

## Installation guide for the ADA Depot MDRT transformer.



### Foreword and disclaimer:

Thank you for purchasing this Machinator transformer kit.

These kit suites the MP-1,/ MB-1.

This kit also solves the famous restart problems that some MP-1's have.

The MDRT is an ideal transformer for use with the 3TM kit.

So why an MDRT?

It has twice the power of the original transformer; wich is 24VA vs. 12VA from the original transformer.

The filament voltage is 12.6Vdc and not 8Vdc. So the tubes get the proper filament voltage.

The MDRT puts out 240Vdc over the 190Vdc from the original transformer. To get this voltage you need to replace R9 on the tube board with a 300k resistor which is supplied with the kit. (See step 8)

**Please note you're working with lethal voltages! Both mains and secondary high voltage for the tubes are extremely dangerous!**

**The person who installs this kit is also the person who's responsible for his own safety and also responsible for the quality of the way the kit is built in the chassis!**

**If you don't have any experience doing this: STOP, DON'T DO IT!!!! Leave the job to an experienced technician!!!!!!**

**Please also note if you have a 120 or 240 kit on hand!!! (It's written on the kit.)**

**You can change this if necessary but make sure it's the right voltage BEFORE you use it!!**

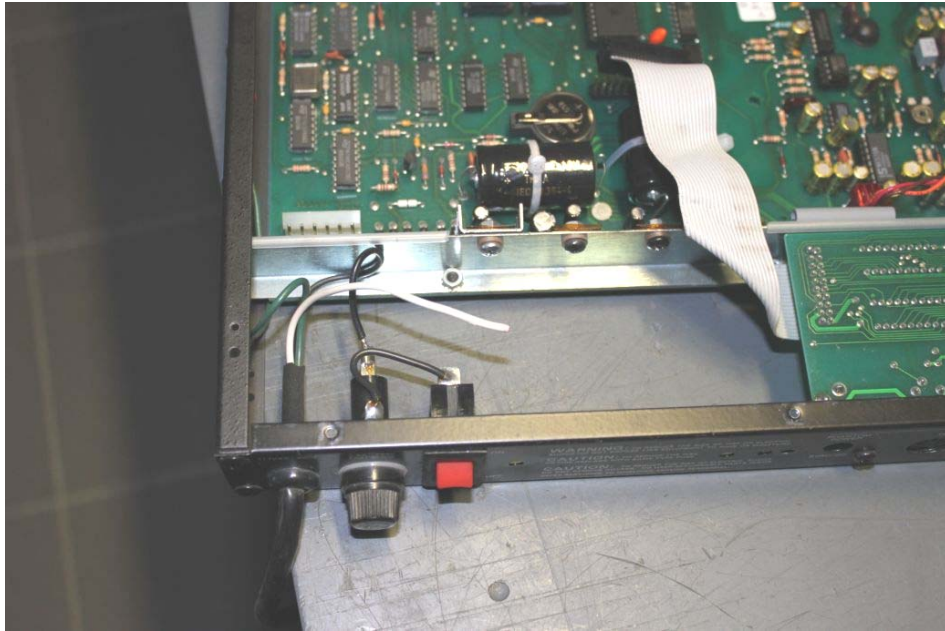
So for a starter, make sure the mains is fully disconnected (so no mains cord in the wall socket!) and follow the instructions!

The instructions are based on a MP-1 chassis.

**Step 1:** Make sure the mains power is fully disconnected. (I.e. socket unplugged from the wall!!)

**Step 2:** Remove both bottom and top cover of the amplifier. This to get good and easy access to mount the new kit.

**Step 3:** Remove existing transformer. This means remove the two mounting screws, cut the mains wire that's connected with the crimp connector, de-solder the other mains wire from the mains switch.



