

TECHNICAL TIPS

ON THE SUNBEAM TIGER

April 1999

UPGRADING THE TACHOMETER FOR USE WITH ELECTRONIC IGNITIONS

One of the frustrating issues related to upgrading your Tiger ignition system are the problems those improvements cause in your tachometer operation. Although a change to a Pertronics point-less trigger system normally causes few problems, a serious upgrade to a state of the art ignition system typically results in partial or complete loss of tach operation. This tip is one way to get your tach back into a more responsive mode. The modifications shown were made on a 7,000 RPM Alpine instrument, but should work as well on a normal Tiger tach.



Figure 1: The 7K Alpine tachometer.

The trick involves substituting a capacitance coupling to drive the instrument in place of the current pulse counting primary wire loop. The starting point is a capacitor in the .0047 MFD to .01 MFD range, rated for at least 12 volts. These are available from Radio Shack or similiar suppliers for about \$.59 a pair (RS P/N 272-134 or 272-130). One side of the capacitor is connected to the secondary of the pickup coil, which is identified by the black wire. The best place to accomplish this is to solder it to the pass-thru connector on the circuit board (see No.1 in Figure 1).

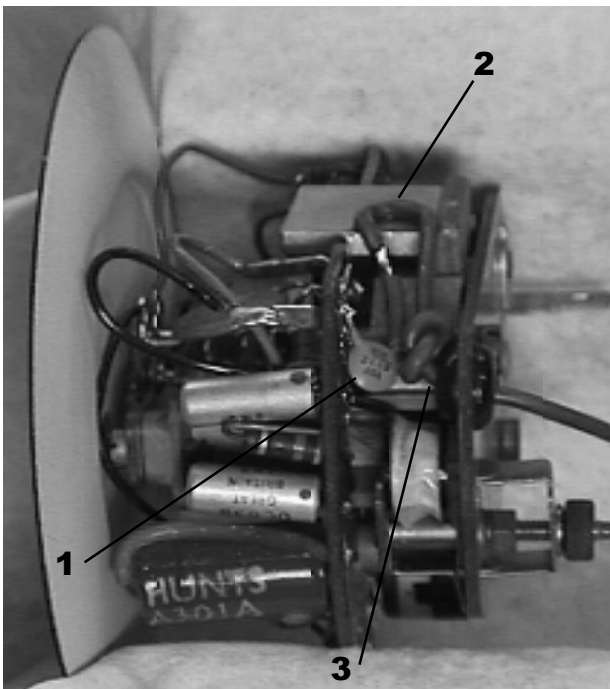


Figure 2: Internal wiring modifications.

The other side of the capacitor will be connected to your electronic ignition tach output, but let's make this a reasonably sanitary modification. Upon carefully examining the circuit board, you can find a location to drill a hole for a rubber grommet to insulate the wire. By passing the wire through the grommet and knotting it, you can make a very nice strain relief (see No. 3 in Figure 1). I looped the wire over the metal shown at No. 2. and applied a couple of drops of super glue to keep it from wandering. A small sleeve of insulation over the wire leading from the capacitor and a solder connection completes this new input.

My preferred grommet location is more clearly shown as No. 1 of Figure 3. Also more visible in this shot is the calibration adjustment pot used to correct tachometer response. It is shown as No. 2 in Figure 3. The new lead wire to the electronic input is No. 3 in this figure.

