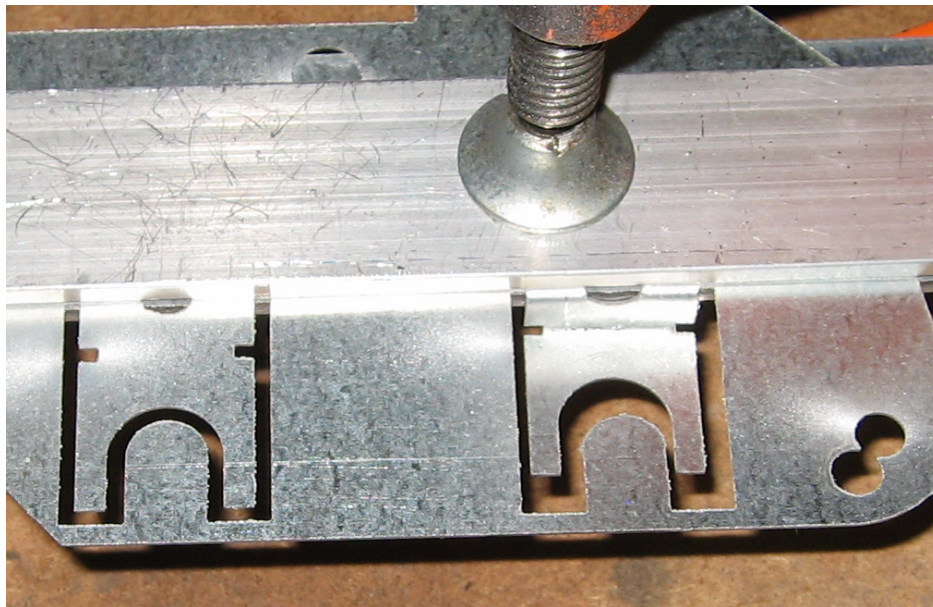
Note the “simple” pattern on the left of this photo (the right side of the cluster, if looking from the cluster face) for the voltmeter/ammeter, which is always located on the right, regardless of year.

For locations where a mechanical gauge (oil pressure or water temperature) will be installed, the mounting tabs need to be bent as follows:

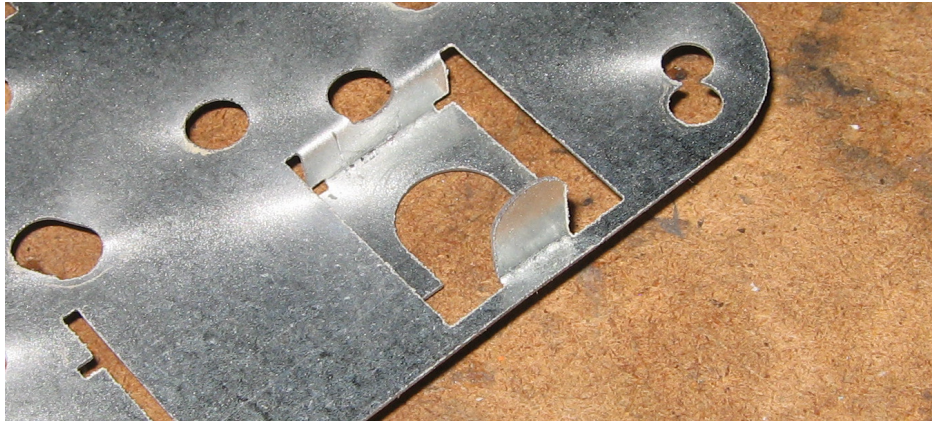
Looking at the back side of the bracket, bend the mechanical gauge mount upwards at the lower set of notches:



Then bend it back down at the upper notches. This creates a Z-bend that lowers the mounting tab into the gauge cluster:



Lastly, bend the “extra” tab up out of the way:



No bends are needed for locations with an electrical gauge (including the voltmeter/ammeter with the mechanical gauge set).

Part 2. Gauge Prep.

The gauges must be freed from their original enclosures to be of use. The procedure is the same for electrical or mechanical gauges (example shown is a mechanical gauge):

Start by removing all the fasteners from the rear of the gauge:

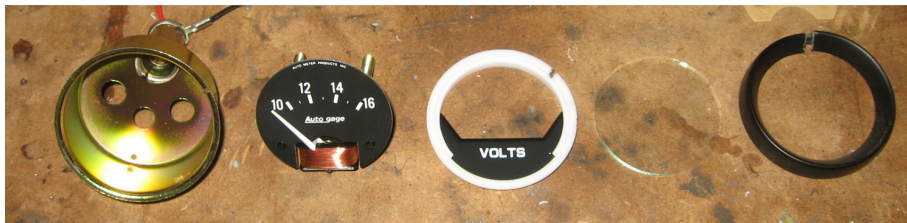


Make a single cut through the gauge bezel with a Dremel tool or hacksaw:

Make a single cut through the gauge bezel with a Dremel tool or hacksaw (If you ordered a Full Set, I'll have made these cuts for you, but left the gauges assembled to protect them for shipping):



Remove the bezel by simply popping it off and extract the gauge contents. Save the fasteners and the “guts”, everything else can be discarded.



