

Mopar Replacement Tach Board with Calibrator Installation Instructions and Manual 67-74 M5 Tach Board for Dodge and Plymouth

For cars using electronics internal to the tachometer

Rev2

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Tools Needed:

- Wire Cutter/Stripper
- 3/8" Nut Driver
- 9/32" Nut Driver
- Needle Nose Pliers
- Soldering Iron
- Slick 50 Oil
- Tach Board

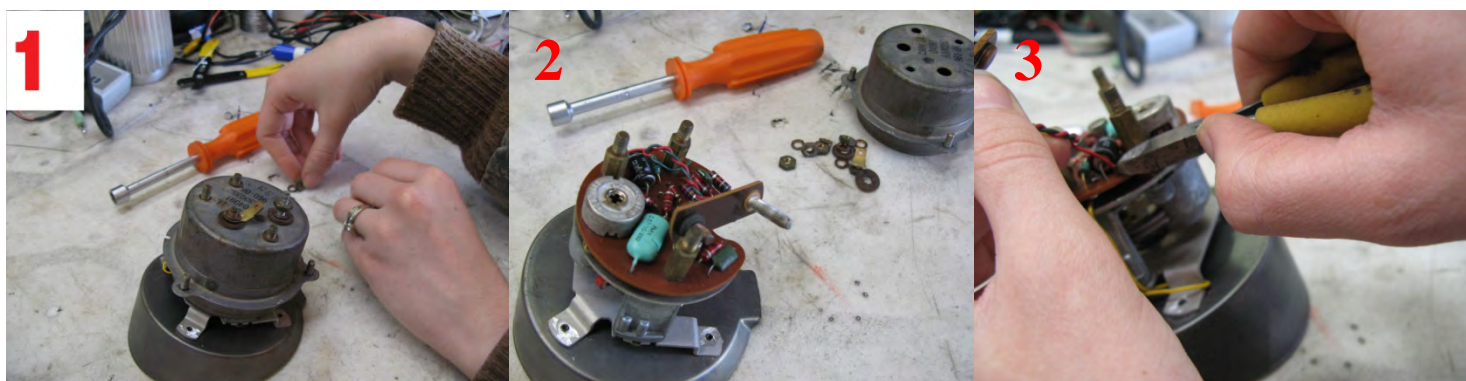


Introduction:

This board replaces the original tachometer driver board in the 67-74 Dodge and Plymouth cars that use electronics internal to the tachometer. The board is designed to fit inside the original tachometer in the same place where the original board was located.

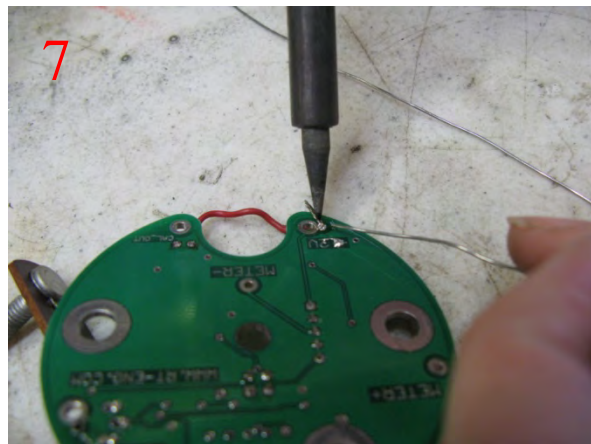
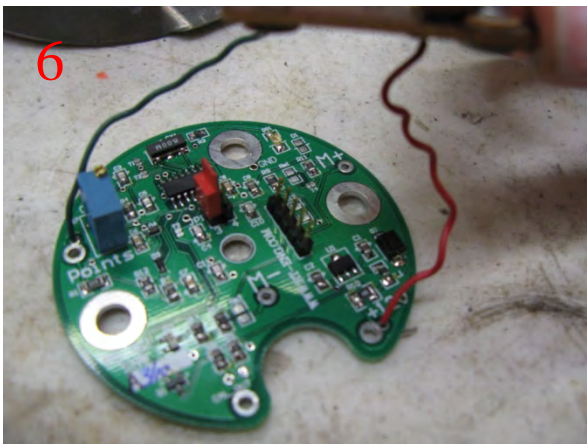
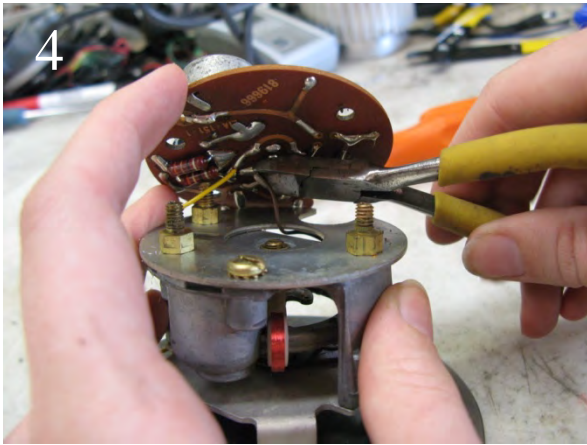
The board has 4 holes in it for the wires. These are the connections:

