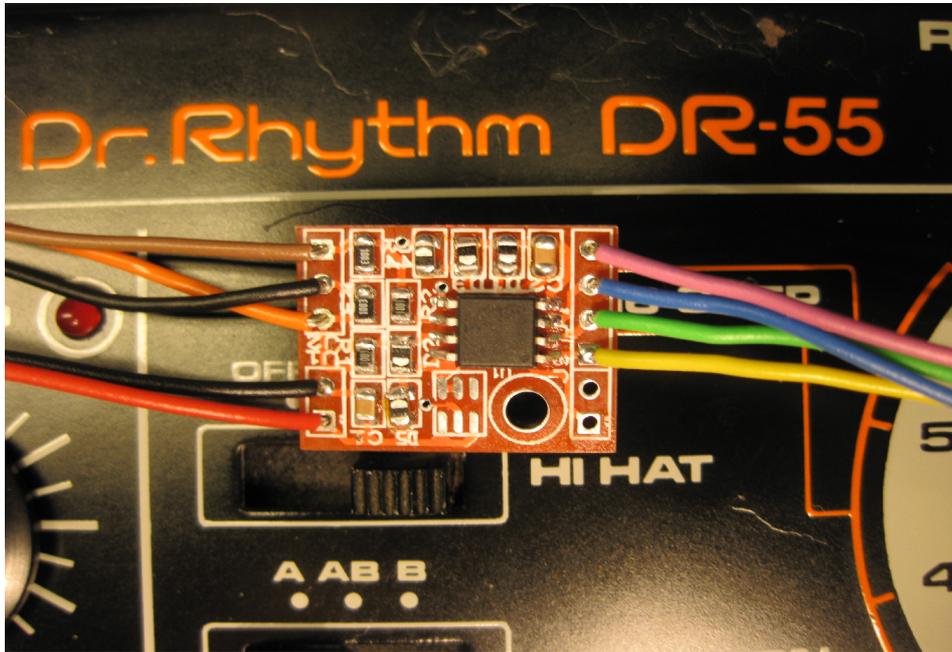


# Boss DR-55

$\mu$ Sync installation guide  
version 1.1, 31 July 2016



[www.artefacts.nl](http://www.artefacts.nl)

## **Introduction**

The Boss Dr-55 has no standard din sync input. With some quirks you can get the DR-55 running in sync thru the foot switch jack. Artefacts developed a piece of hardware to convert a standard 24ppqn DIN sync signal to the needed clock, start and stop signals to get the DR-55 running in sync. If no sync signal is present the Dr-55 uses it's internal clock and start/stop circuitry. The  $\mu$ Sync switches to the DIN Sync input as soon as a master start is detected on the DIN sync input. So no need for a switch to switch between internal and external clock. The current consumption is only 1,5mA. Check for all the drum machines that can be fitted with a  $\mu$ Sync. [www.artefacts.nl/products.html](http://www.artefacts.nl/products.html)

## **Before you start**

Before you buy and install this kit make sure you have the needed skills and tools to perform this modification and the DR-55 is fully functional. Although it is a simple modification it is important to read and follow the instructions.

Skills you need:

- basic metal working skills
- basic soldering skills

Tools you need:

- hand held drill or drill press
- step drill bit including a 16mm step or drill bit 12, 14 and 15,5 or 16mm
- a round file with a maximum diameter of 9 mm or smaller
- a small flat file(2 or 3 mm thick) or a square or rectangular file.
- Digital multi meter(DMM)
- soldering iron
- solder wick, de-soldering pump or de-soldering iron
- screwdriver philips #2
- heat gun

## **Opening the DR-55 and getting ready for installation**

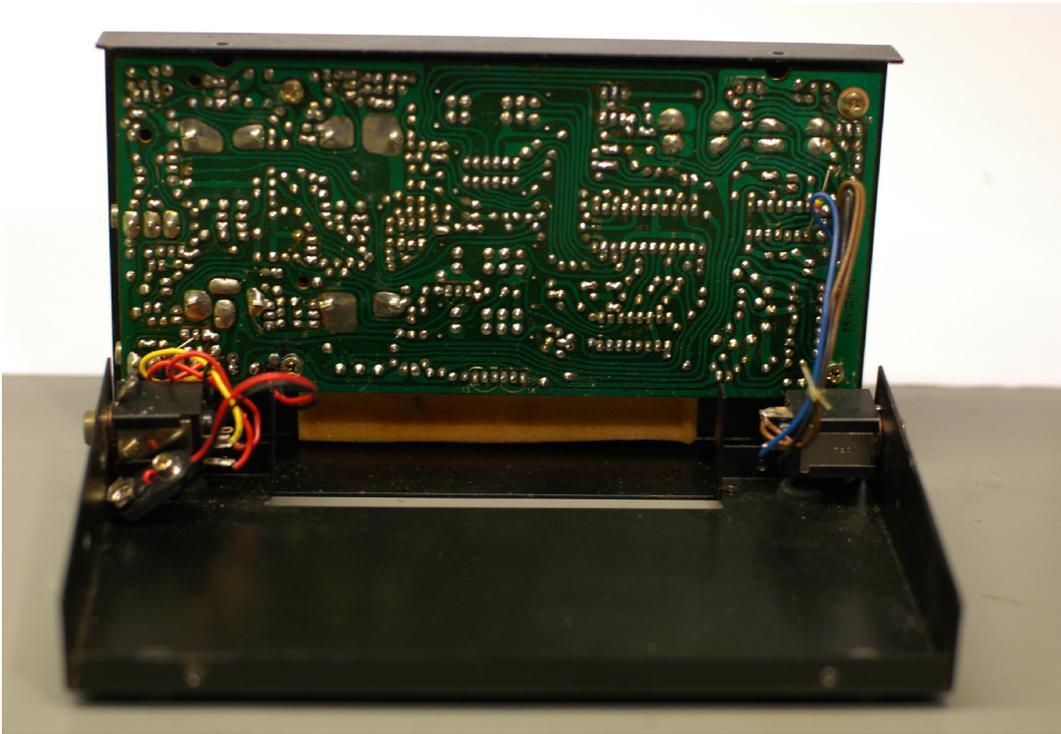
Open the battery compartment and remove the battery holder.

