

Updatemydynaco
PAT-5 Volume Control Replacement
ASSEMBLY MANUAL

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Section 1: About This Manual

This manual gives the information needed to replace the original PAT-5 volume control pot with a similar equivalent replacement. Note that this replacement is not exactly the same as the original, but it's the nearest equivalent that can be had without making a custom part. At maximum gain, fully clockwise, this new arrangement will have about 2/3 the gain of the original pot, or about $20 \cdot \log(2/3) = -3.5$ dB, or about 3.5 dB less gain than the original arrangement. This is not an issue as the PAT-5 typically has more gain available than anyone needs.

Who Should Attempt this Project?

You can build this kit if you can:

1. Solder (using normal rosin core solder and a soldering iron).
2. Use simple hand tools like screwdrivers, wire cutters, and pliers.
3. Read and follow directions.

It helps if you:

1. know a bit about electronics, or
2. have a friend who knows a bit about electronics
3. can get to YouTube to watch a few helpful videos about the assembly process (none are posted as of this version of the manual).

Tools you'll need

You'll need the following tools:

1. Phillips screwdriver (#1 and #2)
2. Pliers or nut drivers suitable for #4 and #6 hardware
3. needle nose pliers (helpful, but not strictly necessary)
4. pencil type soldering iron of 35 to 50 Watts (no huge honking soldering guns or blowtorches)
5. wire cutters and strippers

Helpful Tools

These tools aren't strictly necessary, but make building the kit easier.

1. magnifying glass, if you're over 42!

A Note about this manual

We've given enough information to allow most people who have a little experience to do the replacement. It is not the typical step-by-step manual.

Important Safety Notes

By purchasing, using, or assembling this kit, you have agreed to hold Akitika LLC harmless for any injuries you may receive in its assembly and/or use. To prevent injuries:

- Wear safety glasses when soldering or clipping wires to prevent eye injuries.
- Always unplug the power before working on the amplifier.
- Large capacitors hold lots of energy for a long time. Before you put your hands into the amplifier:
 - Pull the AC plug!
 - Wait 2 full minutes for the capacitors to discharge!
- Remove jewelry and rings from your hands and wrists, or anything that might dangle into the amplifier or fall from a shirt pocket.
- If working on the equipment with the power on, keep one hand in your pocket, especially if you're near the power supply or power supply wires. This can prevent serious shocks.
- Build with a buddy nearby. If you've ignored all the previous advice, they can dial 911 or get you to the hospital.
- Read and understand the safety manuals of all the tools you use.

About Components

We reserve the right to make design/or component changes at any time without prior notification.

Recommended Solder

The kit must be assembled with 60/40 Rosin Core solder. The recommended diameter is 0.032 inches. Among many such sources of solder, I have used Radio Shack part number 64-009. It contains 8 oz. of solder, which is much more than you'll need to assemble the kit.

Warranty

With the exception of fuses, Akitika will replace for free any parts of a correctly assembled product that fails within one year of the date of purchase when the equipment has been used in home stereo applications. It is the responsibility of the kit builder to install the replacement part(s). This warranty applies to the original purchaser only. It does not apply to units that have been physically or electrically abused, modified without prior factory authorization, or assembled with other than 60/40 Rosin Core solder. Akitika LLC's liability shall in no event exceed the cost paid to Akitika LLC for the kit.

Section 2: Replacing the Volume Pot

The volume control had a non-standard value of 15K Ohms. We are approximating that by adding 4K99 resistors to a 10K audio pot. The design shown is a reasonable approximation of the performance and behavior of the original pot.