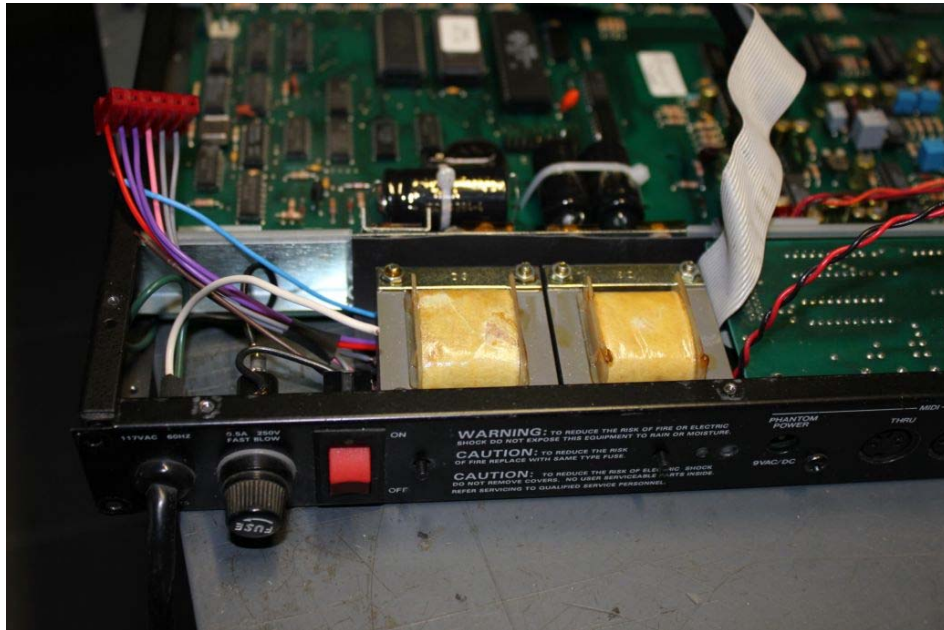
**Step 4:** With the back of the MP-1 towards you remove the two screws on the left corner of the chassis so you can bend it a little bit from the chassis. This will give you some more room to slide in the new kit very easy.



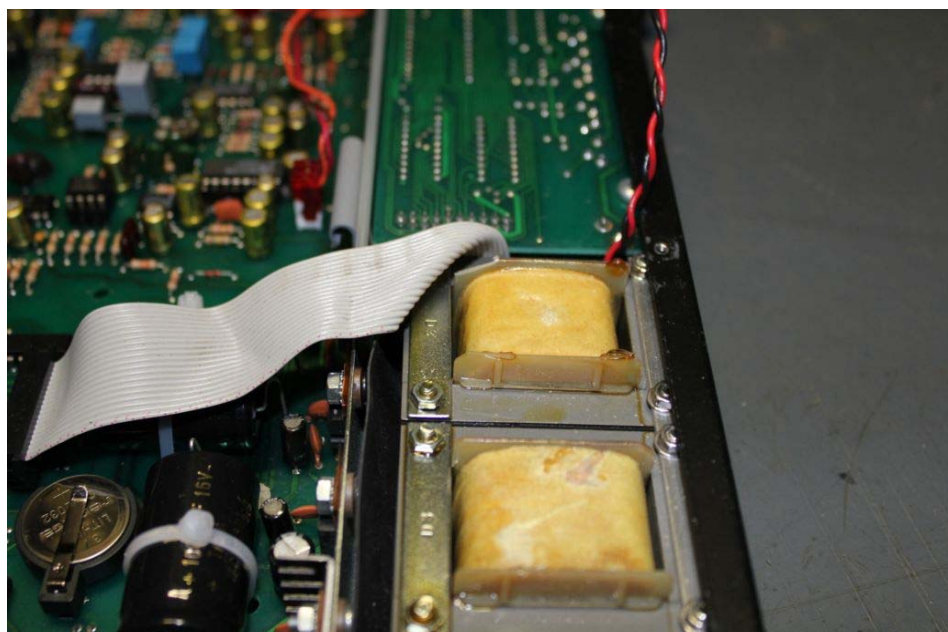
**Step 5:** Slide in the new kit, put the washers and nuts to the mounting screws and tighten it with a 5.5mm wrench.(Sorry, only metric nuts and bolts in the Netherlands,...) Put the two screws on the back of the corner back into their place and tighten them.

In the end the kit is almost EXACTLY flat with top and bottom. If not just take a file and make a kind of vertical slot so you can move the kit up or down.

