

A Really Simple PAS Modification

With this mod, you'll discover why this classic unit is a favorite of audiophiles.

The ubiquitous Dynaco/Dynakit PAS must be one of the most popular tube preamps in history. It also must have drawn the most modification “ink,” with at least two articles in *Audio Amateur* Publications: *Audio Amateur*, “PAS-MOD Mk.III,” 4/82, and *Glass Audio*, “Spice and the Art of Preamp Design,” 3 and 4/97. It draws good press and popularity for many reasons, including the fact that it sounds pretty darn good in “stock” form. The main problem

I always had with it was that it was prone to noise and hum; didn't sound flat with the tone controls centered; and the tone control range was *waayyy* too much—could induce turntable rumble with the bass moderately up. Please

note that this modification does *not* apply to the last version of PAS preamps manufactured, which I believe were called the -3X. These had specially built tone controls which were effectively “out of the circuit” when the wipers were centered.

THE DIAGNOSIS

I hadn't played with one in many years, *until* one arrived the other day for “check out.” Seems a young fella wanted to set up a basic tube system, picked up a PAS-3 for its preamp, and wanted me to look it over. Aware of the many mod choices available, he wanted to bypass the tone controls entirely. Now, I believe that a bass and treble control that is basically “out of the cir-

cuit” when in their mid-positions and which can add a “subtle” amount of boost or cut can be very valuable in a system. I asked whether I could leave them in but try to tame their effect.

Turns out that his PAS was in very good shape except for a reasonable amount of rust on the RCA connectors. Voltages were right on, and the filter caps were good. I then fired it up and used a great feature on my Amber Audio test set, which gener-

ates a continuously swept sine wave over the audio spectrum. The swept output emerging from the preamp can be monitored on an oscilloscope so you can view deviations from flat frequency response down to as little as a few tenths of a dB.

I first checked the line output stage by feeding the test signal into the “spare” input and verified that max bass boost/cut approached 20dB and treble 15dB. What surprised me, though, was that with the controls “centered,” the flattest curve I could obtain showed a deviation of ± 4 dB (referenced to 1kHz) with the max plus deviation up around 8kHz or so and the max minus deviation around 200Hz.

THE MOD

What to do? Well, rather than “rip out” the controls, I spent a few hours with a bunch of resistors and clip leads. To shorten the story (a lot), I found a workable solution by simply paralleling both 750k Ω bass controls with 47k Ω fixed resistors (half-watt carbon) and the 400k Ω treble control with 33k Ω fixed resistors. Solder the lead from the side of each resistor to the “ends” of each potentiometer—the center terminal is the “wiper.”

This resulted in a maximum bass and treble boost/cut of around 6 to 8dB and reduced the deviation from flat with the controls centered to ± 2 dB. Sweeping the phono section through an inverse RIAA network indicated that the frequency response was also within a few dB of flat—good enough for me.

Listening to the preamp brought back memories of why I liked my first one so much 40 years ago. In addition to its nice crisp sound, the bass and treble adjustment range was just about right. It was really quiet, too—after I cleaned all the connectors and potentiometers with Cramolin.

The only other mod I would suggest is if you plan on feeding an amplifier with an impedance less than 500k Ω , remove the 510k Ω output loading resistors soldered to the terminals on the back side of the RCA output jacks—just clip them out.

Hope the kid likes it. You might, too.

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