Disconnect the battery holder.

Remove all the knobs from the front panel.

Remove the 4 black screws with a philips screw driver #2

Now you can open the DR-55, open it on the right hand side and slide a little bit to right to free the mini jacks on the left side.

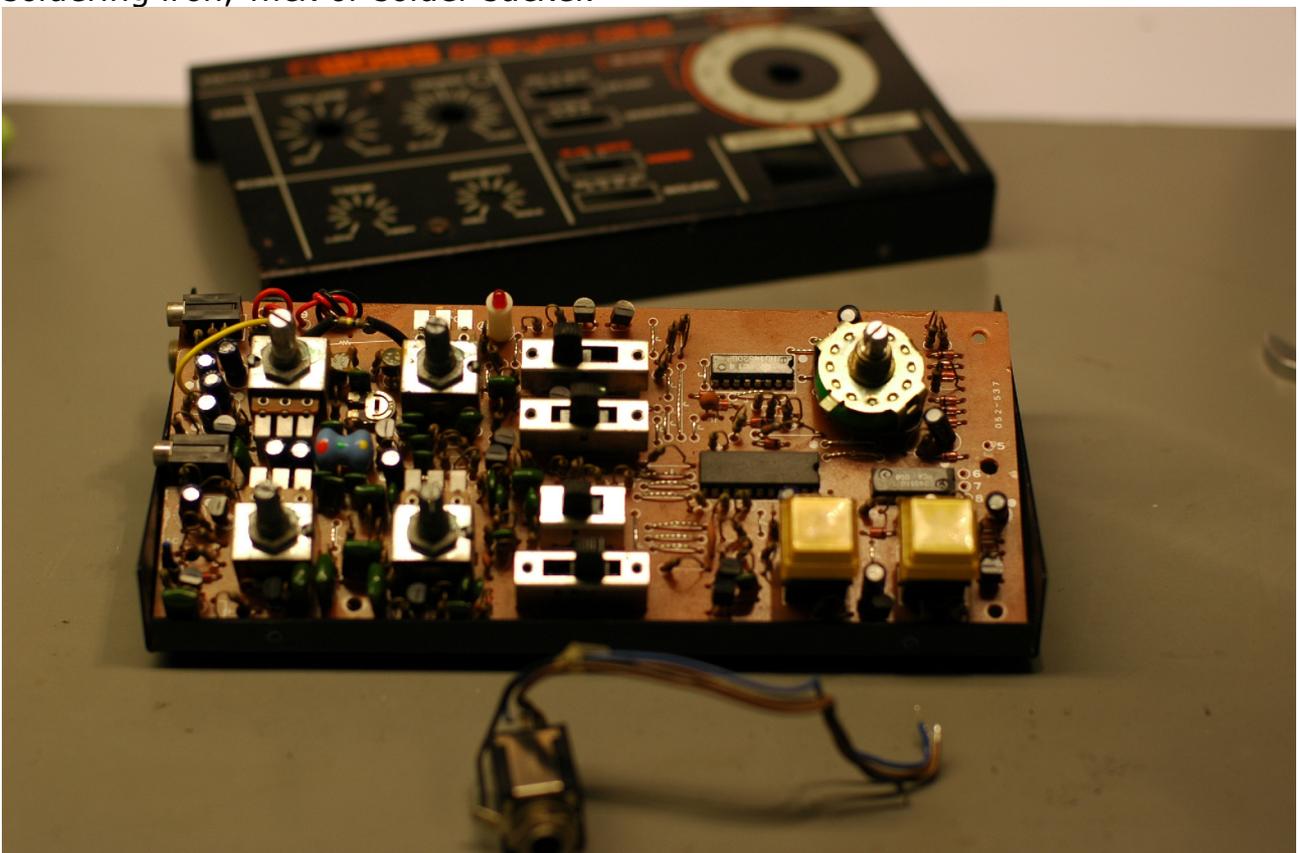


*Picture 1. The Dr-55 open.*

Remove the 4 screws on the bottom side of the pcb, (note that one screw has a washer) now you can remove the front panel.