- +12V – This hole should be connected to a wire that is hot when the ignition is turned on.
- METER – (GND) – This hole should be connected to one of the wires of the tach meter movement. In most all the meters, the wire on the meter movement closest to the tach board (usually the shortest wire) should be connected to the GND pin.
- POINTS – This hole should be connected to the minus side of the coil, or if you are using a MSD ignition it should be connected to the TACH output pin of the MSD ignition.
- METER+ – This hole should be connected to one of the wires on the tach meter movement. In most all of the meters, the wire on the meter movement closest to the face of the tach (usually the longest wire) should be connected to the METER+ hole.

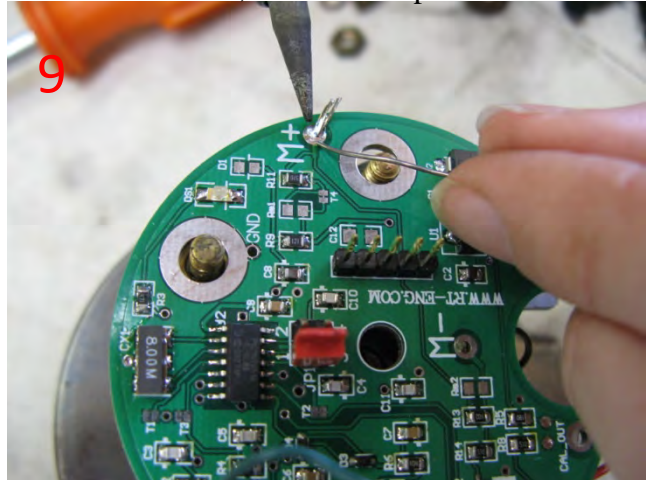
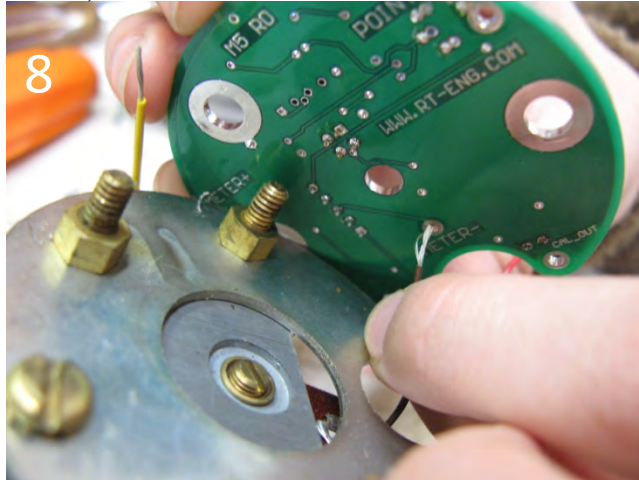


Installation:

- 1) Remove the instrument panel from the car.
- 2) Remove tachometer from instrument panel.
- 3) Remove all the nuts off of the back of the tach using a 3/8" nut driver. Then remove can from the back of the tach movement. As shown in picture #1.
- 4) Cut the points and +12 wires off the old board, cut the wire as close to the board as you can get. As shown in picture #3
- 5) Remove the 3 brass standoffs using a 9/32" nut driver
- 6) Cut the meter- and meter+ wires off the bottom of the old tach board. As shown in picture #4. You can now discard your old tach board if you wish.
- 7) Strip a small section at the ends of each wire to prepare them for installation. As shown in picture #5
- 8) Solder the points and +12 wires from the top of the board, as shown in pictures #6 and #7. Note: in picture green wire is points and red wire is +12. The points wire comes from the shorter brass colored stud, and the +12 wire comes from the longer silver stud.

