

Adding True Bypass to a russian Big Muff



The russian made Big Muffs are very common and often found. They are much cheaper than the US made model but suffer from cheaper parts and are not true bypass. The black russian Muff (picture 1) is the one, actually produced, the green one (piczre 2) was its forerunner. The tan colored russian made Muff (picture 3) is very rare but can still be found and the "Mike Matthews Red Army Overdrive" (picture 4) is a very rare bird. Internally there is not much difference between them and the best mod for them is to make them true bypass, because they are sucking tone in bypass-mode ! Thanks god this is not a difficult thing to do and it´s the same procedure for all four models. Soundwise there is a lot of discussion about the differences of the models and first and foremost the differences in tone compared to the US model and the vintage Muffs. I own every existing Muff model, so I think this is a good base to compare them and for me the russian boxes are sounding great ! They don´t sound like the vintage ones and they don´t sound like the US model, but that´s allright - if you want an other sound, buy one of the other Muffs. The green russian Muff is the fuzziest one of them all, a very cool pedal. The black one is more of a heavy overdrive/distortion, very creamy and sustaining but not fuzzy. If you are looking for that certain "Korn" or "Smashing Pumpkins" (Siamese Dreams) sound, you should simply try them.

If you open one of this boxes and have a look inside you will see what I mean, you will find a lot of flimsy and cheap parts, cheap cables and really wild assembling methods. Getting trouble is only a matter of time and according to Murphy´s law the trouble will start when ;-)

From my experiences with dozens of this boxes here is a good advice: ***if you decide to keep one of this Muffs to use it regularly on stage, spend some time and money to upgrade it with some good quality parts.***

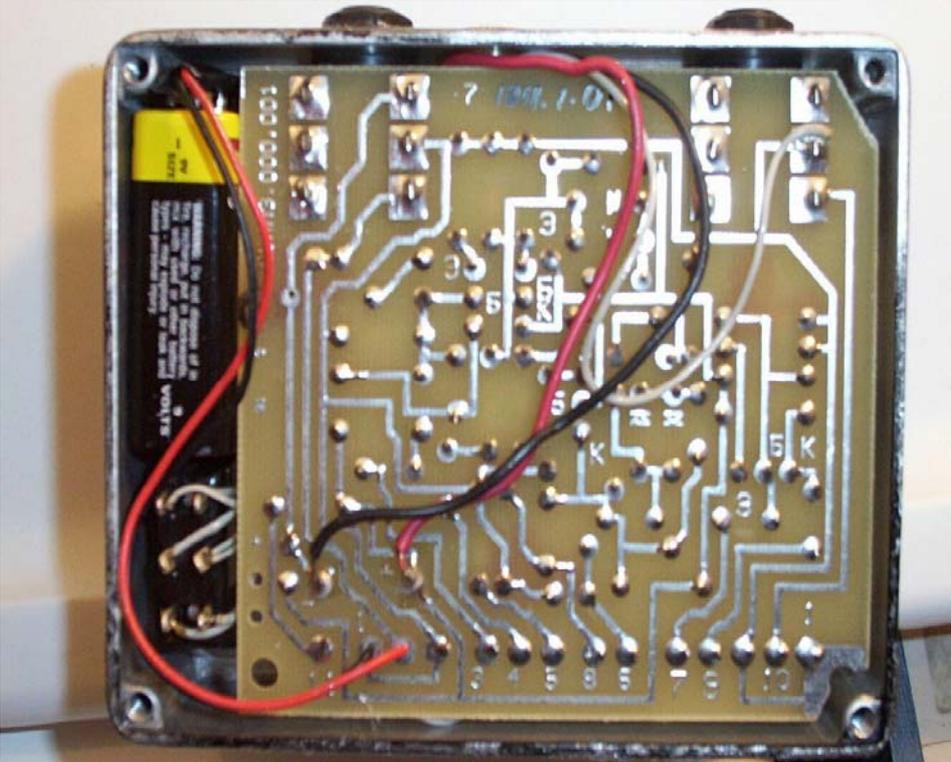
From my point of view it´s worth the time and money and you will receive a really good sounding box.