Remove both the foot switch jack and the output jack from the lower part of the enclosure.

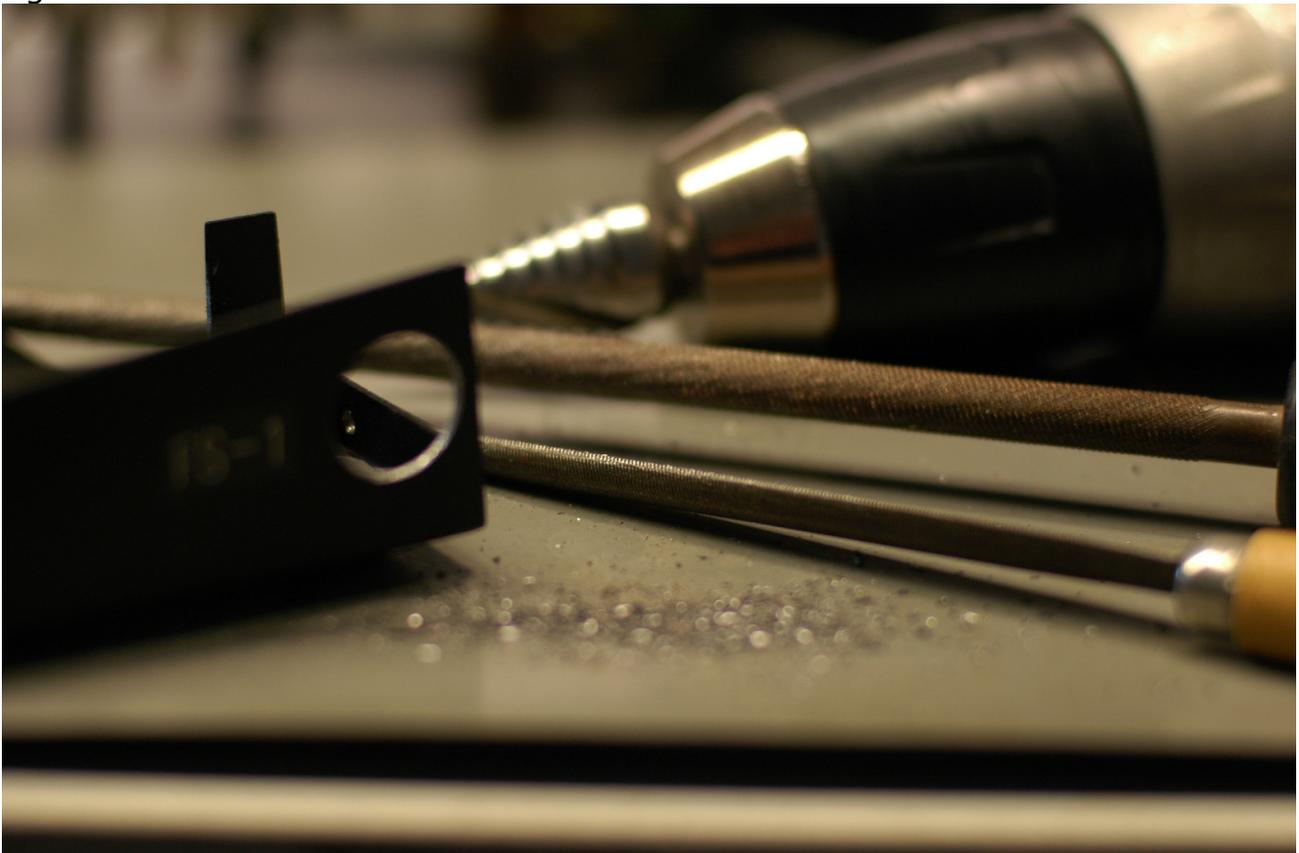
Remove all the wires from the pcb connected to the foot switch Jack, use a desoldering iron, wick or solder sucker.



*Picture 2, frontpanel and foot switch removed.*

### **Drilling the hole for the DIN sync socket**

The DIN sync socket will be fitted on the right side where the foot switch jack was. Because the foot switch jack is near the back side of the enclosure it is not possible to drill this hole bigger without destroying the lower part of the enclosure. You need to move the center of the Din sync socket to the front side of the enclosure with a round file. Use the drill bits to get it to the right size. Drilling is a bit tricky because the material of the enclosure is quite thin. So take it slowly and keep an eye on how much space is left on the backside. If you are not comfortable drilling the hole you can use the round file to get it to right diameter.



