

Luxman DML replacement manual

by PE1MMK (construction)

1. Dismantling

Take your amplifier to a appropriate place to work on it, use a small cloth or plastic cover to place your amp on, otherwise you might scratch the case or front. Do not plug it into the mains socket.

Open the amplifiers top and bottom by taking out all screws that keep these two covers in place, put all screws in a pill-box or likewise small box.

Now take a multimeter and locate and check on the main big power-capacitors if any voltage is left on them, in some amps you have to locate the main power supply pins on a power supply pcb: take a look at the service manual of your amp. In some stereo amps there are separate power supplies for each of the two stereo amps. If there is no voltage = 0V, then you can continue with chapter 3. If there is any voltage left, and there will be on many amps of the series where the DML reside in, sometimes the full supply Voltage of the power supply, being something like +/- 50 Volts, then you first have to do a safe discharge of the capacitors before you continue to chapter 3, in chapter 2 you will see how this is done.

[Leave only a few mV like 50 to 75 mV on the caps.](#)

2. discharge

Take a power resistor of at least 5 Watts with a value somewhere between 100 Ohms to 300 Ohms. Connect this resistor to the + and – of one of the power supply capacitors for 2 to 3 seconds. Then repeat this with the 2nd power capacitor. Then repeat this again for the first power cap., then repeat this again for the 2nd one and do this at least 3 times. Then check again with the multimeter if any Voltage is left. If not repeat this as long as there is no = 0Volt on the power caps. Even when the multimeter is set to range 200 mV. If you have two separate power supplies: do this whole procedure on each power supply.

3. location

Locate where there are the old DML units on all printed circuit boards. In some pre-amps there may be 4 or up to 6 DML modules. Check top and bottom of the pcb's for accessibility and desoldering space. There may be sub tops and sub bottoms or metal boxes involved in some amps. Displace all wires that block the DMLs. Be sure not to burn other parts with the soldering iron before desoldering.