Swap out volume pot. Replace each of the two indicated wires by a 4K99 resistor

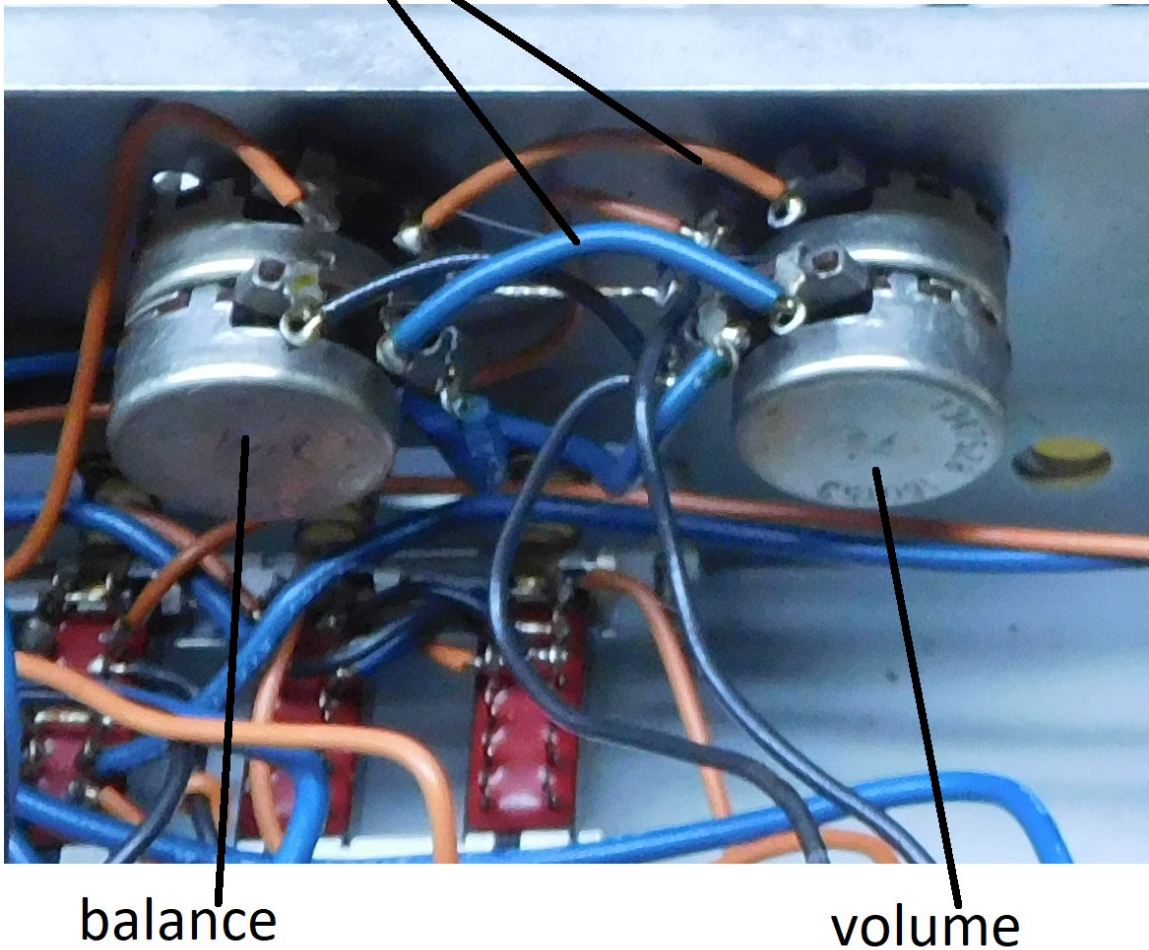


Figure 1-add two 4K99 resistors to a dual 10K audio taper pot to approximate original volume control characteristics

Figure 1 shows how to install the new volume control pot. Note that two 4K99 resistors must be added.

Figure 2 shows a schematic of the new volume control arrangement.