Mechanical water temperature gauges cannot be extracted in this way, as the sealed capillary tube fitting will not pull through the housing. You must make an additional, larger, cut, being careful not to damage the tube:

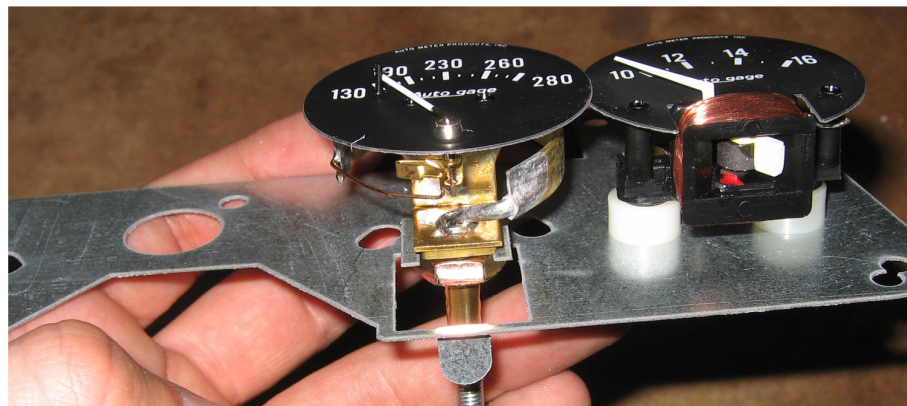
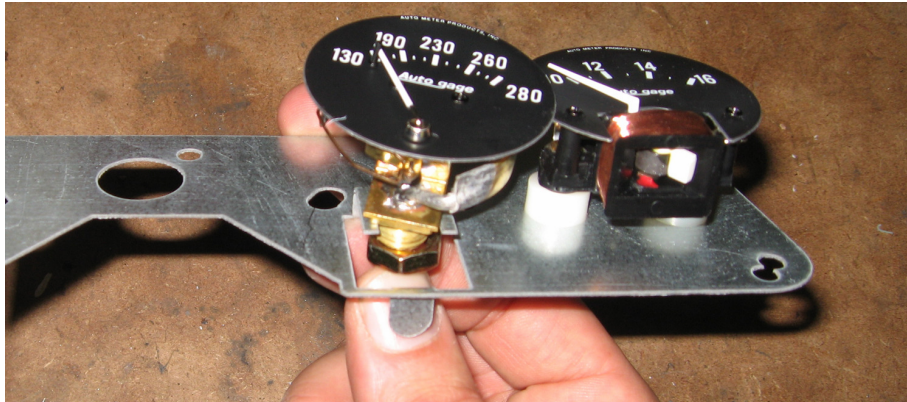


Part 3. Gauge Installation

Mechanical gauges will install directly into the bracket, while all electrical gauges require spacers and insulators.

Mechanical Gauge Installation

Simply place the gauge into the gauge bracket and secure it with the large nut that originally secured it to the Autometer housing:



The gauge is properly located when it sits fully into the curved pocket in the mounting tab.

Electrical Gauge Installation

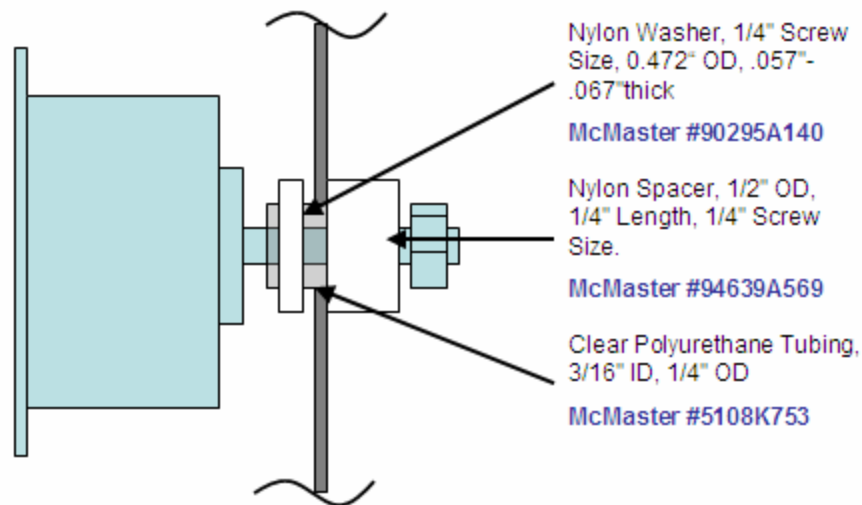
Depending on the gauge, an assortment of washers, spacers, and insulators are required to achieve the proper spacing. If you ordered a “Full Set”, the following McMaster part numbers are included in proper quantities:

- [5108K753](#) Abrasion-resistant Clear Polyurethane Tubing, 3/16" Id, 1/4" Od, 1/32" Wall Thickness, 25'l
- [94639A569](#) Nylon Unthreaded Round Spacer, 1/2" Od, 1/4" Length, 1/4" Screw Size
- [90295A114](#) Nylon 6/6 General Purpose Flat Washer, Off-white, No. 8 Screw Sz, .500"od, .037"-.043"thk
- [90295A140](#) Nylon 6/6 General Purpose Flat Washer, Off-white, 1/4" Screw Sz, .472"od, .057"-.067"thk