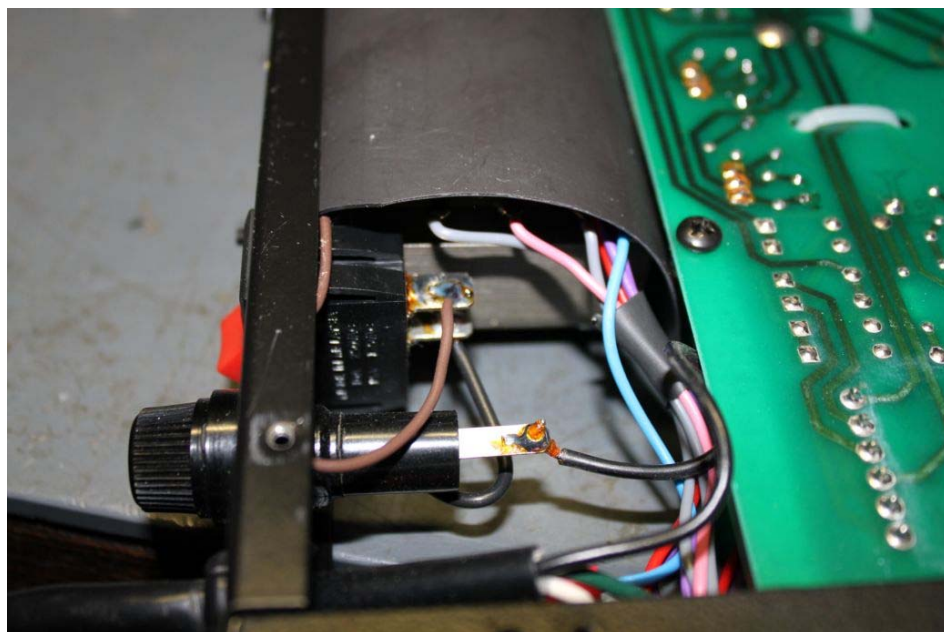
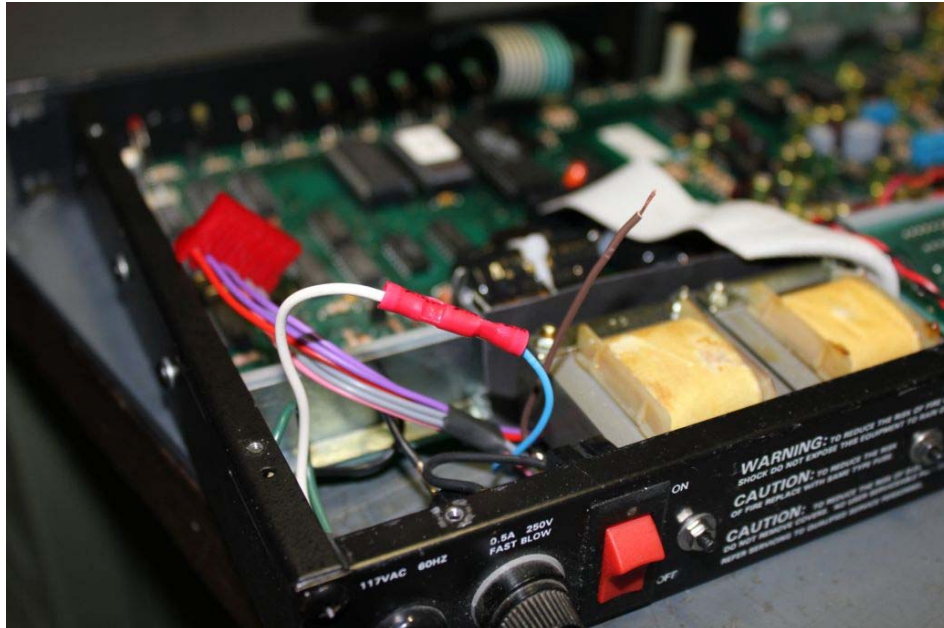
The MP-1's I did so far I could detach the flying midi cable, "refold" it in such way it passes the tranny instead of going over it. This way you gain 1-2mm on the top so you can slide the kit maximal to the top of the chassis. Do NOT squeeze the midi cable between the top cover and the tranny kit. It will cause trouble in the long run!



