

**LR Phono Corrector**



by Jeffrey W. Jackson and Dave Slagle

2020

Our philosophy distilled into a single photograph: the inside of our chassis contains the best parts in the industry... 80% nickel output transformers housed in non-magnetic brass end bells... mu-metal shielded internal black boxes encasing four 80% nickel inductors used in our capacitor-free RIAA equalization circuit... Teflon sockets... nickel power supply chokes... silver jacks... you know, the good stuff...

### **WARNING!**

**This amplifier operates at lethal voltages. Do not ever reach under the amplifier or even move it unless it has been unplugged from the wall for a full two minutes. Reread this paragraph. Make sure your family understands this. It was common knowledge in the early 1900's. We have lost this knowledge. Let us revive this and other wonderful things from the past.**



### Initial Setup and Operation:

\_\_\_ Do not insert the power cord yet. After unpacking, find a suitable placement for each chassis within the system. The signal chassis should reside near the turntable to keep the delicate low level phonograph signals away from high power transformers in amplifiers and AC power in general. The power supply should rest on a very sturdy shelf or the floor and should ideally be located quite far from the signal chassis to prevent magnetic interference via air transmission. The supplied umbilical is two meters long to allow the power supply to be placed as far away from the signal chassis as required. Insert the umbilical. Confirm that the voltage displayed on the combination power cord inlet, fuse holder, switch is set to your country's line voltage.

\_\_\_ The corrector is a moving magnet (MM) type unit with a 300K input impedance. For use with moving coil (MC) or other low output cartridge types, an additional step-up transformer (SUT) or active stage is required. The signal chassis has three sets of RCA jacks labeled "Load", "In" and "Out". A grounding lug is also provided. The "Load" jacks are only used if an additional resistive or capacitive load for the cartridge is desired. Please see forum discussion on the Intact Audio website for more information on this topic:

<http://www.intactaudio.com/forum/viewtopic.php?t=752>

If paired with an external SUT, the tonearm connects to the SUT, and a short shielded cable connects the SUT output to the "In" RCA connectors. The tonearm ground is attached to the SUT and then a wire is connected from the SUT ground to the phono ground lug.



\_\_\_ The phono corrector has two power switches. Both are located on the power supply chassis. One is on the rear with the power inlet. The other is on the front; on the right side near the bottom. The back switch is intended to be left on and the front switch is for daily use. Make sure both switches are in the off / down position and connect the power cord.



\_\_\_ Make sure that the system volume is turned all the way down and flip the back power switch. Now flip the front switch. You should be able to see the tubes light up through the top ventilation slots on both the signal and the power chassis. The unit will require approximately fifteen minutes to fully warm up and settle in. Drop the needle on a record and gradually turn up the volume!

## Troubleshooting:

### No sound:

- Confirm correct tubes are installed in the correct sockets.
- Verify the tube heaters are lit.
- Look for a green LED glow in the back of the signal chassis.
- Check the fuses.
- Confirm that the fuse holder voltage selection is for the correct line voltage.

### Hum:

Tracking down hum is a bit of a black art and no two systems are identical, so here are a few tips to help quickly identify the source. All of the following should be done with the system volume at a low setting so that the hum is just audible. Never plug or unplug cabling when the phono corrector power is on. Always mute or turn the system off when making cabling changes.

Low level, low frequency hum at power line frequencies 50/100hz or 60/120hz is typically due to magnetic pickup of stray power signals by the signal chassis. Place the PS as far away from the signal chassis as possible. With the system volume set to a level so the hum is just audible, carefully move the signal chassis to different positions, listening for change in the hum level and character. If the hum level changes, you have found the sensitive piece, and now can locate and orient for minimum hum.

If the hum has higher harmonic content, and the hum is more of a buzz, then a ground loop is the likely culprit. Make sure you are using a shielded interconnect at the input of the unit. If you hear a difference in the character of the hum when you touch the input cable then try reversing the direction of the cable. This will reference the shield to a different ground potential. Try moving the tonearm ground wire connection from the step up device to the ground lug on the signal chassis. The goal is to find something to affect the amount and character of the hum. Find the cause, so that a cure can be found.

### Errata:

Please note that you should always turn your system on from front to back, i.e., phono corrector, then preamplifier, then power amplifier. The shutdown sequence will be exactly the opposite. This prevents your speakers from getting any damaging spikes or pulses from any power supplies. It is another one of those forgotten lessons of yesteryear.