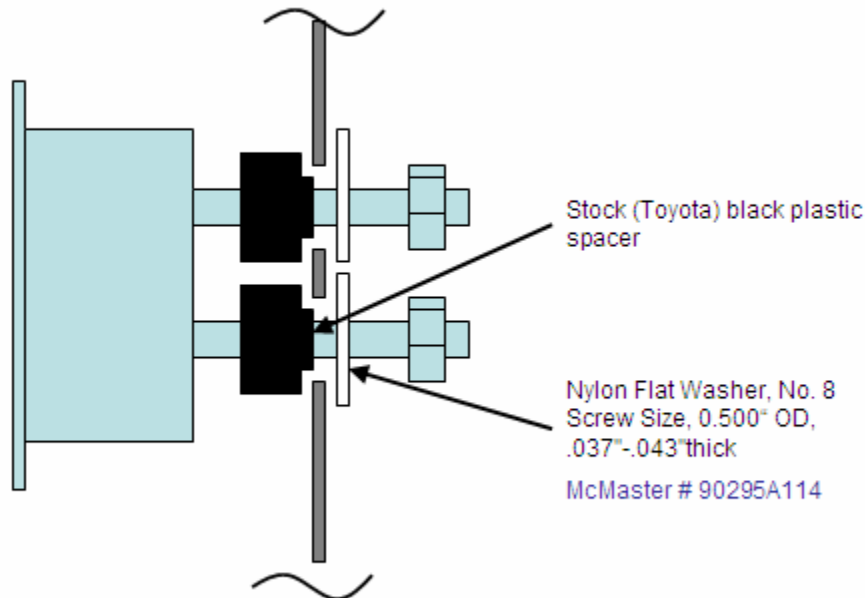
If you didn't order a full set, but don't want to buy the above parts in large quantities from McMaster, contact me, I'll sell a "hardware kit".

In general, the spacer stackup for each gauge type is as follows:

Early Fuel Gauge (Two-post style)

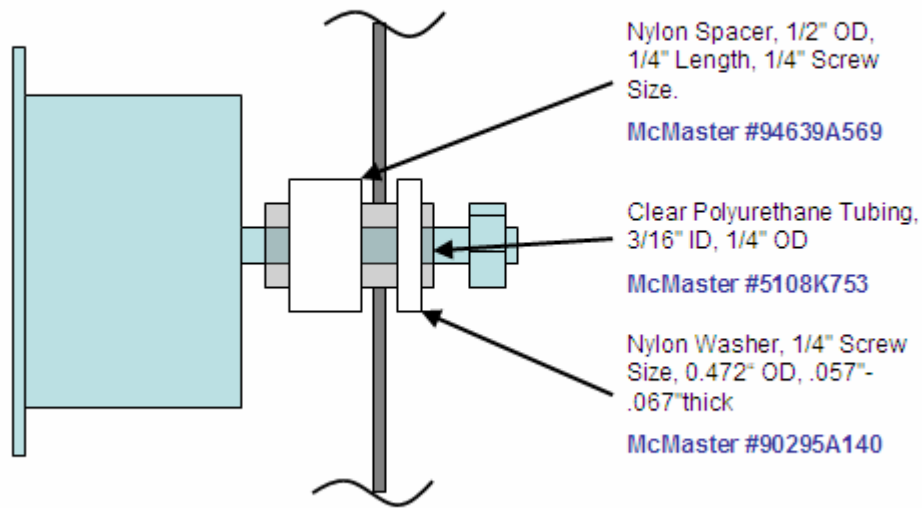


Late Fuel Gauge (Three-post style)