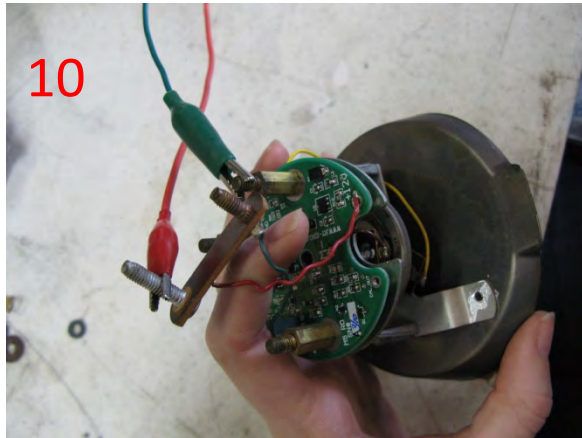


9) Next, solder the meter- and meter+ wires from the back of the board, as shown in picture #8 and #9.



10) Replace brass standoffs to secure the board on to the tach movement.

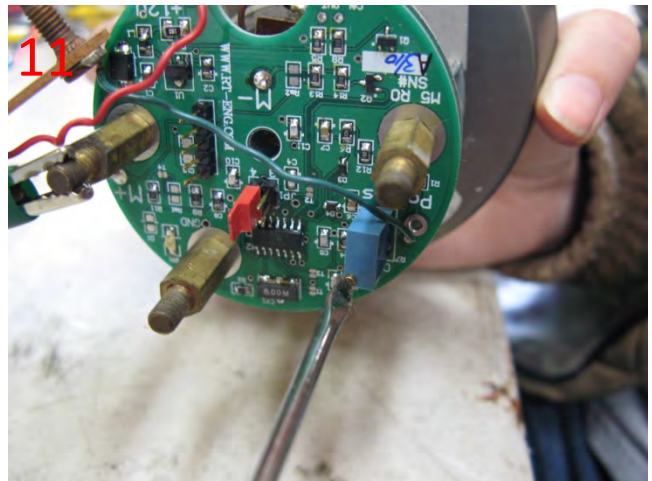
11) **Calibrate** tach by connecting 12 volts to the +12 stud and ground to one of the brass standoffs, as shown in picture #10. Note: in picture red wire is 12 volts and green wire is ground.



12) Place the red jumper pin in the vertical position between 2 & 4 to calibrate the tach at 4000 RPM. Note: when your jumper pin is in this position the LED light will blink 4 times with a pause in between. As shown in picture #11.

13) Adjust tach using the adjustment screw on the blue calibration pot, until tach reads 4000. As shown in picture #11.

14) Move the red jumper pin to vertical position between 1 & 3 to calibrate tach to 1000 RPM. Adjust tach by moving the cardboard piece attached to the spring until the tach reads 1000. As shown in picture #12.



- 15) Move red jumper pin to a horizontal position between 3 & 4 to allow tach to operate properly when installed in car.
- 16) You can now replace the can on the back of your tach movement using a 3/8" nut driver. Note: Make sure the point and +12 stud are not touching the can otherwise your tach will not work. To test for this problem use a multimeter to check for continuity.

APPENDIX A- Specific Instructions for 1967 console tach only:

If you have a 67 console tach, you will find that the board is held on with 2 standoffs instead of 3. Also, there are 6 wires total instead of 4. You will solder the brown ground wire onto the large hole on the edge of the board that has tin plating around the hole, so that the tach board will have a good ground. Here is the correct color code for the wires coming into this tach:

Purple.... +12V

Green.... Points (minus side of coil)

Brown.... Ground

Orange...lighting

The other two wires go to the meter movement and are no different than all the other tachs mentioned in this manual.

APPENDIX B- Specific Instructions for 1971-74 AMC AMX Tic-Toc-Tac Only:

This tach is similar to the other Mopar tachs, except the back of the tach housing is held on by three screws instead of three nuts. The studs that connect to +12V and the POINTS are on the side of the housing, and you connect these two studs to the tach just the same as you would a Mopar tach.