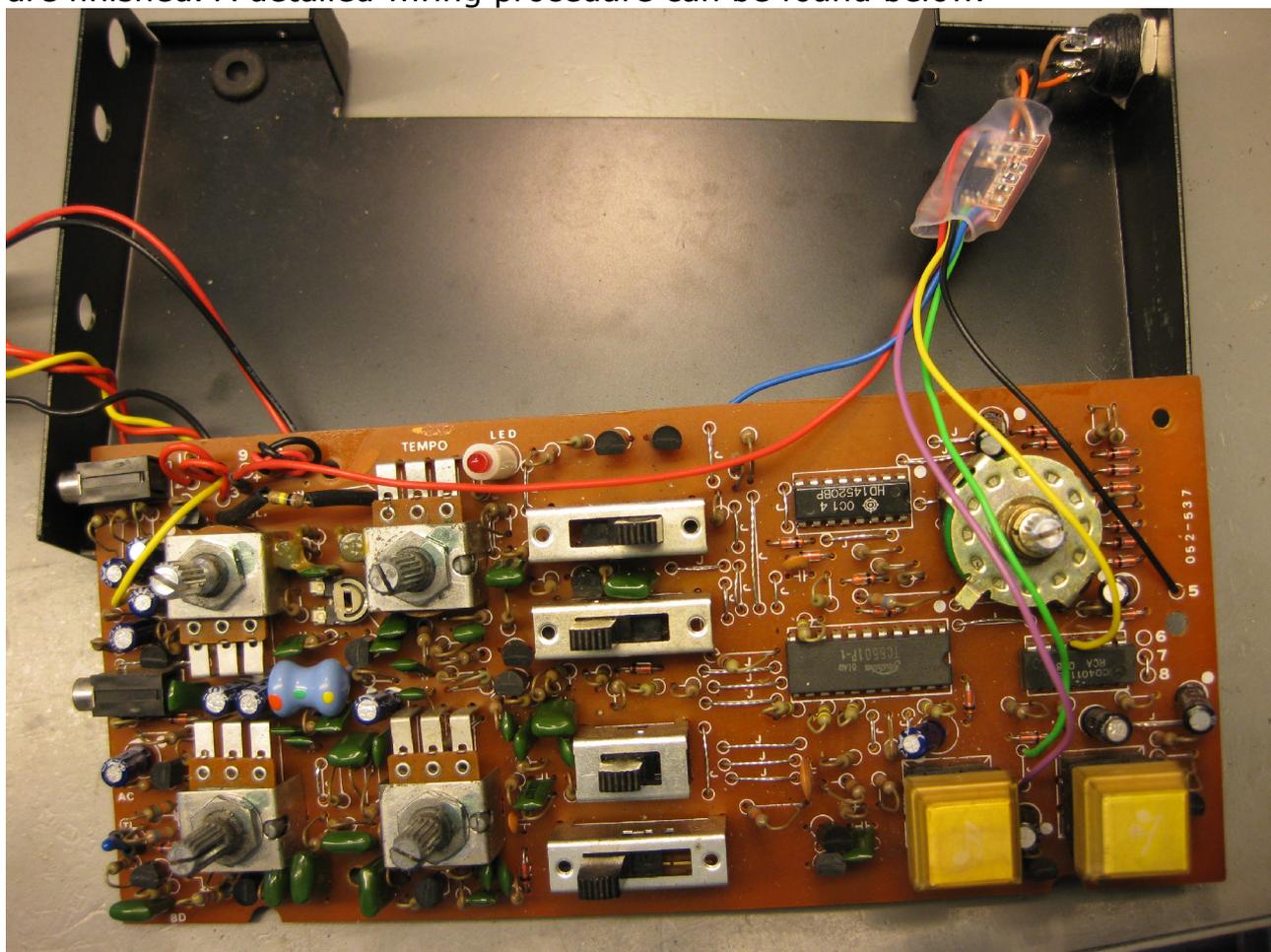
*Picture 3, the Foot switch at it's final size*

If you don't want to drill holes in your DR-55 you can use the foot switch hole and mount a stereo 6,3mm(1/4") jack. You have to make a conversion cable from 6,3mm jack to 5 way DIN.

Decide on the orientation of the DIN socket, I prefer to have the notch on the cable on the upper side so I can see it when I insert the din connector. There is a little notch on the DIN socket to prevent it from rotating in the enclosure. This is near pin 2 of din socket. You can use a small file on it's side or a small square/triangular file to make the notch fit.