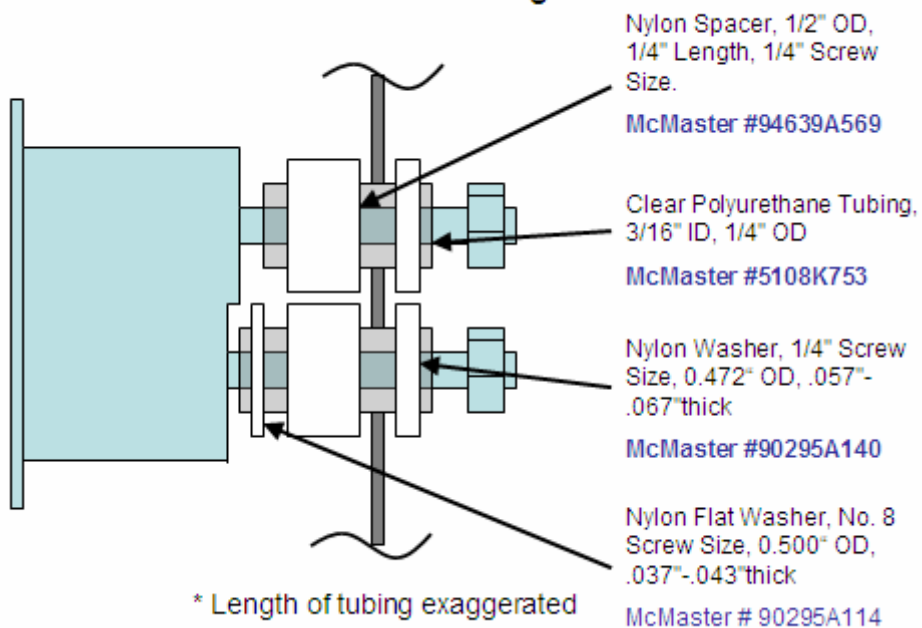
* Length of tubing exaggerated

All Voltmeters and Ammeters



* Length of tubing exaggerated

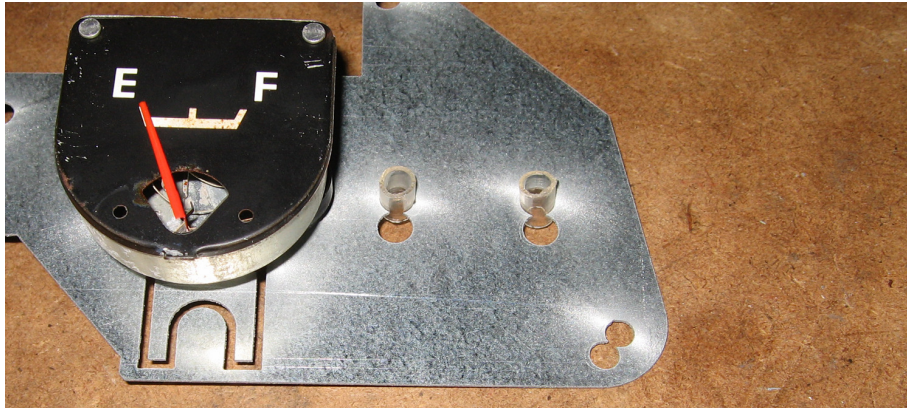
Electrical Oil/Water Gauges



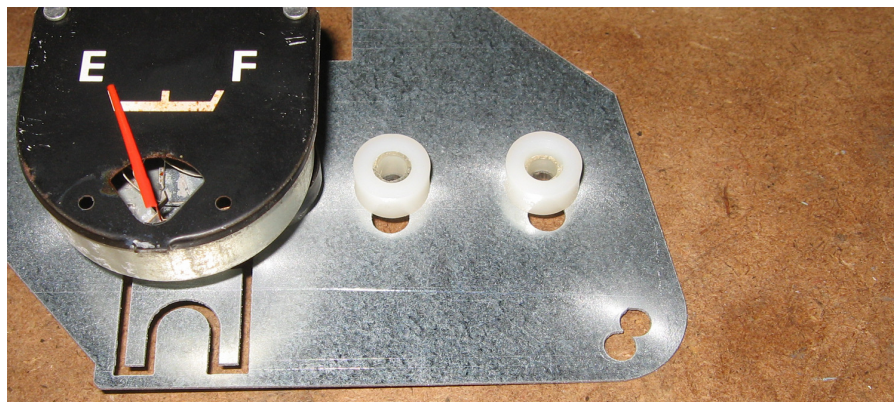
* Length of tubing exaggerated

The installation procedure is usually best accomplished as follows:

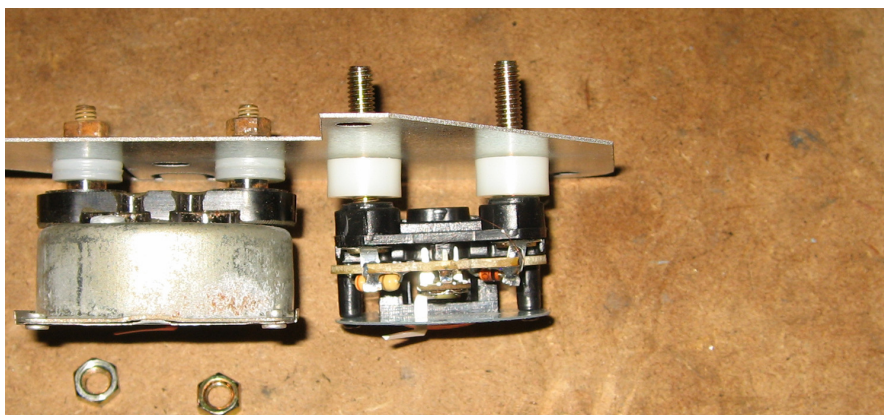
Insert the insulation tubing into the gauge bracket:



Slip any spacers or washers on the inside of the bracket over the tubing:

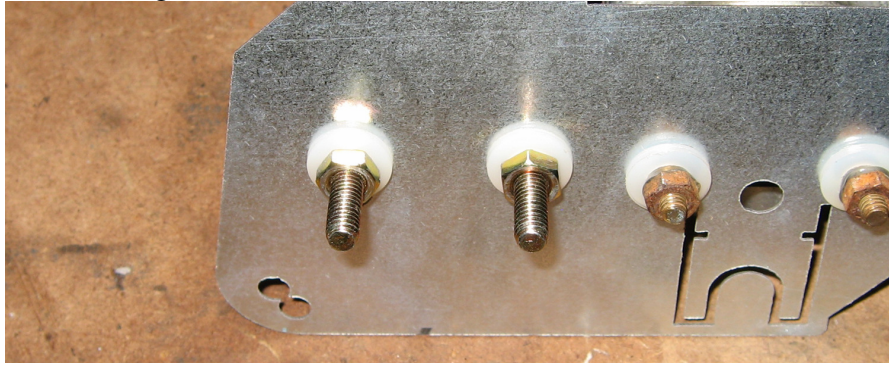


Install the gauge:



