

Replacement Tach Board Manual

Rev 5

For
64-66 Dodge and Plymouth
Cars that use electronics
External to the tachometer.

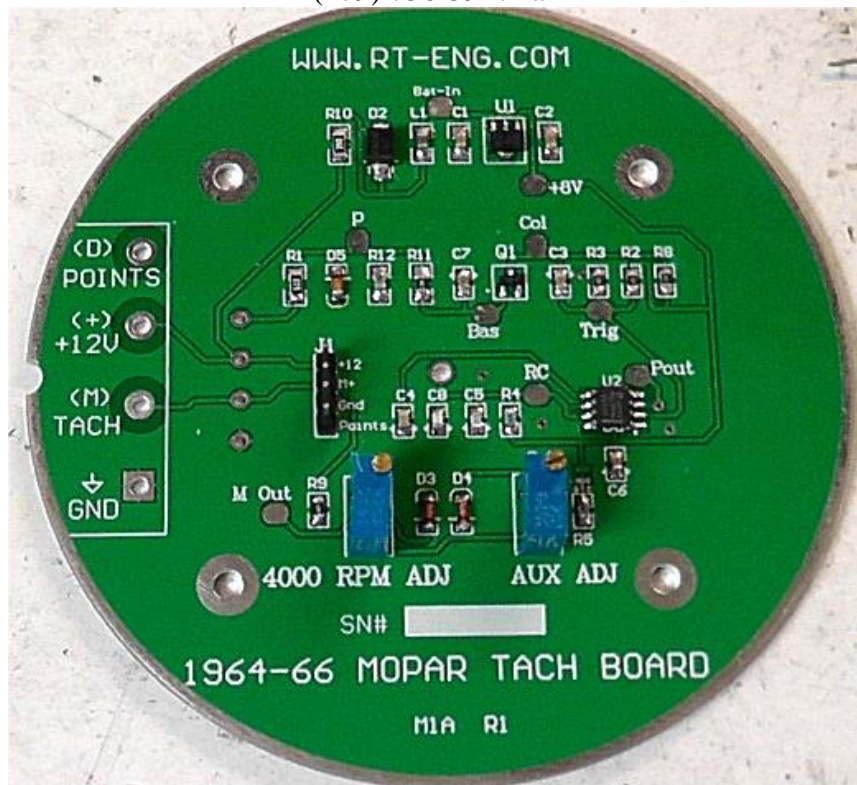
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Introduction:

This board replaces the original tachometer driver board in the 64-66 charger and other cars that use electronics external to the tachometer. The board is designed to fit inside the brass can where the original board was located. The board also has 4 holes in it so it can be mounted anywhere the user chooses if an original brass can is not available.

The board has 4 holes in it for the wires. These are the connections:

- +12V (+)– This hole should be connected to a wire that is hot when the ignition is turned on. On the outside of the 66 charger brass can, this wire is labeled “+” and is Purple in color. On the inside of the can this wire is red.
- GND (↓)– This hole should be connected to a wire that is grounded to the chassis. On a 66 charger, this wire is connected to the brass case. The brass case must be grounded in order for the board to work. On the inside of the can this wire is black.
- POINTS (D) – This hole should be connected to the minus side of the coil. On the outside of a 66 charger brass can, this wire is labeled D (for Distributor) and is gray in color. On the inside of the can this wire is green.
- TACH (M)– This hold should be connected to the tach wire. On the outside of a 66 charger brass can, this wire is labeled M (for Meter) and is yellow (sometimes red) in color. On the inside of the can this wire is yellow.

Installation:

In order to install the board in an original sardine brass can, do the following:

- 1) Locate the sardine can in your car. On a 66 charger, the sardine can is behind the glove box lining. On some cars with console tachometers, the sardine can is under the console. On a 66 barracuda with console tach, the sardine can is located behind the driver’s side kick panel.
- 2) Unplug the white connector from the wiring harness. Gently rock the harness and do NOT pull on the wires. Instead grasp one side of the connector in one hand and the other side in the other hand and gently try to pull them apart, rocking them back and forth.
- 3) Turn the can over and you will see on the bottom a large piece of black tape on the circuit board.
- 4) The circuit board is held into the brass can by several bent in dimples. Using needle nose pliers, bend the dimples out. The circuit board should pop out. You may need to gently pry the circuit board out using a small screwdriver.
- 5) Remove and saved the large piece of black tape.

- 6) Cut the wires that are connected to the old circuit board. Cut them as close to the board as possible.
- 7) Strip back about ¼ inch of insulation on the end of the 4 cut wires.
- 8) Solder the yellow (M) wire to the TACH (M) hole. Be careful not to get the PC board too hot as you can melt the PC board. You need to get a good solder joint or the meter will not work properly. NOTE: if you find that the old wire won't solder properly, then you might consider obtaining some newer wire and replacing the old wire.
- 9) Solder the red (+) wire to the +12V (+) hole.
- 10) Solder the green (D) wire to the POINTS (D) hole.
- 11) Solder the black (▼ Look like a triangle made with lines, with a line coming out of the bottom of the triangle) wire to the GND (▼) hole.
- 12) Make sure that no wires are touching anything except the 4 holes you solder to.
- 13) Put the saved piece of black tape over the back of the board. You may need to use some black tape to hold it on. If the original tape covering the back of the board is missing just use new black tape and entirely cover the back of the board.
- 14) Before you continue, you should calibrate the tach board now. You can do this by running the car with the tach board connected but not installed in the sardine can. Make sure that the outside of the sardine can is grounded to the car frame very well, or else the tach board will not work. See the adjustment section of this manual for detailed directions on how to perform the adjustment.
- 15) Put the circuit board back into the brass can with the components inside the can and the black tape facing out.
- 16) Bend the edges of the can in like they were when you started in order to hold the board inside the can. Make sure that all the metal on the circuit board is covered by the black tape and that the circuit board is pressed up into the can and cannot fall down.
- 17) Plug the white connector back into the wiring harness.
- 18) Mount the can back to the mounting metal plate using the two Philips screws.
- 19) Test your new tach board.