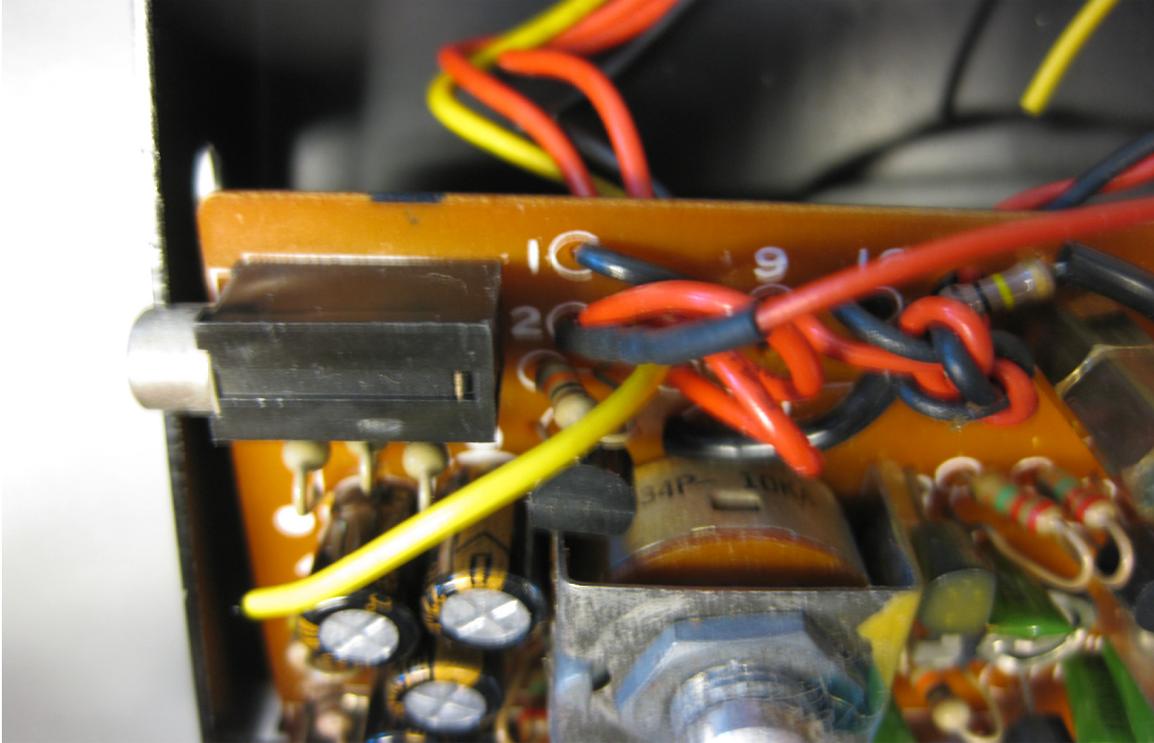
## Wiring

In the picture 4 below you can find how the wiring should look like when you are finished. A detailed wiring procedure can be found below.



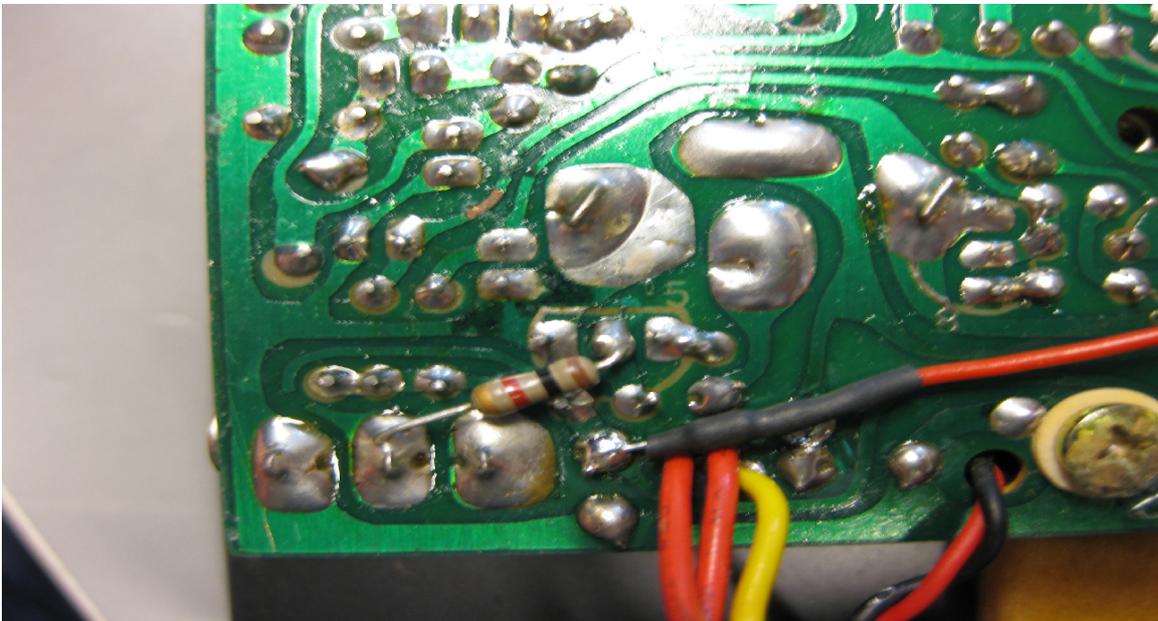
Picture 4, the end result when all wires of the  $\mu$ Sync with are installed.

Power – J1 Solder the long black wire on pad 5 marked on the DR-55 PCB. The red wire with the black heat shrink is connected to V+, and it to the red wire marked with 2. See picture 5.