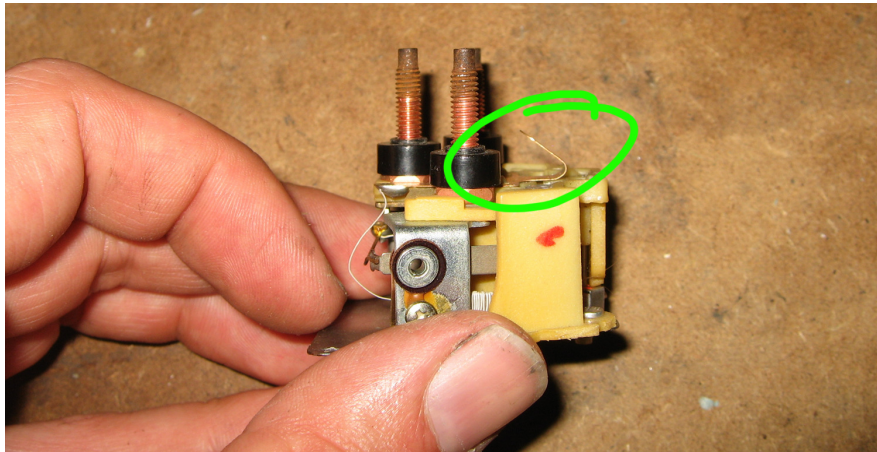
And lastly, the backing hardware:

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Important Late-style (3-post) Fuel Gauge Note!!

You MUST ensure that the small copper tab on the back of the fuel gauge makes contact with the gauge bracket; you may have to bend it outward slightly. Failure to do so may burn out the gauge – the copper tab provides a ground path for the internal mechanical voltage regulator, if not connected the gauge will be overvoltage:



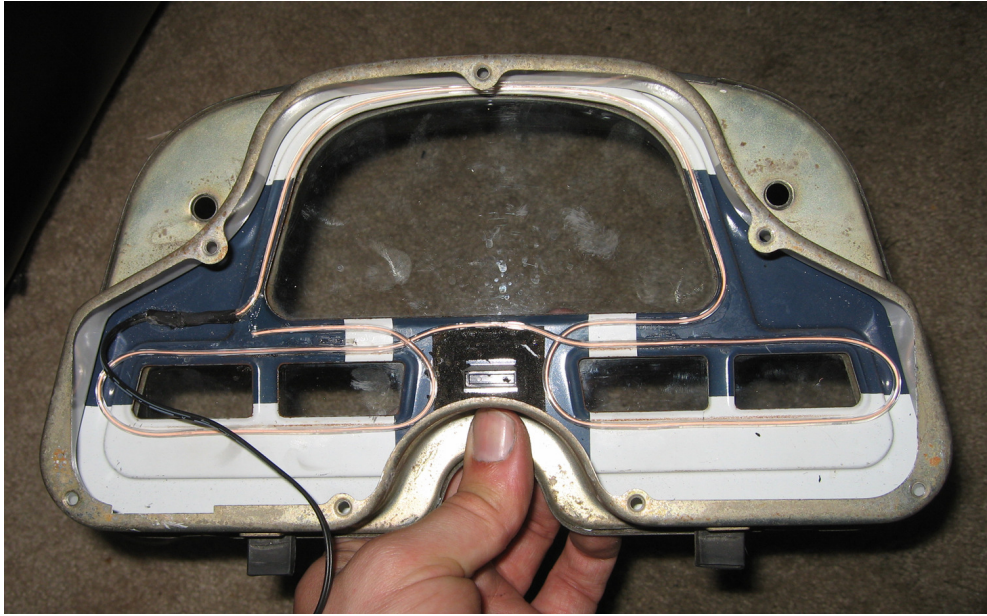
Part 4. Lighting Installation

Regardless of the year of your truck, the kit comes with a wiring harness that includes a 10-pin barrel connector (due to my inability to precisely pin down the changeover date). If you have an early cluster without a circuit board or barrel connector, simply cut the connector off and discard, and splice the wiring into the truck's harness directly.

EL Wire Installation

With everything removed from the cluster, lay the EL wire in as shown. In most cases the wire will follow a natural ridge in the back of the faceplate. Secure it with superglue or cement (the former will be easier to use, while the later will remove cleaner from the

cluster should you decide to go back to stock down the road... although why you'd do that is beyond me).