Troubleshooting:

If your tachometer does not work after installing the board, do not panic. Each tachometer board was tested at the factory and is known to work. Here are some things you can check:

- 1) Are all four of the wires securely soldered to the board. You can gently pull on each wire and it should not move.
- 2) Is the brass case grounded? You can try running a wire from the outside of the case to a good ground and see if the tach starts working. You can check from the brass case to a good ground using a ohmmeter
- 3) Is the tach itself good? You can put some voltage on the tach to check it, but do not leave it on the tach. I will sometimes poke a 12V wire onto the tach wire very quickly (and quickly pull it off) and see if the tach needle moves. If it does not move the tach itself is bad. If you leave 12V on the tach for more than 1 second or so you will fry the tach.
- 4) Is the points signal getting from the coil to the D (distributor) wire. You can use a cheap voltmeter to check continuity from the minus side of the coil to the D (gray) wire on the can. You should see an AC voltage on this pin when the engine is running.
- 5) Is the tach sending unit getting +12V when the engine is running? You can use a voltmeter or test light to see if the + (purple) wire is getting 12V.
- 6) Is the M (yellow) wire connected to the back of the tach? You can check this with an ohmmeter.
- 7) Is the tach sending unit putting out a voltage on the M (yellow) wire when the motor is running? If it is not putting out a voltage, then it may have a bad ground, it may not be getting +12V, or it may not be getting a good signal from the coil. One other possibility is that the tachometer wire could be grounded or the tach is shorted out. The tach sending unit should put out voltages similar to this when the engine is running:

66 Tach approximate voltage versus tach reading
(Can change as you change the 4000 RPM
adjustment)

Voltage	Tach Reading in RPM
0-0.5	0
0.885	1000
1.4	2000
1.9	3000
3	4000
3.9	5000

Adjustment:

Your 66 charger tach sending unit was adjusted at the factory to read properly. However, all meters are not alike. If you want to adjust the tach sending unit we provide two potentiometers on the board to assist you in this effort. We have found that every tach meter movement is different, and we highly recommend that you calibrate your tach to make it accurate.

The first pot is labeled as “4000 RPM ADJ” and it is used to adjust the gain of the tach board. If your tach is reading too low or too high at upper RPM’s, but is correct when idling, you may need to change the R6 pot using a small screwdriver.

The second pot is labeled “AUX”. This pot is used to adjust the idle reading of your tach. If your idle reading is always too low, you can try changing the “1000 RPM ADJ “ pot using a small screwdriver. Note that it is also possibly to change the idle reading by adjusting the springs on the tach needle, which is how Stewart Warner did it originally, since the original tach boards did not have this 2nd adjustment. If you want to use the springs to adjust the idle reading, rotate the spring adjusters in the direction the needle needs to go at idle (i.e. clockwise to make the idle go up, CCW to make the idle go down.) After adjusting the springs to make the idle correct, you will need to re-adjust the 4000 RPM adjustment. It may take several passes through the process to get the tach to read properly.

If you try to adjust the tach board while it is connected to the wiring harness and the engine is running, make sure that you do not allow any of the circuit board wires or components to touch anything metal as you could destroy the board. Make sure that the unit has a good ground when adjusting it as well, using a small wire connected from the brass case to a good ground (such as a screw on the dash).

When I am about to start calibrating a unit, I will usually turn the “AUX” pot counterclockwise 15 turns to make sure that this pot is totally turned down. Then I have found that it works best to adjust the “4000 RPM ADJ” pot next, with the cars engine running at 3000 or 4000 RPM (using some other tach to read the actual RPM). Adjust the “4000 RPM ADJ” pot so that your tach matches the other meter you have connected. Then after adjusting this pot, let the car drop back to idle, and now if the idle reading is too low, you can use the “AUX” to bring the idle reading up, or adjusts the tach needle springs. If the idle reading is too high, then you need to move the spring on the needle of the tach so that it applies more spring force to the needle, making the needle go lower. After moving the spring, you need to re-adjust the “4000 RPM ADJ”.

I use a dwell/tach meter to check the tachometer reading. You can also use a racing tachometer, or a timing light with a built in RPM meter. I have also noticed that most older tachs are a little sticky, and it is helpful to tap the tachometer case after each adjustment to make sure the meter is reading correctly.

NOTE: If you are trying to use this newer version of the manual to adjust an older style 64-66 tach board, the labels have changed. On the older boards, the R6 pot is equivalent to the “4000 RPM ADJ” pot, and R8 is equivalent to the “1000 RPM ADJ” or “AUX” pot.

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