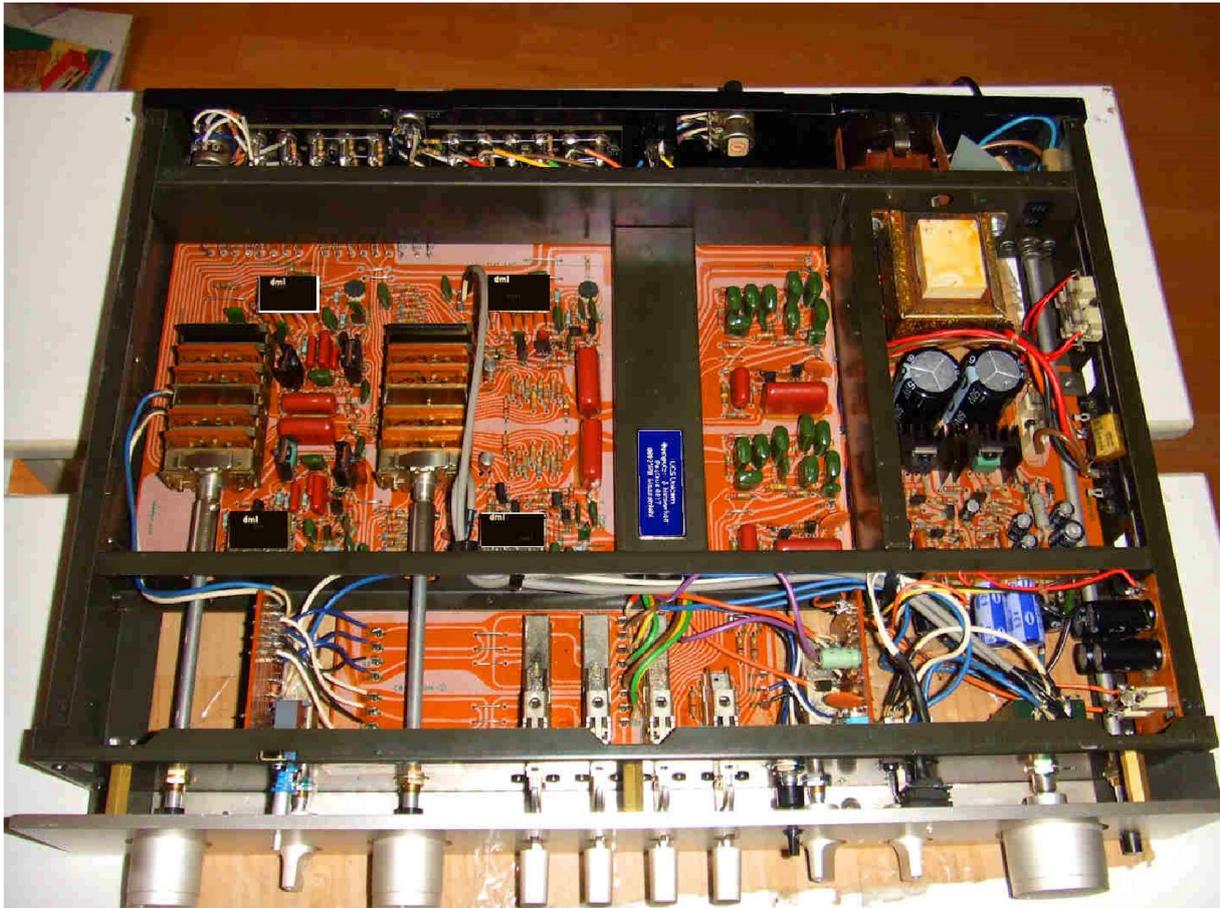


Photo1

4. desoldering

Take your desoldering devices and plug them in the mains. Use a soldering iron and a desoldering-vacuumpump or a 'complete solution' desoldering device or any other for the desoldering job. Do not use a soldering iron only, you will get into trouble. Desoldering is a job that should be done quickly, otherwise you will fry the pcb and the copper leads will be damaged. If you have more DMLs in your amp, desolder them all now. Desolder the old pots as well.

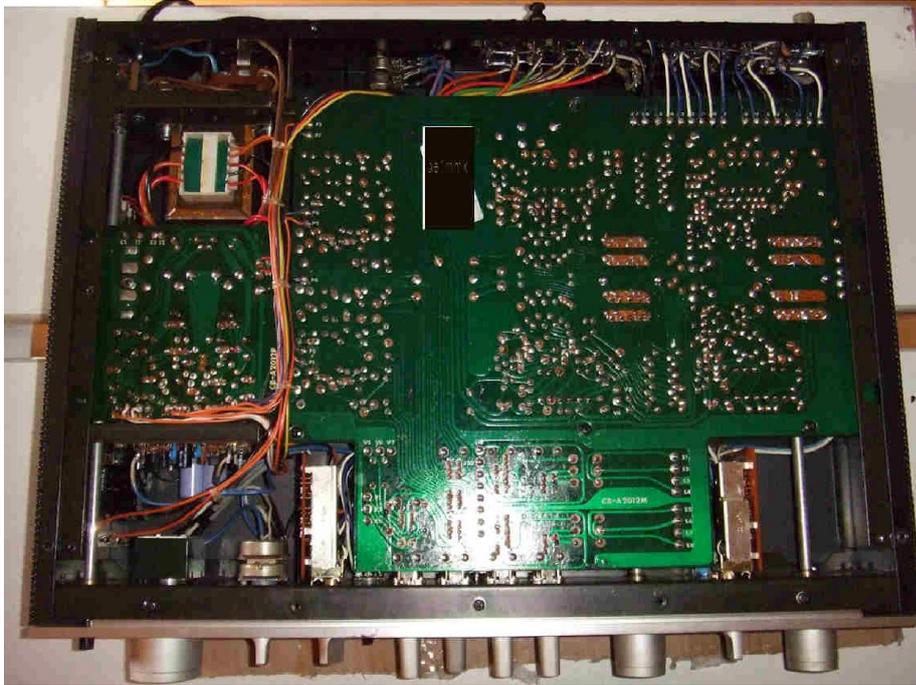


Photo2

5. cleaning

Now the pcb should be cleaned from all residue of the soldering and desoldering. Cleaning solvent and possibly a small knife may be used. After cleaning a protecting and flux fluid can be used to protect the pcb in future and to improve soldering the new DMLs. Let it dry.

6. replacing

Now the new DMLs can be put in place on the pcb(s). Placement should be done as follows: take the anti-static bag that the DMLs reside in, de sure one side of the bag is open, then touch with one hand the chassis of the amp and then with the same hand take out of the bag the DML unit, place it in the pcb, then repeat this for the next DMLs, every time touch the chassis of the amp, to be sure there is no static voltage between the DML and the amp.