Here is what to do:

- 1.** Change the switch for a 3PDT and make the thing true bypass. For the green russian Muff you will need a metal washer to install the new switch. For the "how to" please read one. During this procedure you can also change the LED to any type, diameter and color you want to (with or without bezel) because you already have to resolder it while true-bypassing the unit.
- 2.** Change all the pots with good quality ones (Mouser, CTS ...) and stick on the knobs you like.
- 3.** Replace the super-crappy jacks with heavy duty ones (I prefer Switchcraft all the way). Now you can also reverse the positions of the jacks to make it more compatible to other boxes (input=right jack / output = left jack). You also need to fasten the complete PCB in a different way now, because the factory installed jacks are holding it in place. Don't do the same shit again, use cable connections and plastic stands for the PCB. There is room enough inside the boxes, so there is absolutely no need to go for the stock method.
- 4.** Drill an additional hole and install an A/C jack - normally the russian Muffs don't have one. All the russian Muffs are negative grounded !
- 5.** Replace all the wires with good quality ones - the stock ones are of very poor quality and will break ! This requires some soldering work (and time) and experiences how to solder on PCB's

If you want to go further and mod your unit, you should desolder all the transistors, replace them with sockets and stuck them back but take care for the correct pinout ! So you can try different trannies to compare them (gain, noise ...) directly. Another good mod is to replace all the super-cheap resistors with metal-film resistors (1% tolerance) and all the caps with high-quality film caps. This will enhance the sound drastically, even when you stay with the stock values. From there on you can do any wild mod you want, there are dozens of webpages out there for this subject - you can do more/less gain mods, the so-called "Sustain Punch - Creamy Dreamer" mod, EQ modifications feel free to experiment.

If you don't like the big cases, you can also rehouse the complete guts into a smaller box, the Hammond cases are really fine. Here you can see how it can look after this operation (photos from Davy Boggs from the LOOPER company - www.looper.com)



But now let's go and make the thing true bypass. The first way described here is a good way if you don't want to change the factory installed DPDT switch (6 lugs) for a 3PDT switch (9 lugs). You can also make the thing true bypass but without LED indication ! It's very simple, just follow this schematic and you're done:

First of all cut all the traces to the jacks and don't forget to make a note to where they lead. Afterwards add wires to the new traces:

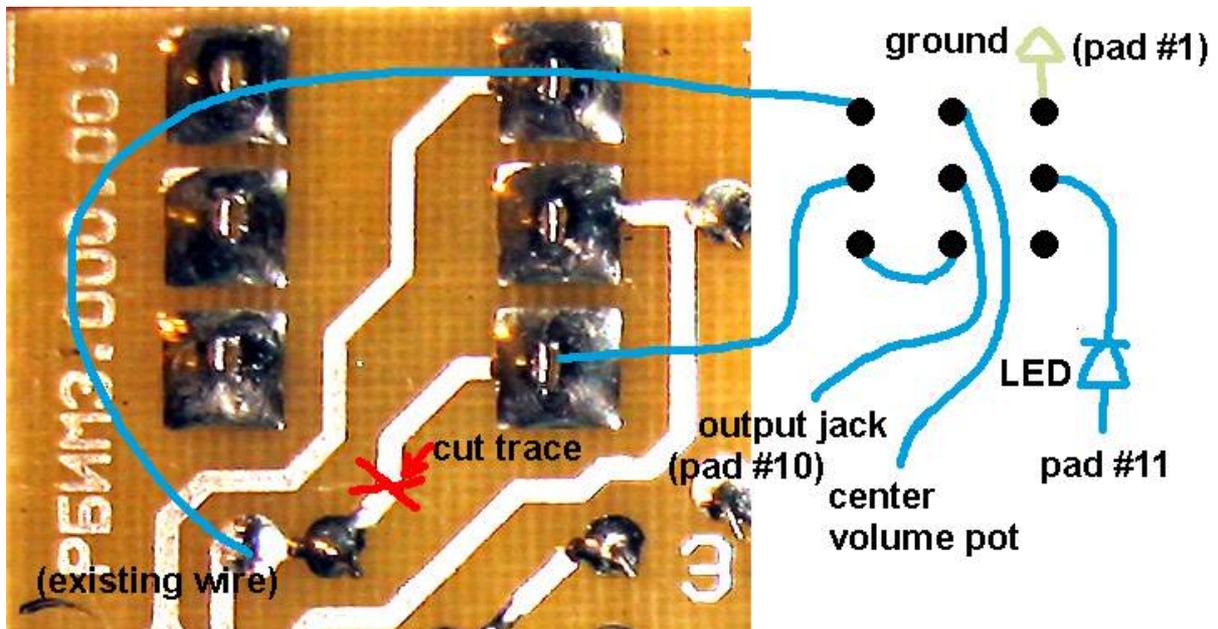
1. effect input and out
 2. jack i/p and o/p
- solder the other end of the wires to the dpdt