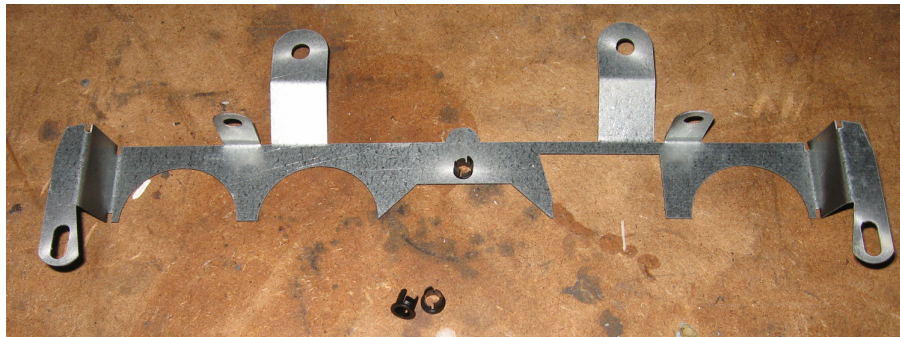


There will be up to 12" of extra wire, simply cut the excess away. You may wish to put a dab of cement on the open end of the wire for waterproofing.

LED Turn Signal/Hi Beam Indicator/Backlight Installation

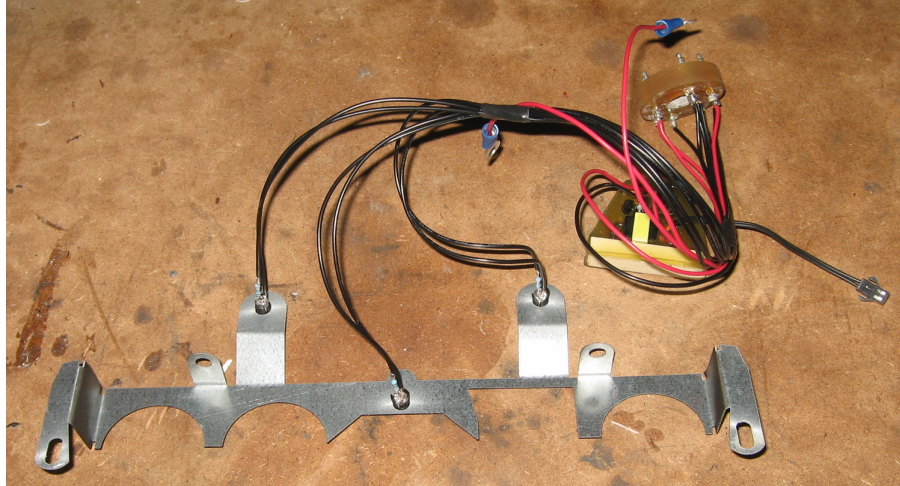
Early clusters will install only the LED panel clips, wait until final assembly to install the lights!!

Install the three black LED panel clips where appropriate (all years: Hi Beam indicator, later years: Turn signal indicators):



The clips install from the front (black) side, just press in.

Then install the LEDs where appropriate. Again, just snap in:



Lighting Notes for Early Clusters:

- Early clusters, without speedometer turn signals or barrel connector – cut the connector off of the included harness and discard. You'll be using the Hi-Beam LED only in the gauge cluster. The Turn Signal LEDs are yours to use in your dash-mounted turn signals if you like, or you can just leave the turn signals alone. If you come up with a way to install LEDs into the turn signal locations please let me know, I'd love to include some info...
- Semi-Early clusters, without speedometer turn signals but *with* barrel connector – I've heard such a beast exists, but haven't seen one personally. I believe the pinouts are the same, but PLEASE DOUBLE CHECK (send me a photo of the board, if need be)!!! You may find you have to cut the turn signal LEDs off in order to connect them to some other harness. Or you can ignore them completely, your call.

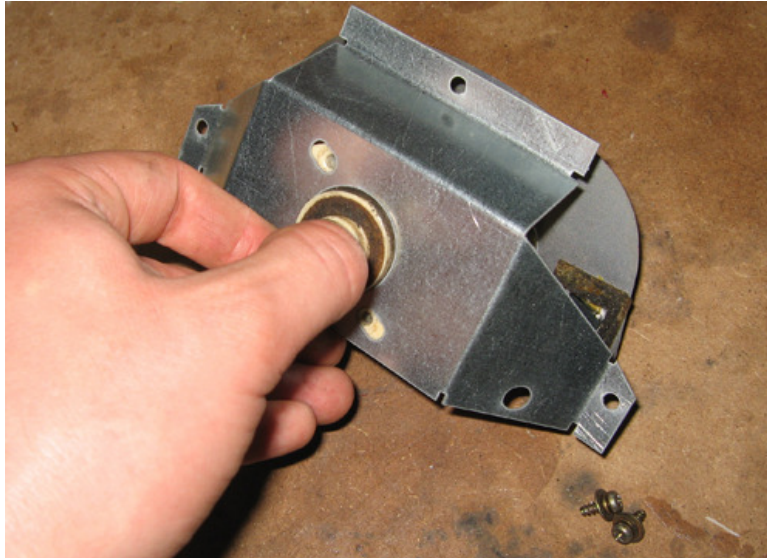
Part 5. Final Assembly

All components install using the new brackets *and the original fasteners*.

Speedometer

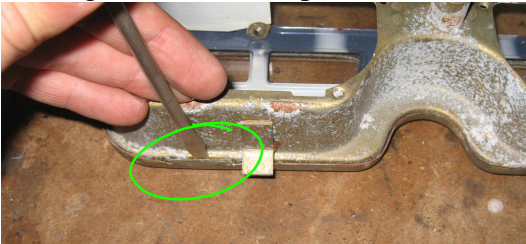
Secure the speedometer in the speedometer bracket with two screws.