*Picture 5, positive power connected tot pad 2.*

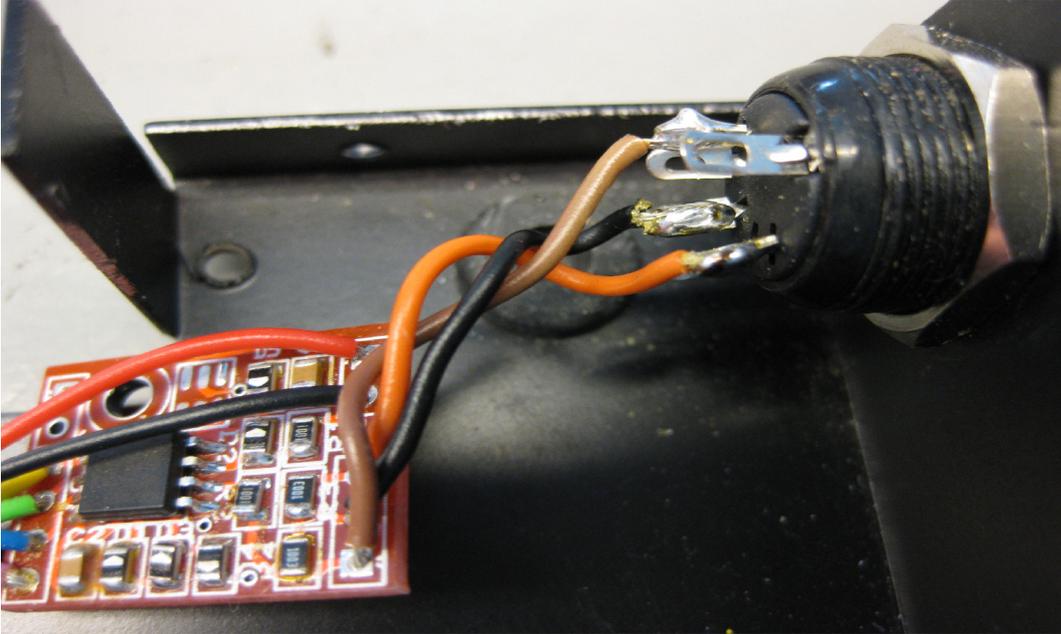
An alternative option is to solder it on the bottom side of the pcb.



*Picture 6, V+ connected on bottom side*

### *The DIN socket -J2*

If you wish to use the heat shrink to isolate the wires connected to the DIN socket this is a good moment to do this. Solder the brown wire to pin 1, the short black wire to pin 2 and orange wire to pin 3 of the DIN socket. Put the heat shrinks in place and use a heat gun to shrink them to fit.