### Tube rolling:

When tube rolling, turn the amplifier off and wait a full two minutes before

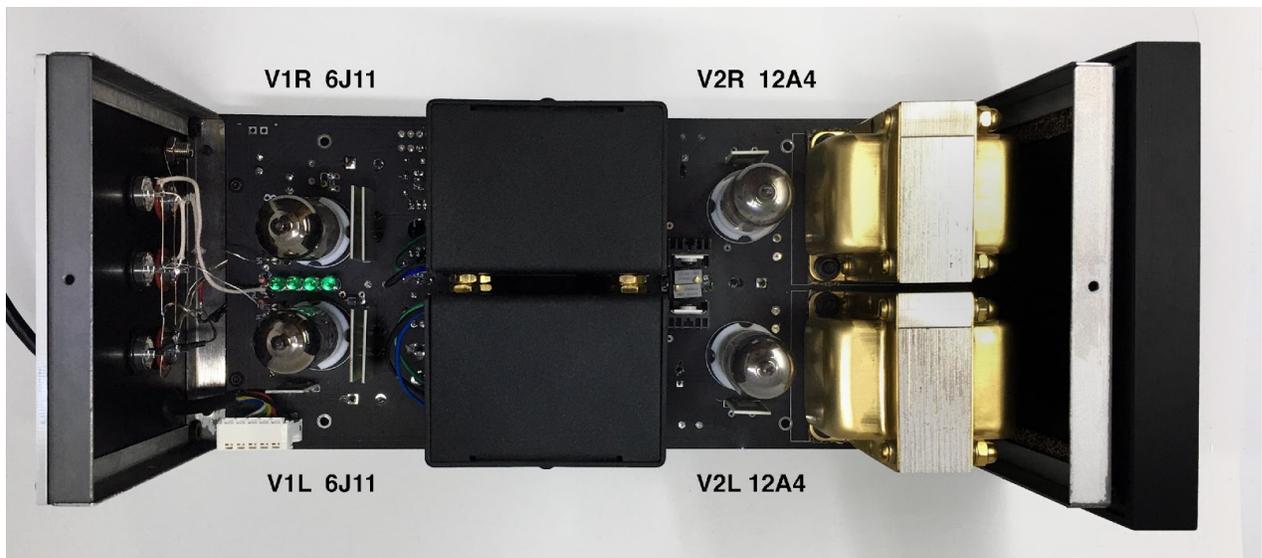
switching tubes. This is done for two reasons. One, the power supply must fully drain to avoid any shock hazard, and two, the filaments of the tubes must cool down. The tubes are very fragile until they have cooled. Once cool, they are actually quite robust, but please be careful when handling them.



To access the tubes, use a 2mm hex driver to remove the 10 button-head screws on the appropriate chassis. Gently slide the cover back and then up and set it to the side. The tubes and sockets are now exposed.

The Power supply has a pair of 6DA4 rectifier tubes and the signal chassis has two 6J11 input tubes (V1L, V1R) and two 12A4 output tubes (V2L, V2R).

With the cover removed the input and output tubes can be located according to the picture below.



#### Alternative Tubes:

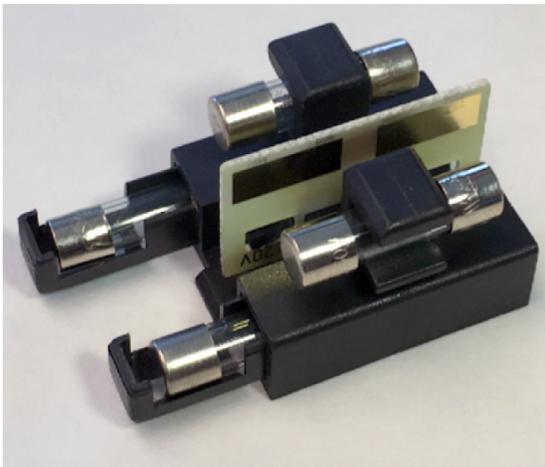
We have evaluated the sonic character of the various input tubes that can be used in position V1 and have determined that the Russian 6J11 (6Ж11) gives the most balanced and musical sound. This is a premium quality military grade tube that has more than double the internal pieces of comparable tubes, which results in superb structural integrity and very low microphonic behavior. Alternatively the D3a/7721 or the E280F/7722 can be used to obtain different sonic flavors. The output tube is the 12A4 which is chosen for its combination of gain and sonic

character. If the overall system gain is sufficient, substituting the 12B4 will reduce the gain by 10dB, decrease the output impedance, and typically results in a fuller, more romantic sound. As with all tube circuits, changing tubes can cause slight channel imbalance and we are always available to help address any issues that may come up.

Fuse holder:



The fuse holder is in the middle of the IEC inlet. It is accessed with a small flat blade screwdriver. The holder has dual voltage designations on it and can be rotated 180° and installed to change from 100-120V to 200-240V to match your line voltage.



The fuse type is 5x20mm "2at" which is a 2 amp "slow blow" device. Spares are held inside the slide out compartment. Both the hot and the neutral lines are fused so make sure to check both if the unit will not power up. Fuses are safety devices and it is not unusual for one to occasionally blow and this should be the first thing to check if a unit will not power up.

I think that is all... Enjoy!... and please give lots of feedback... it is how we progress!

With sincere gratitude,  
Jeffrey and Dave



## EMIA Phono Specifications

---

MM RIAA phono corrector

two chassis construction for isolation of power supply

direct tube input directly coupled through LR based RIAA equalization to a single triode output stage

wide bandwidth Permalloy (80% nickel) transformer output

[signal path is wire, tube, LR EQ, tube, transformer!]

tube rectified, choke input power supply  
triple inductive filtering with permalloy filter stages

[yes, there are nine Permalloy pieces in our phono stage – nobody in the industry is even close]

Tubes:

V1L, V1R = input = 6J11

V2L, V2R = output = 12a4

V3, V4 = rectification = 6DA4/6DM4

Alternate V1 D3a/7721, e280f/7722

Alternate V3, V4 tube: 12b4

gain = 42 dB with 12a4; 32 dB with 12b4

input impedance = user defined, 300k Ohms default

output impedance = 3000 Ohms with 12a4; 1500 Ohms with 12b4

max input voltage = 200mV RMS

max output voltage = 25V RMS

net weight = 38 pounds/ 17kg

115/230V operation standard

---