PAT5 Volume Control Replacement
Schematic
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Akitika LLC March 8, 2020

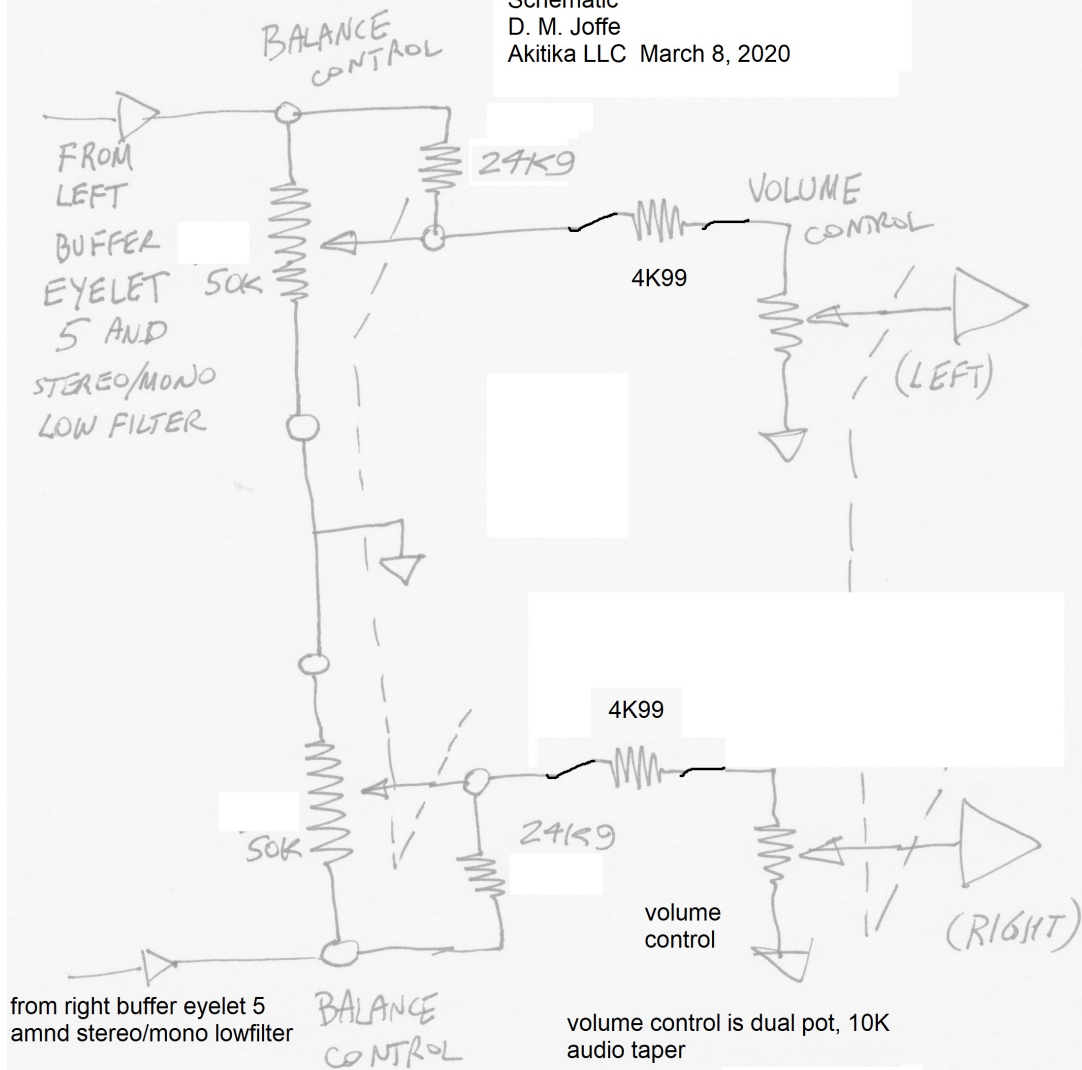


Figure 2-Schematic of new volume control arrangement

Note that the schematic shows the new alternate arrangement for the balance control. However, this new arrangement for the volume control can also be installed when the original balance control is present. In both cases, the jumper from the center terminal of the balance control to the “hot” side of the volume control is replaced with a 4K99 Ohm resistor.

Note that the shaft on the supplied pot is a bit shorter than the original pot shaft. Still, it is long enough to mount the original knob securely on the volume control. You may have to move one of the front cosmetic-panel mounting-nuts to an adjacent control, or the selector switch if it previously was on the volume control.