Next, you need to drill a hole in the metal case to clear

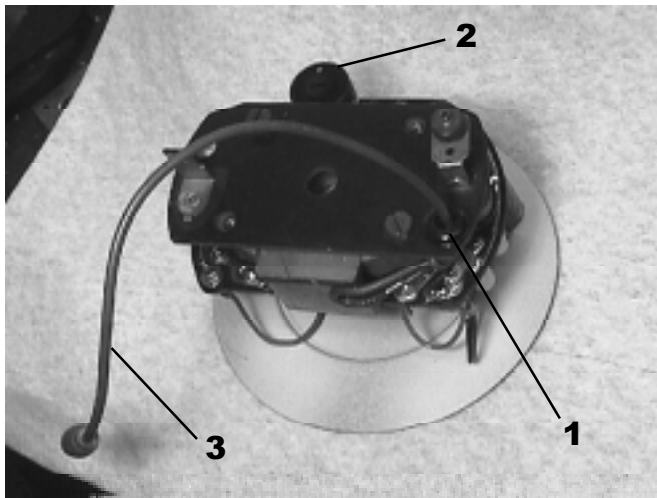


Figure 3: Rear of tach circuit board

the new grommet. This new hole is about 0.375 diameter and is shown as No.1 in Figure 4. This is also a good time to locate and drill a 0.250 hole to gain access to the calibration pot so that you can adjust the response

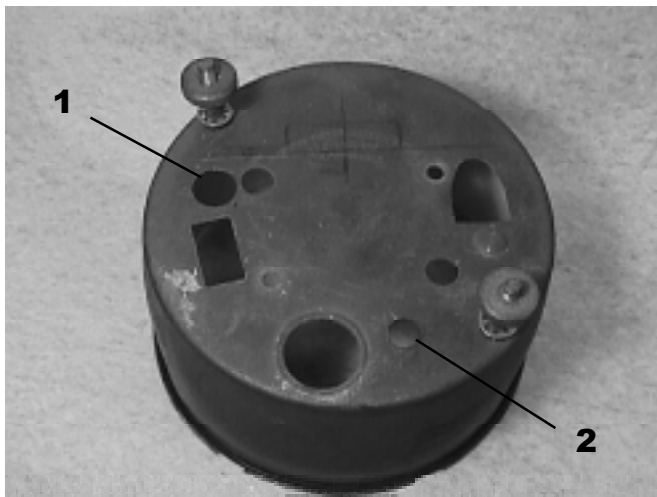


Figure 4: Case modifications

with the tach in the dash. This new adjustment hole is No. 2 in Figure 4. Measure both of these hole locations carefully before you start drilling!

This is a good time to paint the indicator needle with a matching fluorescent red paint. This is frequently found in model shops, where you can also look for a rub-on decal numeral "8" to replace the "4" in 4 CYL if you are using the 7K Alpine Tach.

You should replace the rectangular metal loop from the original pickup (without the white ignition wire). The finished assembly is shown in figure 5. All that's left is to reinstall the tach, connect it to the tach input

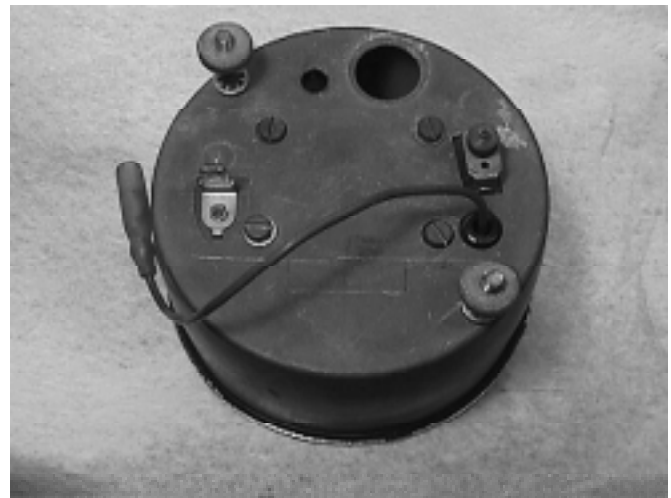


Figure 5: Completed tach assembly

connection on your electronic ignition, and adjust the calibration pot for proper readout. Remember that it will be most accurate at one engine speed (RPM), so you can tune it for red line or for a more commonly used freeway cruise speed.

Many thanks to Gary Winblad in developing this handy and economical modification to allow you to run an OEM tach with a state of the art ignition system.

Tom Hall