



## **Foreword and disclaimer:**

Thank you for purchasing this Machinator transformer kit.

These kit suites the MP-1, 2 and 3 tube type / MB-1 and MP-1

**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.

## Mounting instructions:

### Step 1.

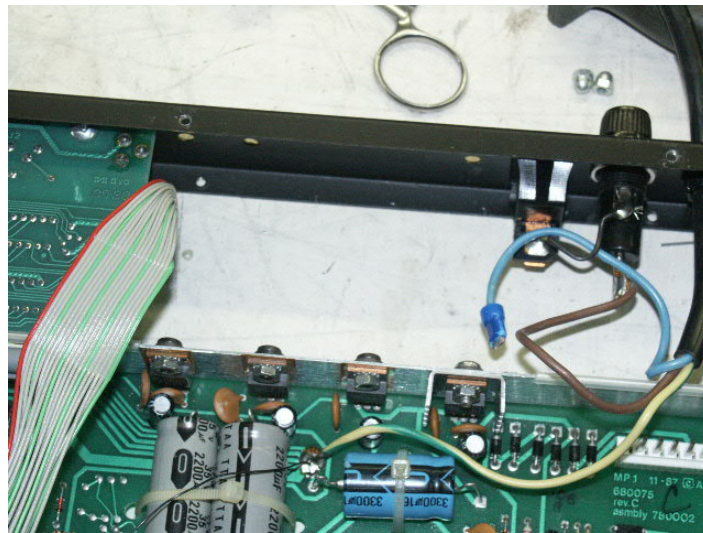
Make sure the mains power is fully disconnected. (I.e. socket unplugged from the wall!!)

### Step 2.

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

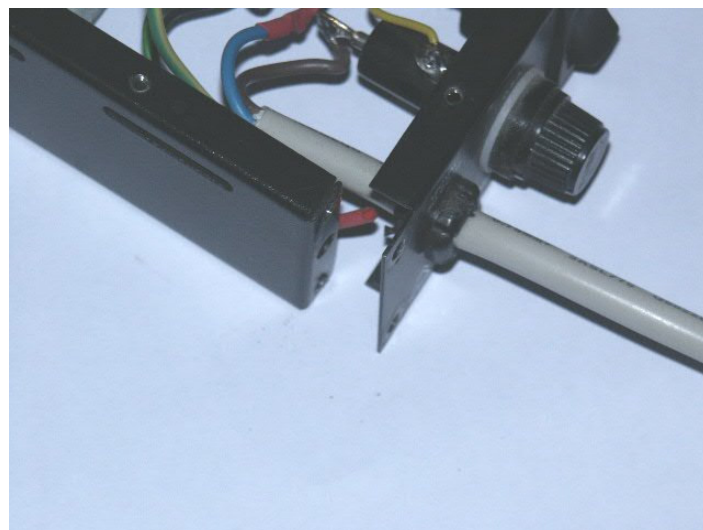
### Step 3.

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 there place and tighten them.

Please note that it can be necessary to enlarge the existing mounting holes a little bit to fit the unit in.

(Added 30-06-2006) 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.

(Added 30-06-2006) 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!

## Step 6. (Added 29-06-2006)

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! The big square holes that are the nearest to the edge of the connector are pointing to the back of the nylon male connector on the main board. Just slide the connector onto the male connector on the main board, this must result in a still vertical back piece of the connector on the main board. If this is bending outwards you'll probably have it the wrong way around! (look to the pictures in appendix 1! There you can double check it if you not sure!)

## Step 7.

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) 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. (Added 08-07-2006) Since it's AC voltage it does not matter how you connect the mains wires to the switch and / or mains wire. There's no polarity!

## Step 8.

Push the 6 way terminal block on the main board and the 3 way on the tube board.

## Step 9.

Make sure all wires are running free and the two connections you've made are 100% good, check this double! (Added 08-07-2006) 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 coloured metal strip / heat sink. This way it not got stuck between the cover and the strip.

## Step 10.

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 1 for all the secondary voltages.

## Step 11.

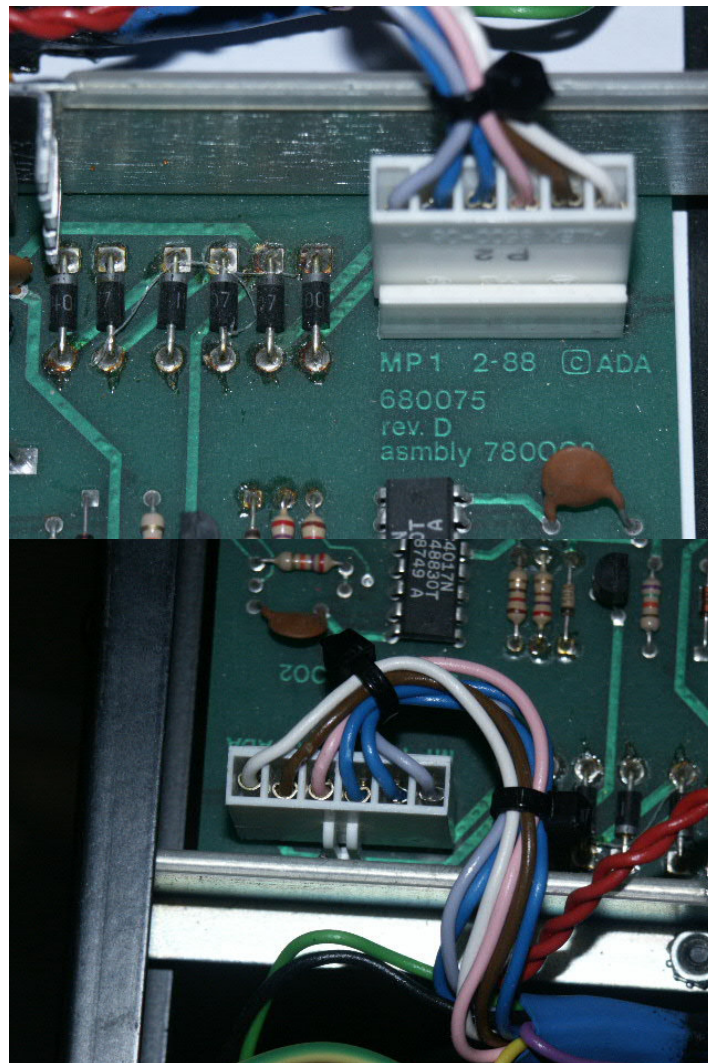
Switch off unit, disconnect completely from the mains, close the top and bottom cover,...Job well done!!!