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 case of the tach 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 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. We will sometimes poke a 12V wire onto METER+ 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 could fry the tach. Note that you must have METER- movement wire grounded when you do this test. It is also possible that you connected the two meter wires up backwards, in which case the tach meter movement will try to move the needle under 0 RPM.

- 4) Is the point's 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 +12V wire is getting 12V.
- 6) Is the METER+ wire connected to wire on the front of the tach meter movement? You can check this with an ohmmeter.
- 7) Is the wire on the meter movement closest to the tach board connected to the hole in the tach board labeled METER-? Note that METER- is also connected to the TACH ground, which is the standoff hole that has tin plating around it. You can check continuity between the METER- hole and the case of the tach, and you should get close to zero Ohms.
- 8) Is the tach sending unit putting out a voltage on the METER+ 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:

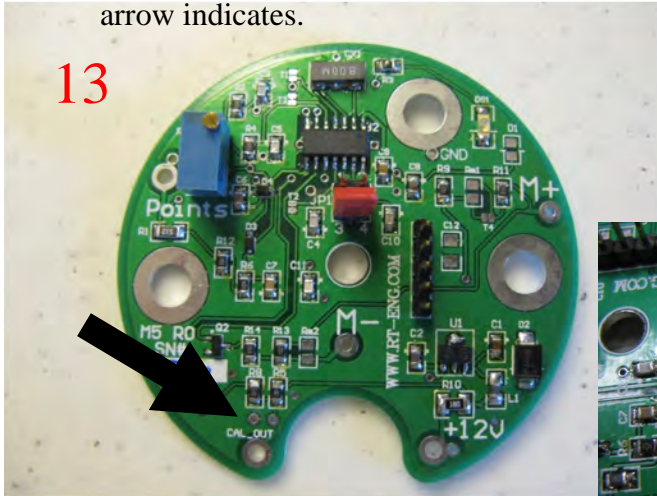
Tach voltage versus tach reading

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

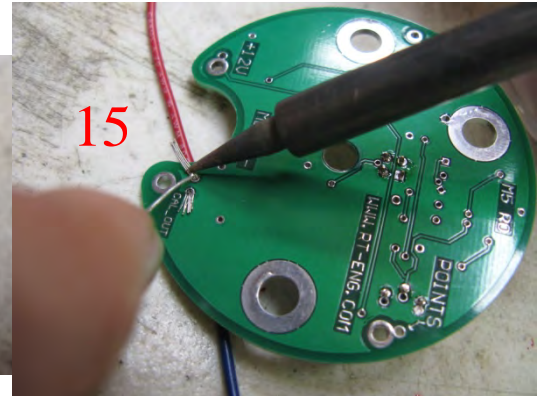
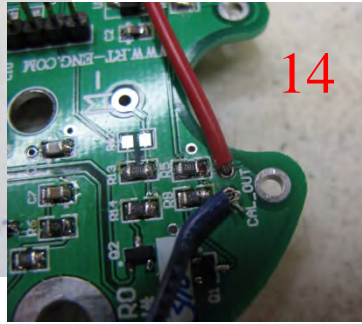
Using your M5 Tach board as a calibrator on a M1 or M4 tach board:

Please note, this tach board can only be used as a calibrator for other Dash-Worx tach boards.

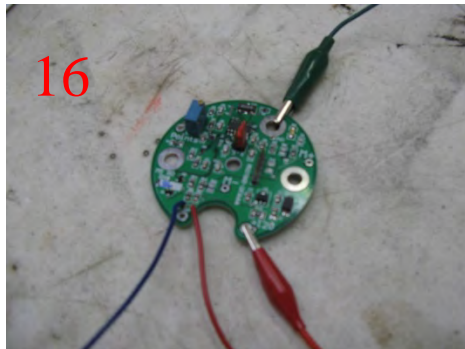
- 1) Find the Cal Out holes on lower left side of board and connect two wires, one for ground and one for cal output, in picture #13 the ground hole is on the left and the cal output hole is on the right where the arrow indicates.



