

TRA 2023 Tech Session – Electrical Hacks  
Reference -Dynamator Conversion  
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First of all, what the heck is a Dynamator? A Dynamator (AccuSpark-UK) is an alternator in a body that looks identical to an original Lucas 39 dynamo (generator) which was original equipment on TR2-4. As the maximum output of the original Lucas dynamo is only 19 amps, many people have converted to an alternator to supply more current to run things like additional lighting and electric fans for cooling. Alternator conversions are available from a number of the usual suppliers (e.g. Moss) and do-it-yourself instructions are available (our Bruce Clough presented at TRA 1995 which you can find online – Google it).

The reason I decided to go with a Dynamator was to retain a totally original look yet get the advantage of a 45 amp alternator. Prices for the Dynamator have dropped and I paid \$200 (including shipping). To keep the original look, I want to continue to use the wide belt. I could have taken the fan/pulley off my generator.



**Dynamator Alternator**

A MVT member gave me a spare set of fan and wide pulley which I cleaned up and used. That way I could keep the original generator as intact.

Installation of the Dynamator is relatively straightforward as the mounting points are identical to the original generator. However when I placed both units together on the bench, I noticed that there was a slight difference in the distance from the body of the Dynamator to the pulley compared to that of the generator. Careful measurement showed this difference to be small, about 0.100". To make sure the belt alignment was as close as possible, I took 0.100" off the hexagonal front mounting post on a lathe and compensated with 2 washers (that totaled the same

thickness) between the rear generator mount and the Dynamator. This had the effect of moving the unit back into alignment.

When an alternator conversion is done, the voltage regulation is controlled internally in the alternator and the original control box is no longer needed. You can just eliminate the control box but if you want to keep originality as much as possible you can use a modified control box as a junction box. In fact Moss currently even sells such a modified control box for use with alternator conversions. I decided to modify an old control box that I had. As a guide I referred to a post on The Triumph Experience in the TR2/3 Forum by Barry Shefner.

This is what a control box looks like from both the side without the cover and bottom.



**Original Control Box – side view**



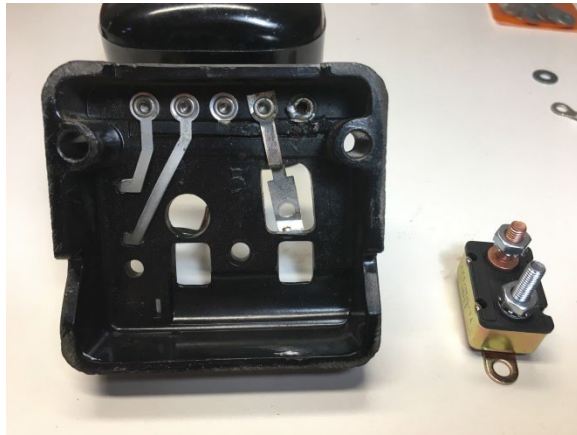
**Original Control Box – bottom view**

What is amazing to me is that these old analog systems worked as well as they did. Oh well, first step to get rid of everything as this box is on its way to becoming a fuse holder and terminal strip. When finished there will be only one input to a fuse and two outputs to the wiring harness. The

other two positions will not connect to anything internal and only act as a terminal strip to connect wires within the wiring harness.

The fuse used is a 50 Amp Type 1 Fuse (auto reset).

This is what the bottom looks like after removing connections that were not need.



**Modified Control Box and 50A fuse –bottom**

The side view of the modified box shows not much remaining, just the existing connections that will be used to connect to the fuse. Ring terminal ends have been soldered to the existing wires.



**Modified Control Box – side view**

The next steps were just to mount the fuse in the center of the control box. A short length of 10 gauge wire with ring terminals was run from the input side of the fuse to the flat connector on the right and the two wires with ring terminals to the output side of the fuse.



### **Modified control box complete –without cover**

This is what the finished control box looks like. Put on the cover and you cannot tell it from an original one. Changes in the wiring for the original and modified control box are below. Only 1 wire needs to be moved.



### **Dynamator installed**

There were a couple of other things that I did in connection with the Dynamator conversion. It was recommended to add an additional wire from the Dynamator to the modified control box to handle the additional amperage an alternator can produce. I ran a length of yellow, 10 gauge wire from the Dynamator to the control box along with the original wire. I was able to install the additional wire and combine with the original wire, then wrap with wiring harness tape so everything was hidden and original looking.

The other thing I did was make a shunt for the ammeter. The ammeter has a +/- 30 Amp range so with a 45 Amp alternator, more than 30 amp is possible pegging the meter. A shunt is a length of wire with a calculated resistance in milliohms to change the full scale range of the meter. Using some input from the forums, this calculates to be 7" of solid 14 gauge wire. If not correct this is easy to change.

The conversion works well. One thing to note is that electronics are more susceptible to heat and other factors. The position of the Dynamator and original generator are close to the exhaust manifold so excess heat can be an issue. I did have a failure of the first Dynamator on a trip to TRA and can not for sure say why it did. However it was replaced no charge by Accuspark.

Making the connections to the main wiring is straight forward. The two diagrams below show the wiring connections, both original and with the Dynamator.