## Appendix 1:

### AC Voltages on 6 way terminal block.

Please look witch pin on the 6 way block is the nearest to the diodes on the main board, let's say that's pin one.  
Please note that the voltages are a bit higher when measuring without load. Also the mains input voltage is from influence for the final output voltage.

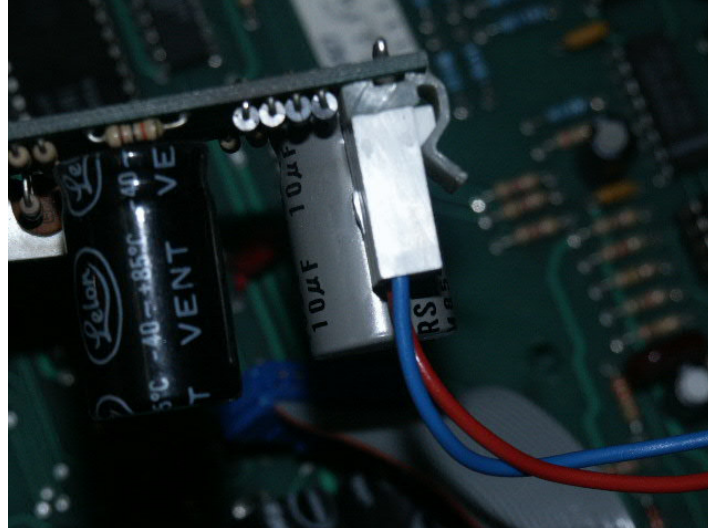


### 6 Way block:

1. common (0) (Grey in the picture)
2. 20 Volt
3. 20 Volt
4. common (0) (Pink in the picture)
5. 13 Volt
6. 13 Volt

3 Way block (Carefully, **Lethal voltage !!!!!!!!!!!**)

1. 0 Volts
2. not connected
3. 250 Volts



None of these voltages is 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 13.2 Volts DC. Since this is a non-regulated voltage this filament DC voltage is very depending on the mains voltage. If the filament voltage is more than 13.5 Volts DC you can apply a small 2– 5 watt resistor in the common (0) voltage lead of the 12 Vac wire. This resistor will be in the range of 0.33 and 1.8 ohm. Since its not exact science it's a bit trail and error.

(Added 08-07-2006)

Tip: I've put in the last MP-1 nylon spacers of 1.2mm thickness between the chassis and top and bottom cover. This way you create not only a bit more space but also some extra ventilation around the unit.

Please don't hesitate to contact me if you have ANY questions:

[i.info@machinator.nl](mailto:i.info@machinator.nl)

Good luck!

Machinator.

Appendix 2:

With special thanks so far for giving input to optimize the kit:

Who	When	What
JS	01-05-2006	Change mounting bracket to slot both MB and MP1. Will be done from batch 2 onwards. (B002)
PHOSGEN	29-06-2006	Some more detailed info about fitting the connector to the board.
Machinator	29-06-2006	Add the part of re routing the midi cable around the new tranny kit.
Machinator	29-06-2006	Add appendix 2 to the sheet.
Steve S	08-07-2006	Add note about AC voltage. (no polarity)
Steve S	08-07-2006	Spread out the wires of the 12 and 18 volt section.
Machinator	08-07-2006	Ad the tip about the spacers between chassis and top/bottom cover.
Machinator	09-07-2006	Add extra pictures of the 3 and 6 way terminal block.

Appendix 3:

Know bugs / changes in the design:

Who	When	Issue	Solution.
Machinator	10-07-2006	M3 mounting screw little to short.	Place 10mm screws instead of 6mm into the bracket.
Machinator	11-07-2006	Insulation plate not centred correctly.	Make a fitting mould for the kit to do a final check if the two screws and insulation plate are good in place.
Customer report	12-07-2006	Hum after placing tranny mod and placing new power supply caps. Root cause: Capacitor of the 5 volt rail was mounted the wrong way around. (+ and - of the capacitor where reversed.	Put in new capacitor the correct way. Dead silent after that.
Customer report	22-07-2006	Noisy MB-1 after changing tranny swap.	Still in progress waiting for some feedback of the customer. Probably the MB-1 does have a problem in the basis. Advised to send the MB-1 over to MJMP have closer look at it.
Customer report	25-7-2006	Strange hiss in the MP-1 output signal.	Place new ECC83's. Old ones send to me and tested very badly, massive cathode leak! Send a new pair of JJ ECC83's, problem solved, dead silent.