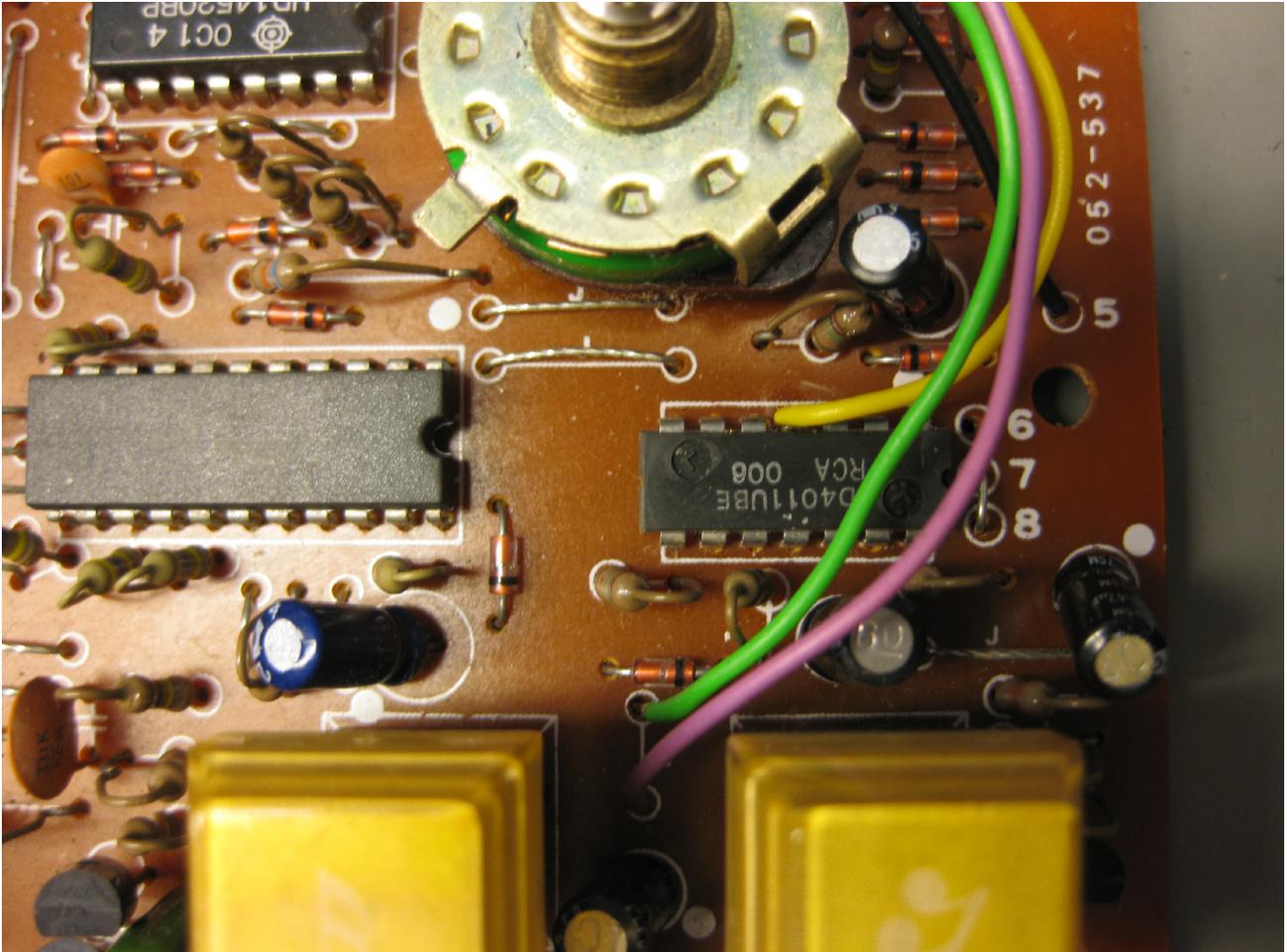


*Picture 7, wiring the DIN socket*

Before proceeding to the next step put the large transparent heat shrink onto the long wires so can isolate the  $\mu$ Sync board in a later stage.

### *Clock/Start - J4*

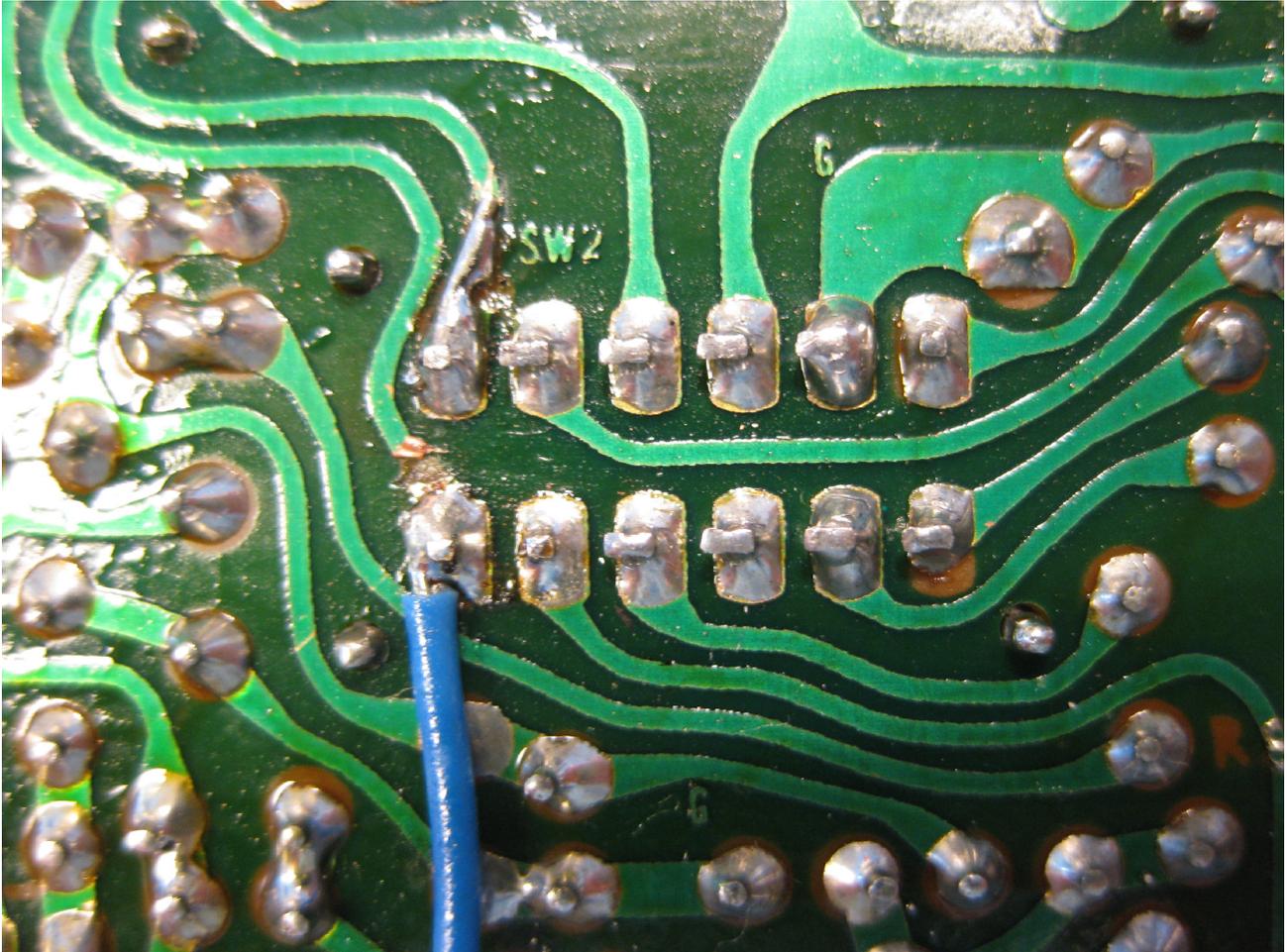
Install a jumper between the pads 7 and 8 marked on the DR-55 PCB. Remove the jumper between the start and stop button. Solder the green wire to the pad near the diode and solder the purple wire to the pad near the capacitor. The yellow wire is soldered to pin 4 of the 4011. Note the orientation of the chip, for details see picture 8.