eff ip -----[]----- eff op
 jack ip -----[]----- jack op

[-----] <----- solder these two lugs together

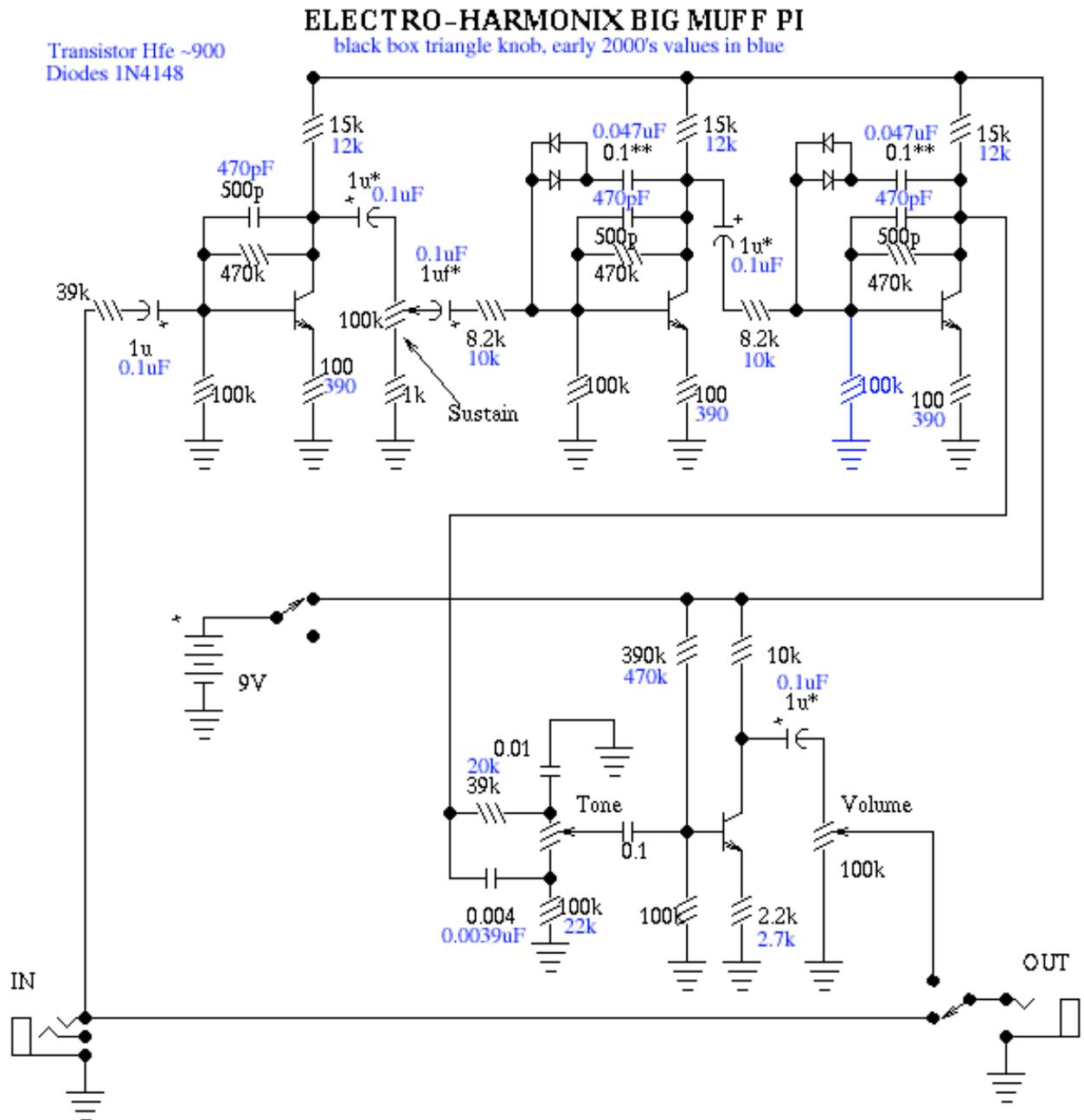
Make sure that the jacks are grounded to the circuit too

If you want to change the switch you will receive true bypass with LED indication, the trick is to cut a trace on the PCB and rewire the new 3PDT switch like this:



For further information you will find the circuit drawings of the black and the green russian Big Muff here, have fun !

