

# DIAL IT IN

*Fix and upgrade your factory tach—cheap and easy.*

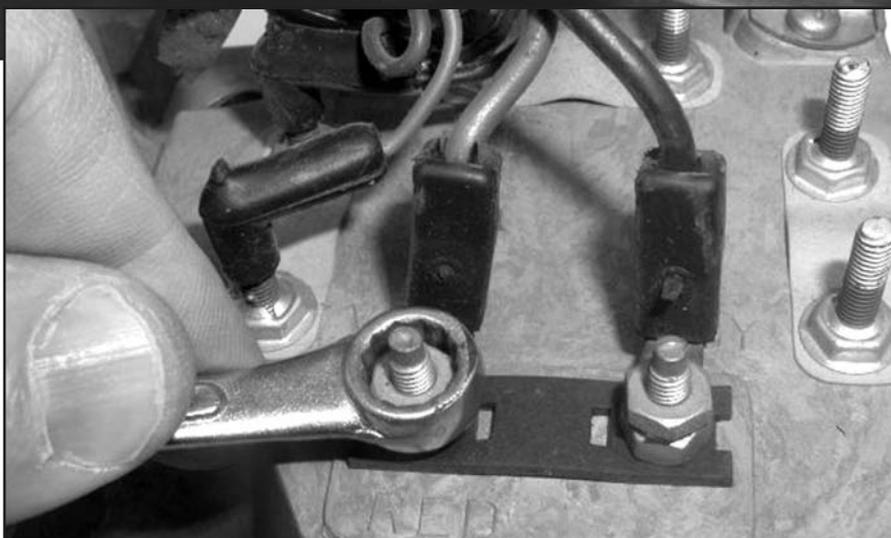


*When to shift? With a 40-year-old stock tach, your guess is as good as ours. But—voila!—with our cool upgrade...*

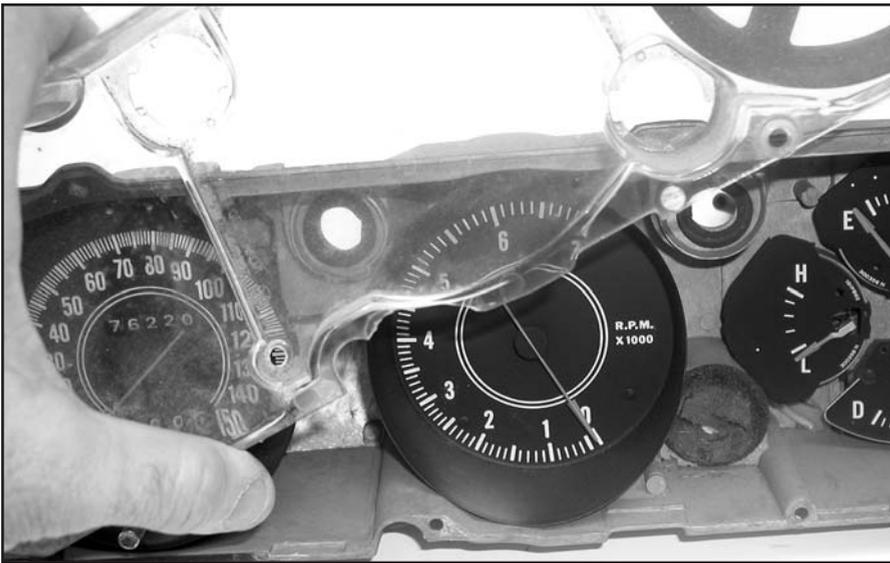
**Story by Richard Ehrenberg**

Photos by Greg Garner and Richard Ehrenberg

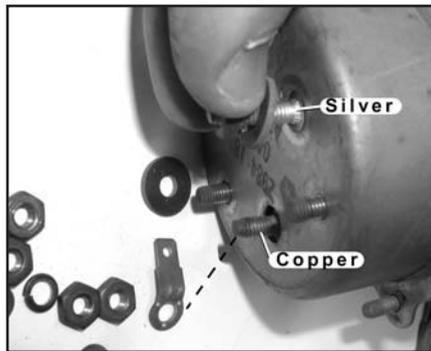
**M**a Mopar was one of the first U.S. automakers to offer a factory-installed tachometer, probably *the* first to install them in sedans. Until 1964, these were all mechanical tachometers (by a cable off of a special ignition distributor). In 1964, Chrysler's supplier, Stewart-Warner, introduced a good-quality solid-state electronic tachometer, which Chrysler soon adopted across the board as OEM. This design used an in-dash (or in-console) display unit (the "meter movement"), and an under-dash mounted sending unit—which contained the actual electronics. This unit was a round copper-colored metal device, which has come to be known as the "sardine can". In 1967, the electronics and display were integrated into one unit, although the actual circuitry was little