*Picture 8, start/stop and clock wire.*

Locate switch 2 on the bottom side of the DR-55 PCB, cut the trace as shown in Picture 9, make sure it is disconnected (check with a DMM) and solder the

blue wire to to the disconnected pad on the switch.

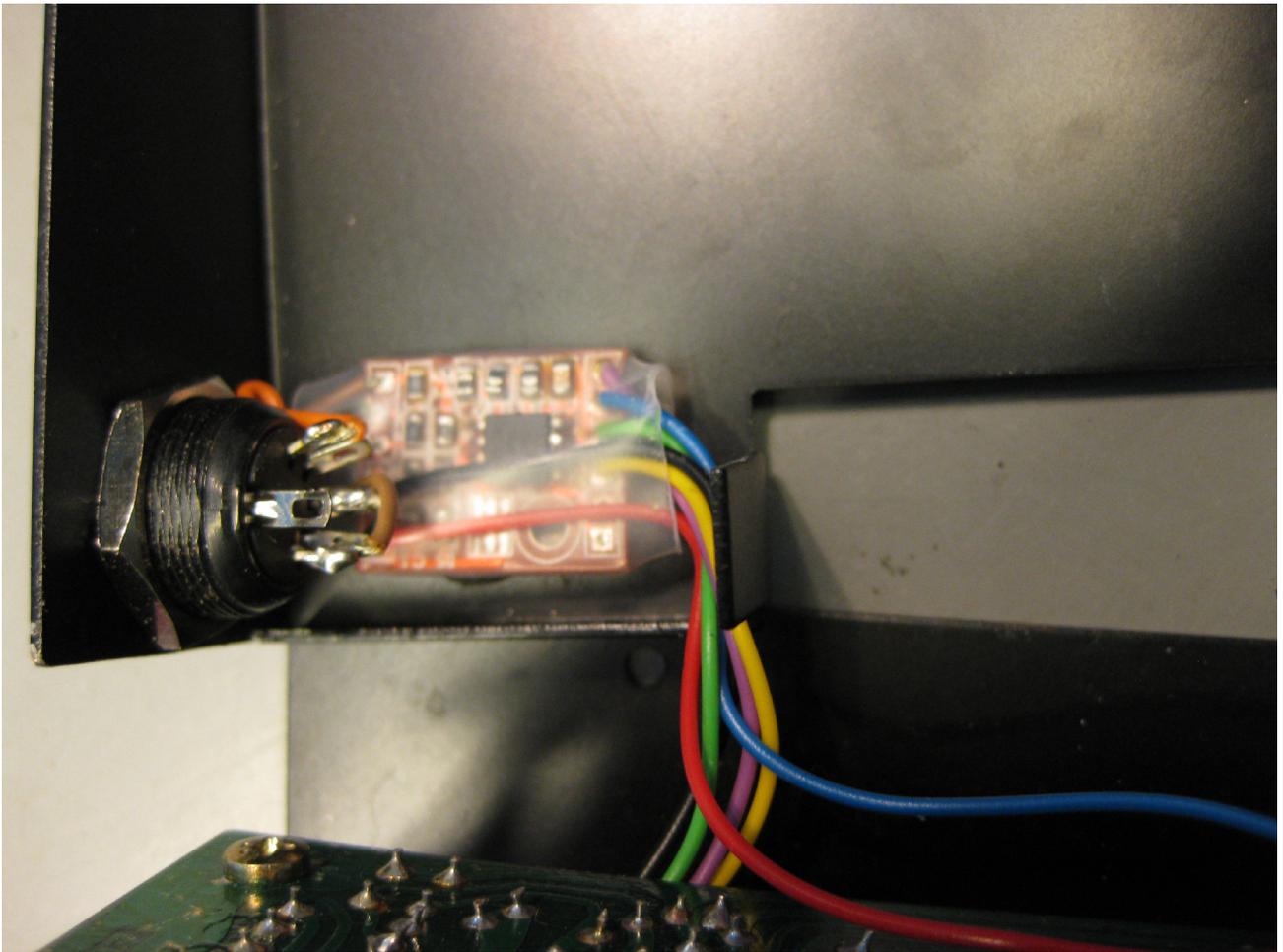


*Picture 9, Bottom side of the pcb.*

### **Test**

At this time it is wise to test DR-55 and check if everything is working as it should. Make sure that both the electronics of the DR-55 and the DIN sync kit are not touching any metal parts. Connect the battery holder. Turn on the DR-55 and check without a sync signal if the DR-55 is behaving in the same way as before. So start a rhythm and change the tempo. If the DR-55 runs OK, stop the DR-55 and connect a sync cable to din sync source. Test if the DR-55 is running in Sync with the master. If you use a Roland Tr-606, TR-808 or similar drum machine make sure the master is in the right scale i.e. 24ppqn.

If the test works out fine put the heat shrink over the  $\mu$ Sync PCB and use a heat gun to shrink it to a tight fit. The  $\mu$ Sync can be placed in the free space where the foot switch jack used to be. See picture 10.



*Picture 10, location of the  $\mu$ Sync pcb.*

Now you can re assemble the DR-55. Do not forget to install the dust guards on the sliding switches and the isolating washer on the bottom of the pcb!