Secure the speedometer in the speedometer bracket with two screws. A late-model bracket is shown, however installation is identical for early years.



Early Clusters

Use a screw driver to bend the tabs holding the cluster faceplate on:



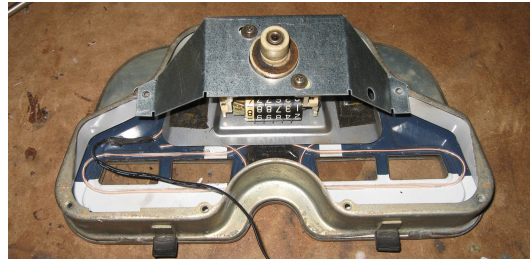
Flip the gauge pod over and remove the rubber Hi Beam grommet:



Then thread the Hi Beam LED through the lamp hole:

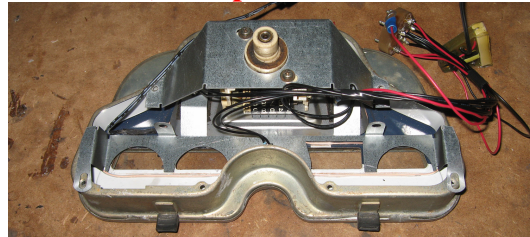
Late Clusters

Set the speedometer into the gauge cluster, but do not fasten.

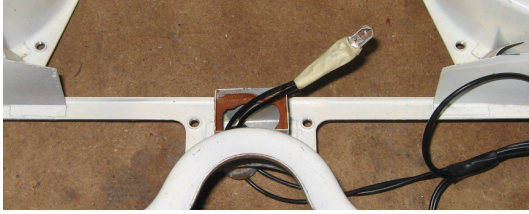


Then set the gauge mask in place as well.

Be careful to ensure that you slip the tab in the center of the gauge mask to rest *behind* (towards the back side of the cluster) the speedometer.



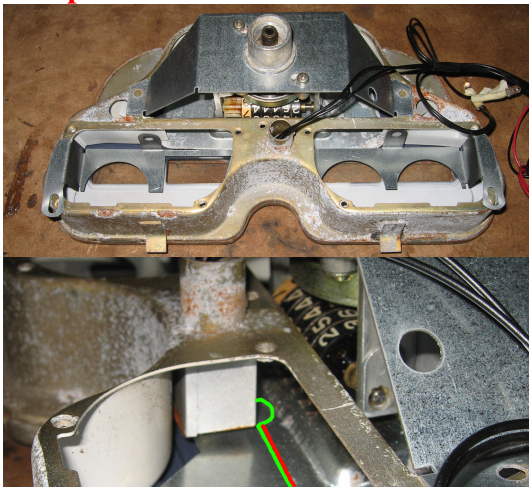
Then thread the Hi Beam LED through the lamp hole:



Install the gauge mask through the *front* of the gauge pod. You'll need to bend it slightly to fit the mounting tabs through the the back of the cluster. Also pop the LED into the mask as you do this:



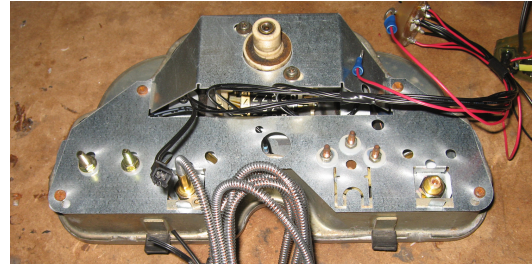
Install the speedometer, but **be careful to ensure that you slip the tab in the center of the gauge mask to rest *behind* (towards the back side of the cluster) the speedometer.**



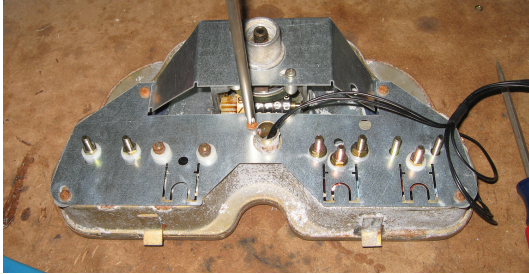
(Tab outlined in green)

Install the gauges and bracket:

Install the gauges and bracket, and fasten everything in place **VERY** loosely until adjusted (see below).



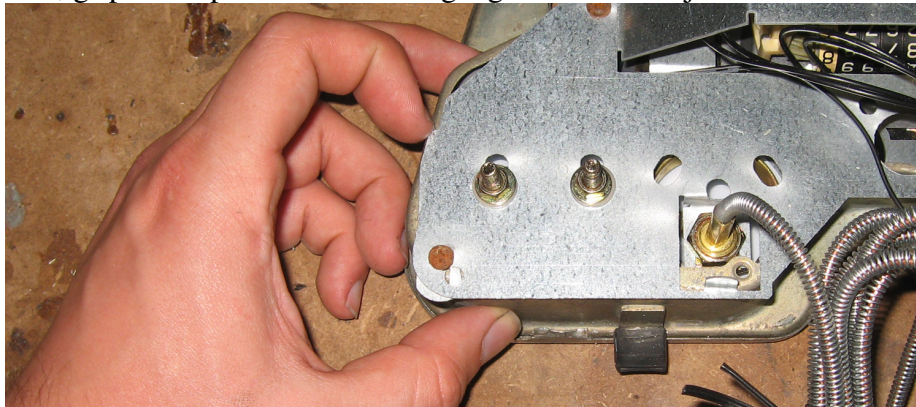
Install the gauges and bracket with five screws. **Don't forget the screw in the center!** Leave all the screws VERY loose until adjustment (see below):



Adjust the Gauge Mask

Have a look at the front of the gauge pod to ensure that the gauge faces are properly aligned with the cluster and the mask.