If needed you cut a little piece of the MDRT so the midi cable fits better. But be careful when doing this.



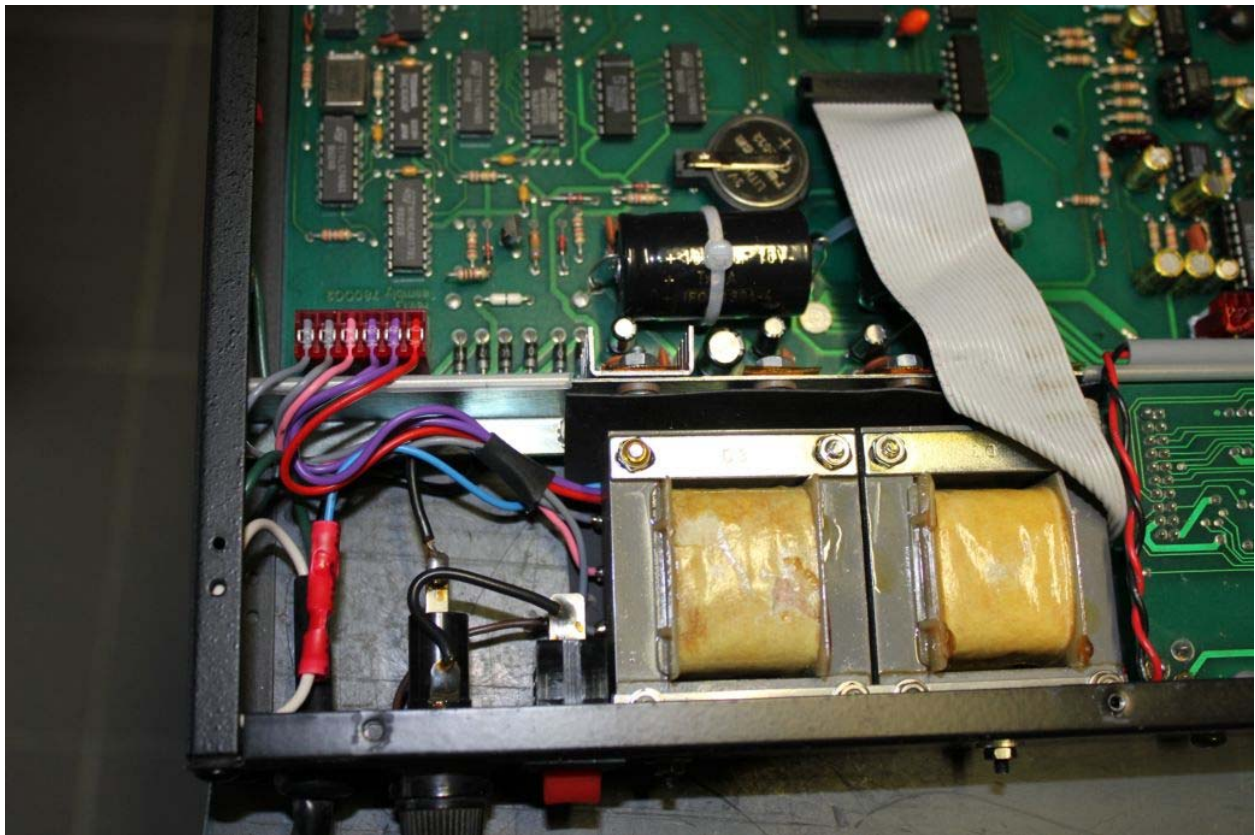
**Step 6:** The two loose flying leads are the mains leads. Solder one of the mains leads of the kit to the switch, crimp (if you have the tools see appendix 1 for examples) or solder the other wire to the mains cord. In case of soldering make sure you use a piece of shrinking tube to isolate it properly! You can also use a single screw terminal if you wish. Since its AC voltage it does not matter how you connect the mains wires to the switch and / or mains wire. There's no polarity!



**Step 7:** On the lead of the kit are two connectors. One 3 way going to the tube board for high voltage tube supply. One 6 way connector for low voltage supply. There is only one way to get these connectors onto the main board and that's the easy way!