Black russian Big Muff

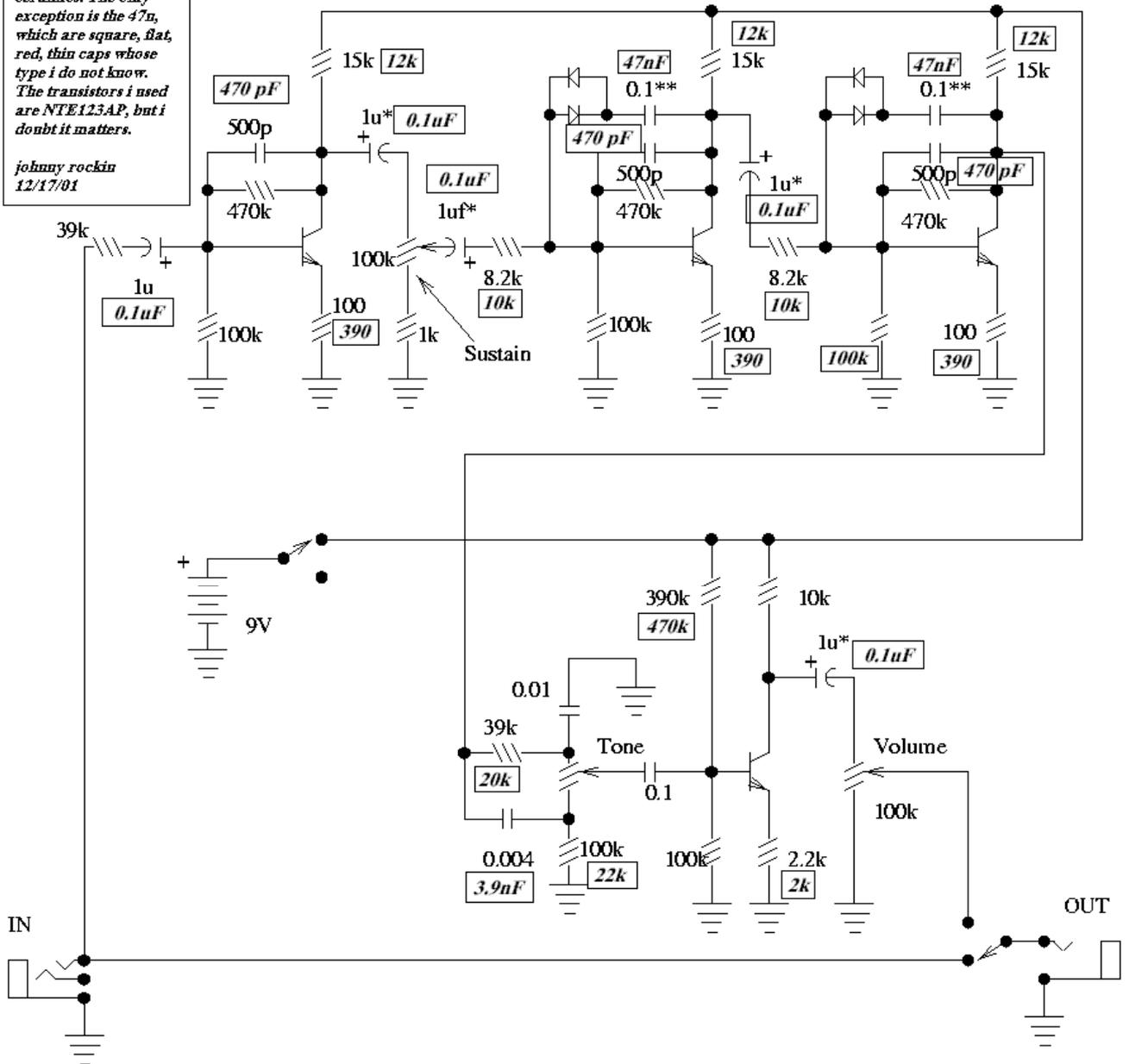


The EH Big Muff Pi would probably be improved by modern input-jack power switching and a DPDT bypass switch. This is the original schematic. The diode and transistor types are unknown. Probably any high gain NPN and 1N914s work. Coupling caps marked by a * have been reported to sound better if changed to 0.1uf as have the ** marked ones if changed to 1.0uf. Has 22uF power supply bypass cap also.

Green russian Big Muff

****Notes****
 All changes are boxed. All caps in the original are mylar. The reissue uses ceramics. The only exception is the 47n, which are square, flat, red, thin caps whose type i do not know. The transistors i used are NTE123AP, but i doubt it matters.
 johnny rockin
 12/17/81

THE GREEN RUSSIAN ELECTRO-HARMONIX BIG MUFF PI



The EH Big Muff Pi would probably be improved by modern input-jack power switching and a DPDT bypass switch. This is the original schematic. The diode and transistor types are unknown. Probably any high gain NPN and 1N914s work. Coupling caps marked by a * have been reported to sound better if changed to 0.1uF as have the ** marked ones if changed to 1.0uF. The original transistors were marked SPT 87-103, and the original diodes were marked 525GY or 523GY (hard to read).