Check and double check if they are placed ok, with pin 1 on hole 1.

If you use sockets place the sockets now, without the DMLs. Turn the amp and start the soldering process. Soldering should be done with appropriate soldering device and correct solder made for electronic devices: 60-40 or 60-39-1. Do not use any other solder like silver solder or flow-solvents. Use correct temperature on the soldering iron. Soldering should be done quickly, the solder should flow swiftly and smoothly, do not hold the soldering iron on

every pin longer than one second, let cool down between soldering every pin. All pins you have soldered should look like on the pcb of the DMLs. No tons of solder should be applied on the pcb and soldered pins should look clean and you should be confident that an excellent electrical connection has been made. Check and double check all soldered joints, clean again if required. Now you can place the DMLs into the sockets if you used the sockets. If you are not familiar with soldering electronic devices check the internet for a short manual and do some exercise first.

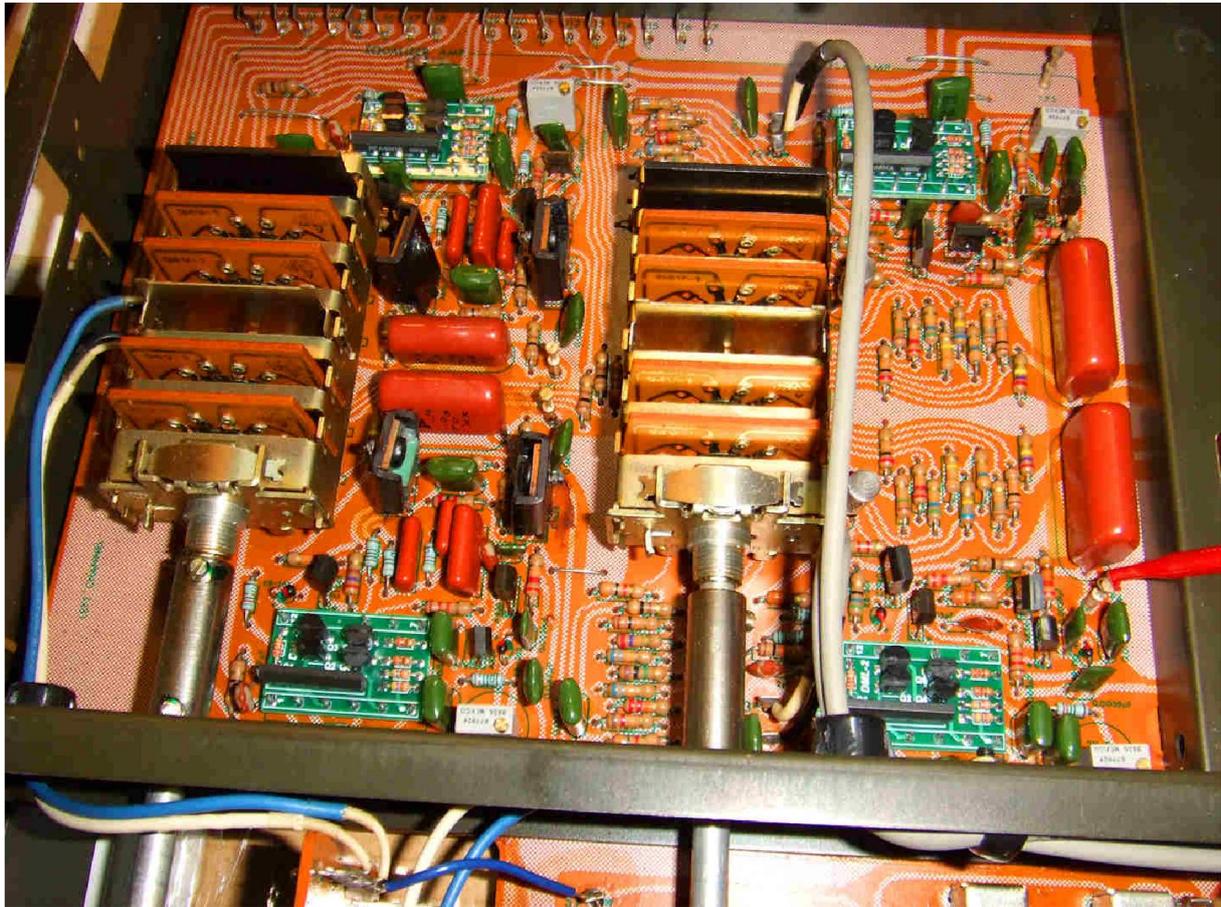


Photo3

7. Adjustments.

Adjust all 4 or more testpoints as described in the service manual of your Luxman, by setting the DC offset to 0 Volts with a DVM at 200 mV range. Start your measurement at 20 Volt range and then goto 2 Volt range to end at 200 mV range, again and again setting the reading to 0 Volt. Repeat this procedure after 10 minutes of operation.