Make sure all wires are running free and the two connections you've made are 100% good, check this double!

Spread the wire bundle that runs from the transformer to the 6 way connector block so it is flat where it runs over the edge of the silver colored metal strip / heat sink. This way it not got stuck between the cover and the strip.

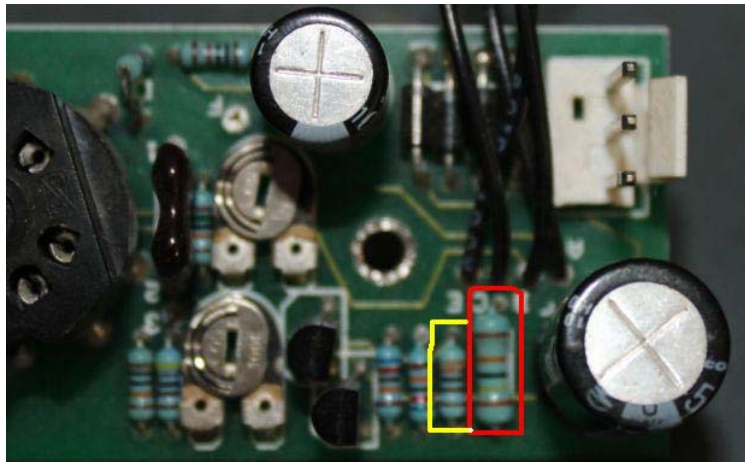


**Step8:** Install the 300k resistor on the tubeboard. This resistor alters the high voltage circuit so the voltage goes up to 240Vdc. If you don't replace it the voltage will stay at 190Vdc.

There are 3 different tube boards.

The original 3TM's, the 3TM new revision and the standard tube boards, it doesn't matter if they are standard or modded. This also applies for the new original tube boards I sell now.

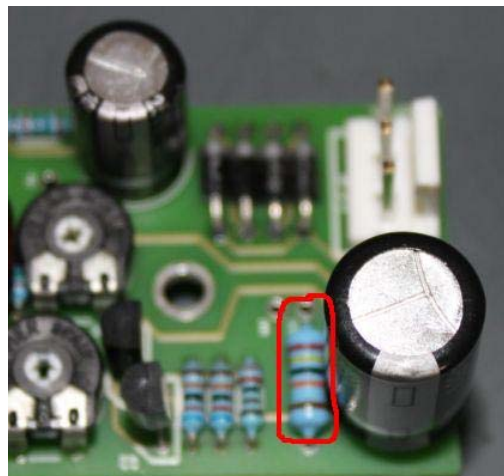
### 1; 3TM board first models



With the first models (this includes all 3TM's made by Hairston) you need to replace 2 resistors. So first check if the resistor (yellow circle) is a 2k2 (red red black brown brown) or a 3k3 (orange orange black brown brown). If it's a 2k2 nothing has to be done but if it's a 3k3 you need to replace it with a 2k2. This will allow a bigger current flow, else the voltage will go down when you play.

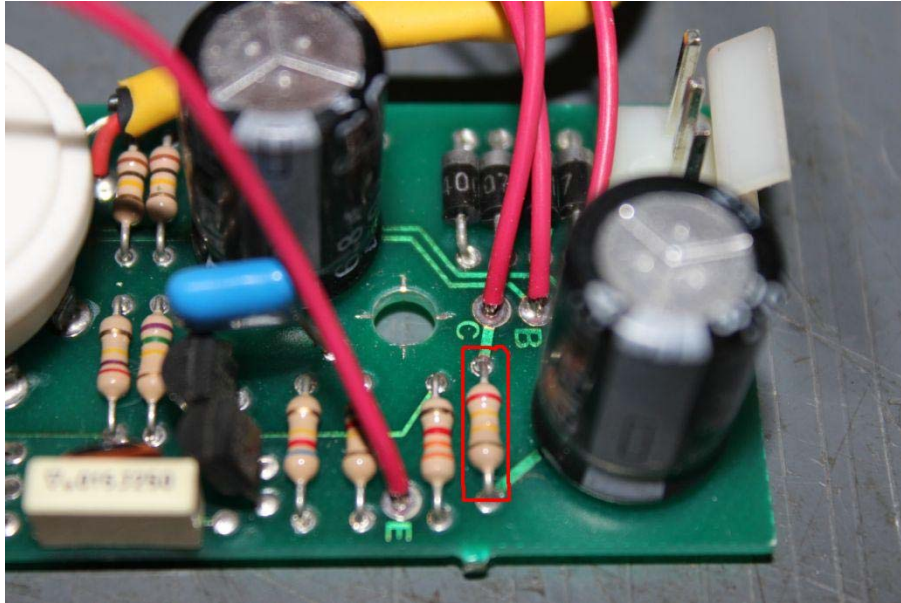
Replace the 240k 1/2W (red circle) with the 300k 1/2W supplied with the kit.