If they're not, grip the exposed ends of the gauge mask and adjust it:



There is also some adjustment available in the rear bracket itself.

The gauge mask should appear flat in the gauge windows, and be above, but near the numeric markings on the gauges itself.

If the gauge mask is bowing towards the windows in the center of the cluster, remove and adjust it by bending the tabs at the ends inward. This puts tension on the mask when installed:

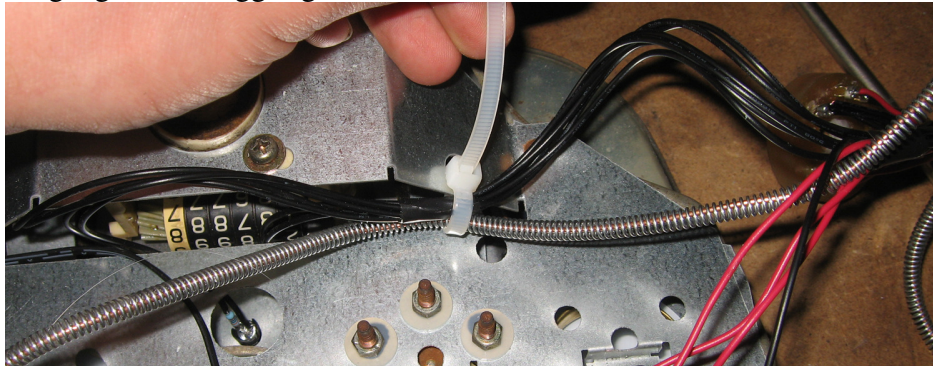


If more correction is needed, you can bend the low edges of the mask, between the gauges, up to create a little standoff. Bend up only about 1/8", do NOT overdo it or you'll end up with gaps by the gauge faces.

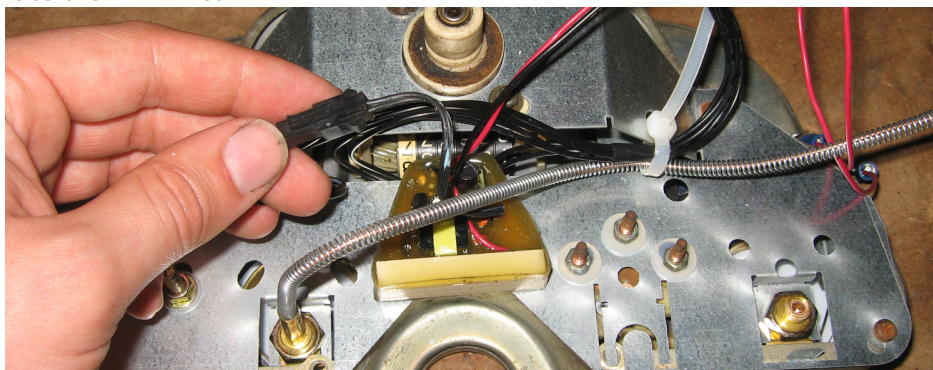


Last Steps!

Use a cable tie to secure the wiring harness to the hole in the speedometer bracket. **Also tie off the capillary tube, if using a mechanical water temperature gauge** – this will prevent the gauge from wiggling as the tube is bent or bounced.

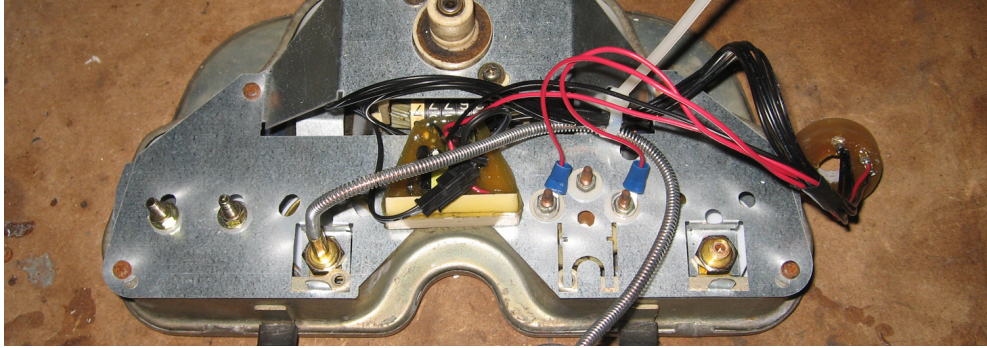


And using the sticky tape, secure the EL lighting controller to the rear of the cluster, and connect it to the EL wire:



Lastly, install the fuel gauge terminals (for a three-post gauge, only the two outer posts are used), and the ground terminal (attach to any of the bracket screws):

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And you're done!!