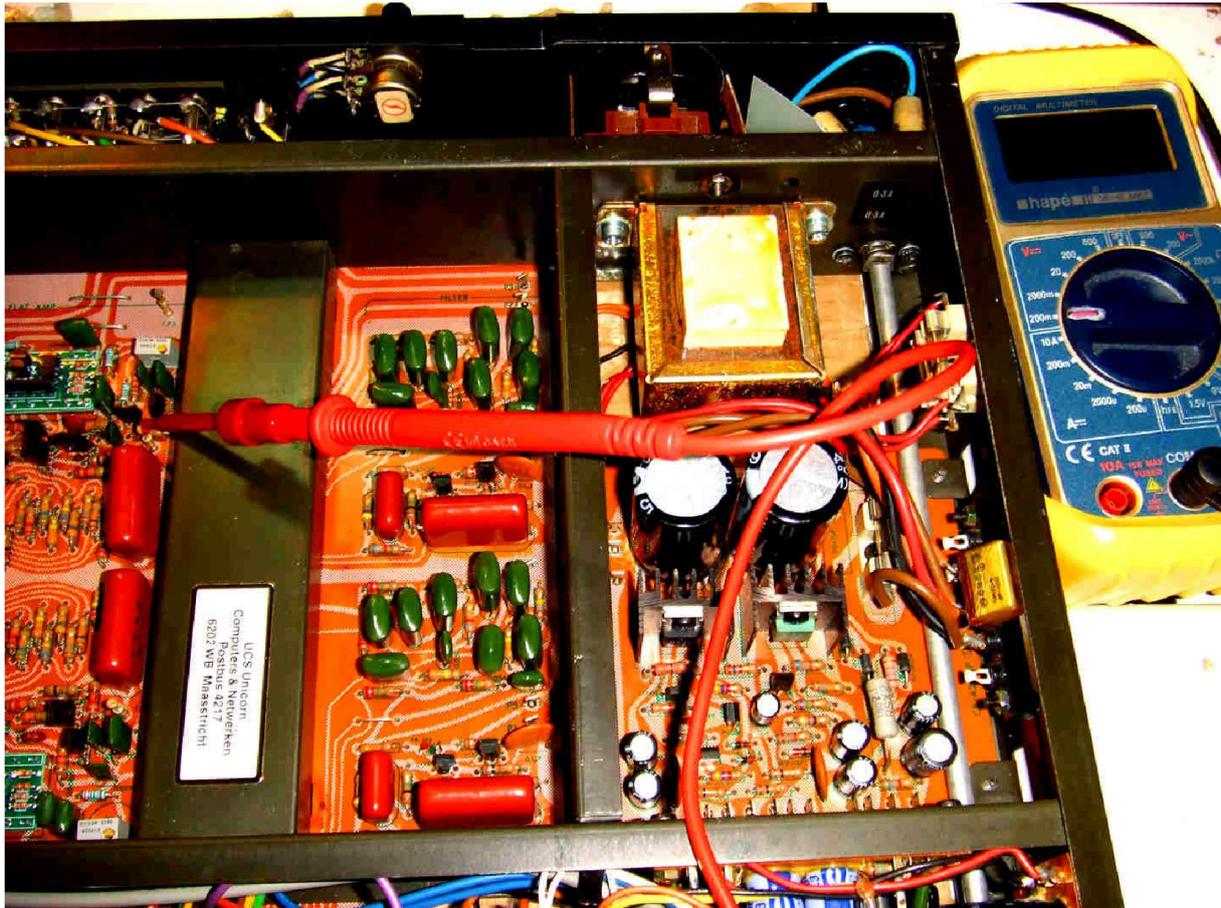


Photo4

8. Testing your Luxman.

Connect your Luxman to the mains and switch it on after checking all test equipment is disconnected and check if it works as it should.

When not check all steps starting at 1.

2013-05-25, Hans Hilberink, PE1MMK, and the secret DML lab California USA.

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