### 2; 3TM board new revision.



Replace the 240k 1/2W (red circle) with the 300k 1/2W supplied with the kit.

### 3; Original boards



Replace R9 (red circle) with the 300k 1/2W resistor supplied with the kit.

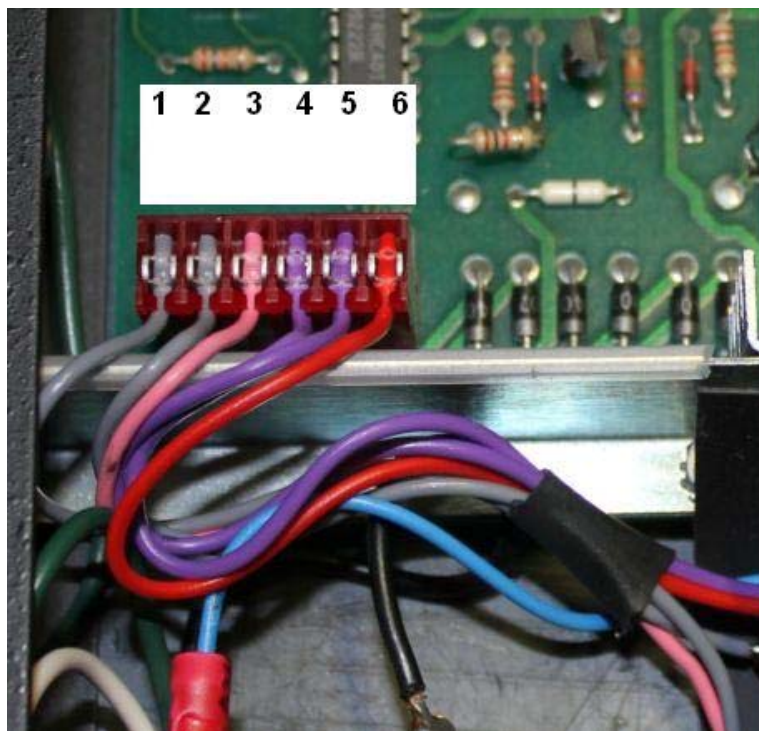
**Step 8:** Set the power switch on the back of the unit in the "ON" position. Place the unit in a position you can see the front side, put the mains plug into the wall socket and observe if the MP-1 is reacting as normal, i.e. display is coming up and unit starts running. If this is not the case please check the mains switch on the unit. If this still does not result in a proper working unit you need to check the secondary voltages. See appendix 2 for all the secondary voltages.

**Step 9:** Switch off unit, disconnect completely from the mains, close the top and bottom cover,.....Job well done!!!

## Appendix 1: Examples of crimping tools



## Appendix 2: Secondary voltages (colors of the wires may differ)



Red 6 Way block: voltages are AC

1. 13 Volt
2. 13 Volt
3. Common
4. 20 Volt
5. 20 Volt
6. Common

Red 3 Way block, voltages are AC (Careful, **Lethal voltage!!!!!!!!!!**)

1. Common (black)
2. N.C.
3. 250V (red)



None of these voltages are very critical concerning the height of the voltage. 5% variation is no problem at all.

The filament voltage may vary from 12 Volts DC to 13.5 Volts DC. Since this is a non-regulated voltage this filament DC voltage is very depending on the mains voltage.