**1.** In all "in-dash, integral electronics" instances, i.e., '67-'74, you'll need to remove the instrument cluster from the vehicle. This procedure varies from model to model—if you're unsure, see the FSM. In all cases, there's nothing but "nuts 'n' bolts". One caveat can't be underscored too strongly: Disconnect the battery before removing the ammeter wires (shown). These are unfused (only a high-current fusible link protects the circuitry). It gets ugly real quick if you short one of these to ground with the battery still hooked up.



**2. On most clusters, you'll find a mask and/or lens covering the tach's face. Remove it.**



**3. Now you can remove the three nuts (around the perimeter) that retain the tach and pull it out. Don't remove any of the other nuts at this time.**

**4. With the tach on a padded workplace to avoid scratching the face, remove all 5 nuts holding the guts in the "can" and pull the guts out. Three of the nuts are just mounting, while two hold in a small terminal strip. Note that one stud is shorter, and copper plated—that's the "signal" stud that goes to the ignition coil. The vehicle wire that attaches to this stud is typically grey, it's also the one with the 1/4" Sta-Kon lug under its nut.**

changed.

This basic design remained static until Chrysler switched vendors (to Thomas Faria, of Uncasville, CT) in 1975.

Over the years, these tachs have proven relatively reliable and reasonably accurate. However, as the decades pass, the electronic components age—and the reliability and accuracy begins, naturally, to slip. Or, there can simply be total failure.

Enter, stage right, one Greg Garner, head of Real Time (R/T) Engineering of Springdale, Arkansas. Greg has engineered

a modern digital electronics circuit to replace the antiquated 1964 S-W analog design. Greg sells this setup as a complete circuit board assembly, ready to install in any OEM Mopar tach, 1965-74. There are several versions, covering all factory applications in this period—even one for the sardine can, also including the vaunted tic-toc-tachs. With 40+ years of semiconductor technology improvements at his disposal, Greg's design is able to offer several improvements over the old stuff, making this a worthwhile upgrade even if your OEM tach is working perfectly.

First is response time. Simply put, there's less lag, something you'll immediately notice in lower gears. However, don't expect miracles in this department. While the old S-W meter movement was very rugged and reliable, it's also *heavy*—and the mass must be accelerated as the pointer moves. In our experience, the new circuitry cuts the lag on a fast-revving engine approximately in half.

Secondly is accuracy. While the S-W

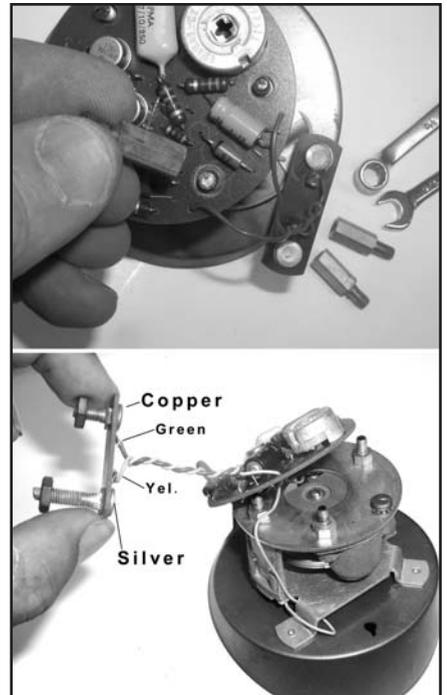
# AD

See Real Time Engineering at the Chrysler's at Carlisle show booth M154/M155. See our website or come by our booth to see our new quartz clock kits. These clock kits can be installed using hand tools in about 1 hour time.