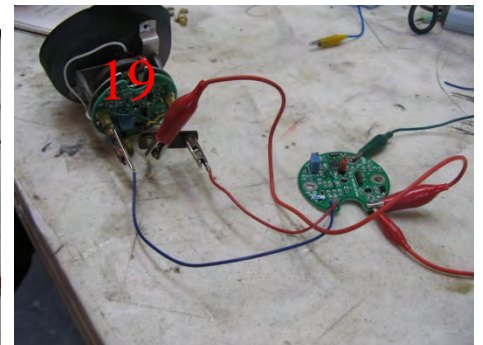
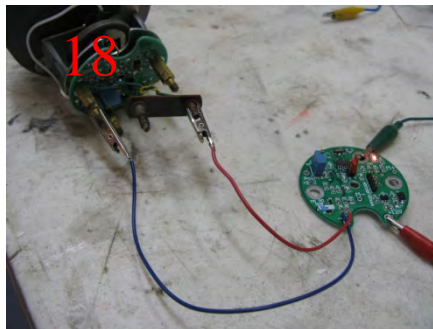
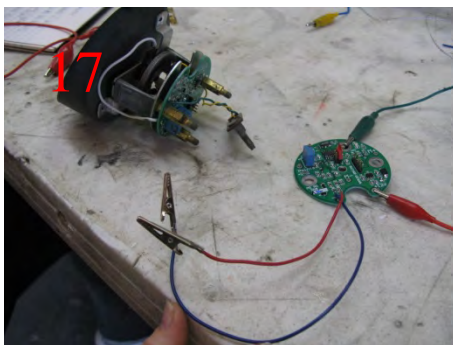
- 2) Solder wires into holes for a solid connection please see Picture #14 and #15



- 3) Hook up 12 volts and ground to the tach board where labeled on the board. Note LED light on board should blink red to indicate a good connection. In picture #16 the green wire is connected to ground and the red wire to +12.



- 4) Connect the cal out (red wire in picture) to the points stud on the tach you are calibrating, also connect the ground wire (blue wire in picture) to a ground standoff on the tach you are calibrating, use jumper wires to connect +12 from the M5 board to the +12 stud on the tach you are calibrating. See the sequence of pictures numbered 17,18 and 19 to show this process.

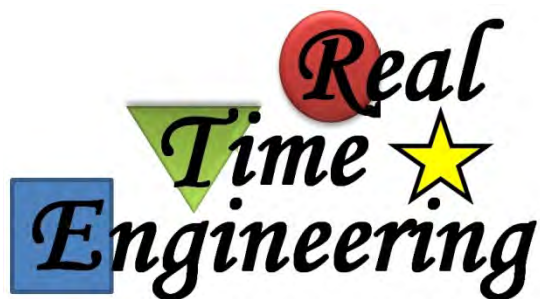
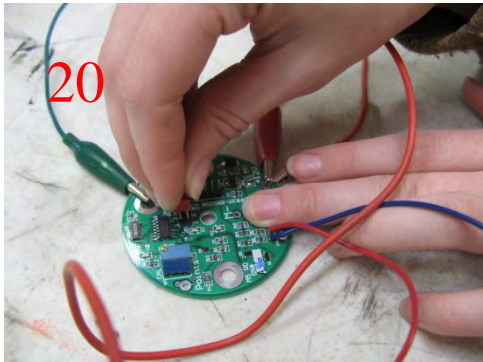


- 5) From this point on you will not adjust anything on the M5 board except the red jumper pin, therefore when we indicate to adjust either the calibration pot or spring you will make these adjustments on the tach you are trying to calibrate, not on the M5 tach board.

- 6) When calibrating your tachometer to 4,000 rpms place the red jumper pin in a vertical position between 2&4, (as shown in picture #20) the LED should blink 4 times with a pause and then repeat. Adjust your tachometer

by turning the adjustment screw on the blue calibration pot that is labeled 4000RPM ADJ until your tachometer reads 4,000 as shown in picture #22.

7) When calibrating your tachometer to 1,000 rpms place the red jumper pin in a vertical position between 1&3, The LED should blink one time with a pause and then repeat. Adjust your tachometer by moving the cardboard piece connected to the spring on your tach movement (as shown in picture #23) until your tach reads 1,000 (as shown in picture #21).



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