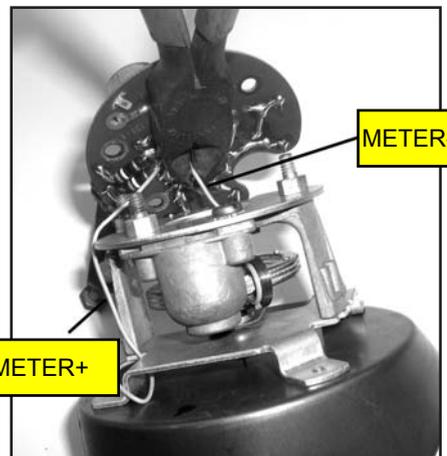
We have the following clock kits:

- 1) E-Body Rallye and non-Rallye
- 2) B-Body standard
- 3) B-Body Tic-Toc-Tac

The clock kits and the tach kits are \$75 each.



5. With the workings removed, the layout becomes obvious. Three 9/32" studs retain the circuit board. Unscrew 'em (top), while taking care that the lower studs don't turn (using a second 9/32" wrench). Pull the circuit board loose, being careful not to yank the wires too hard. Now you can readily see the layout. There are only four wires connected to the circuit board—two to the terminal strip, two to the meter movement.



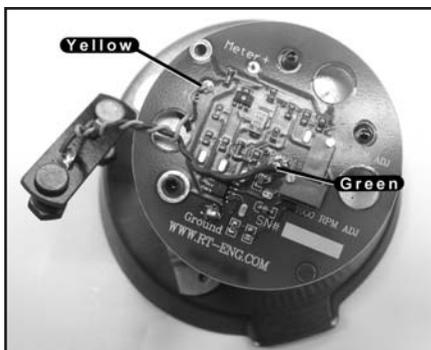
6. Snip off all four wires close to the board using small diagonal cutting pliers. Note that both wires from the movement are the same color. The one closest to the face of the tach is the "+" lead.

setup had one, basic (single-point) calibration potentiometer, Greg's has two. Thus, you're able to make the reworked tach dead-nuts accurate at two points on the scale, greatly increasing accuracy through-

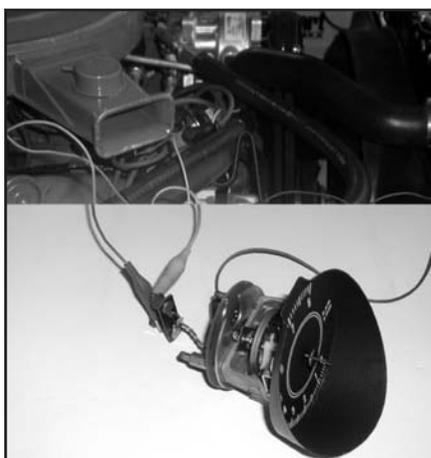
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7. Solder the 4 wires onto the new circuit board as indicated. The terminal strip wires get soldered on the component side, while the movement wires are soldered on the rear.



9. While the new circuit board comes calibrated to factory specs, you can improve accuracy by re-calibrating to your meter movement. Simply connect three wires to the engine of your favorite V-8: Plus 12 volts (to the long stud), ignition coil negative (to the short stud), and ground (the tach's case) to a solid engine ground or battery negative.

out its range. This is really excellent.

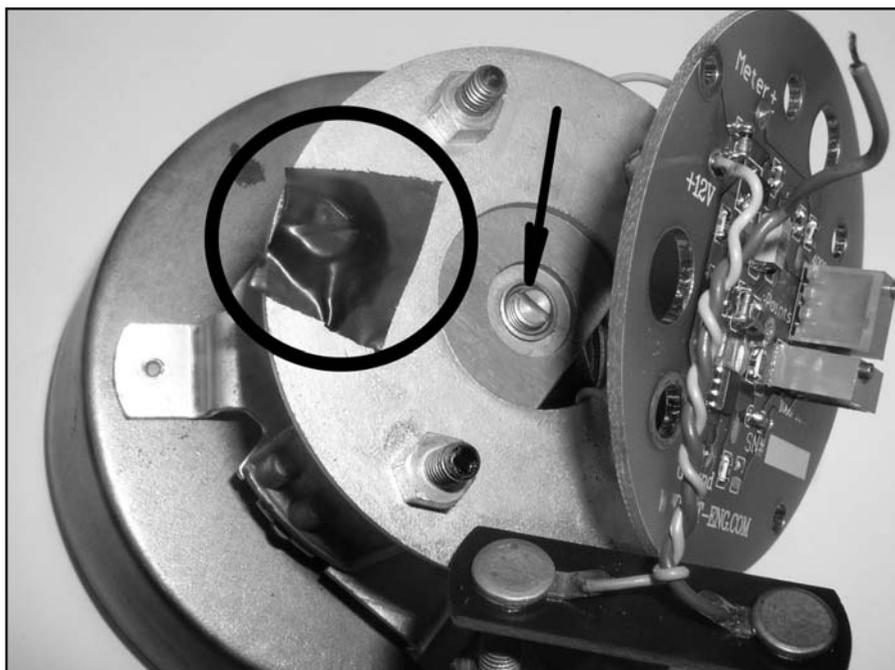
Installation is pretty simple. You will need a low-wattage soldering iron, some 60-40 "radio" solder, a set of small ignition wrenches, and/or a set of nutdrivers. The accompanying pix, as usual, guide the way. Beyond taking the cluster in and out of the car, expect to spend about an hour, start to finish.

The bottom line: In a small way, this upgrade is another in the fun steps we take to bring our Mopars up to contemporary standards, while totally preserving the original, way-cool muscle-era look. ★

### SOURCE

Real-Time Engineering, 19352 Hilton Rd., Springdale, AR 72764; (479) 756-2757; [www.re-eng.com](http://www.re-eng.com)  
E-mail: [greg@rt-eng.com](mailto:greg@rt-eng.com)

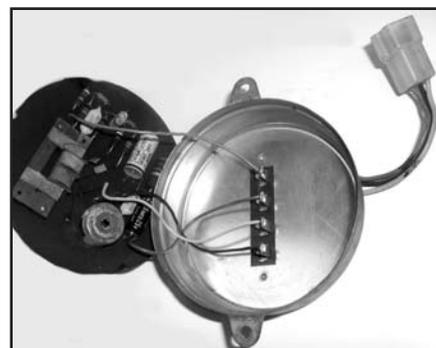
[www.rt-eng.com](http://www.rt-eng.com)



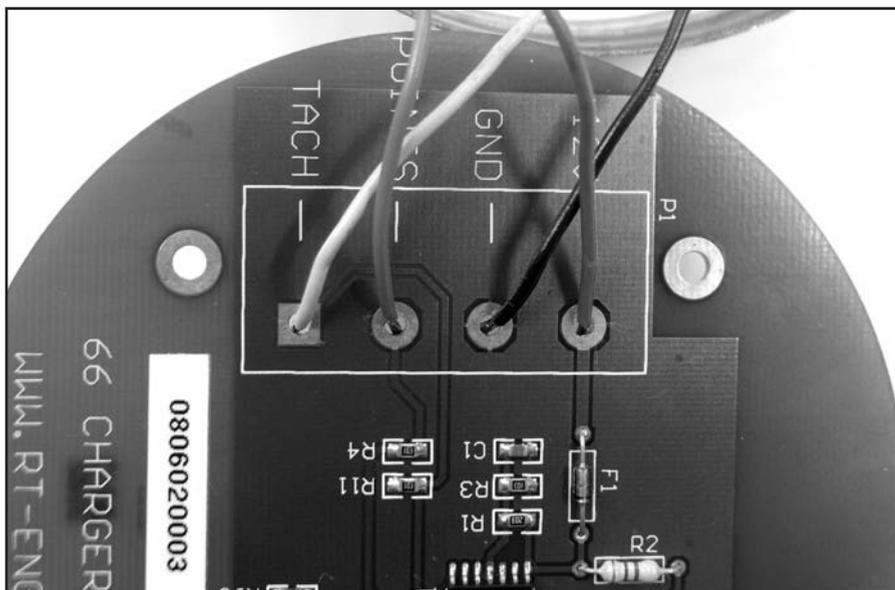
8. The new circuit board installs just like stock. A small piece of vinyl tape over the screw (circled) protects against shorts. If your pointer had seemed sticky, hanging up at times, you might consider loosening—very slightly—the jewel-bearing adjustment (arrow).



10. Now check the calibration at two points: 1000 and 4000 RPM. Turn the small screws to make your tach agree with the reference tach—try to use a good digital tune-up tach, not our cheapo swap-meet analog junk! (In other words, do as we say, not as we do!) Now just bolt it all back together—done!



11. The earlier sardine can (separate sender) units are even easier to convert. A few simple crimps hold the old board in place...



12. ...and all four wires solder in place on one side of the new board. As long as you don't try soldering this stuff with your plumbing equipment, it's a no-brainer!