

***Updatemydynaco***  
***PAT-5 Balance Control Replacement***  
***ASSEMBLY MANUAL***

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## Table of Contents

Table of Contents .....	2
Table of Figures .....	2
Section 1: About This Manual .....	3
Who Should Attempt this Project? .....	3
Tools you'll need .....	3
Helpful Tools .....	3
A Note about this manual .....	3
Important Safety Notes .....	4
About Components .....	4
Recommended Solder .....	4
Warranty .....	4
Section 2: Replacing the Balance Pot .....	5

## Table of Figures

Figure 1-add two 24K9 resistors to a dual 50K linear taper pot to approximate original balance control action .....	5
Figure 2-Schematic of new balance control arrangement.....	6

## **Section 1: About This Manual**

This manual gives the information needed to replace the original PAT-5 balance 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 the equal balance position (center of rotation), this new arrangement will have about 3 dB more loss 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***

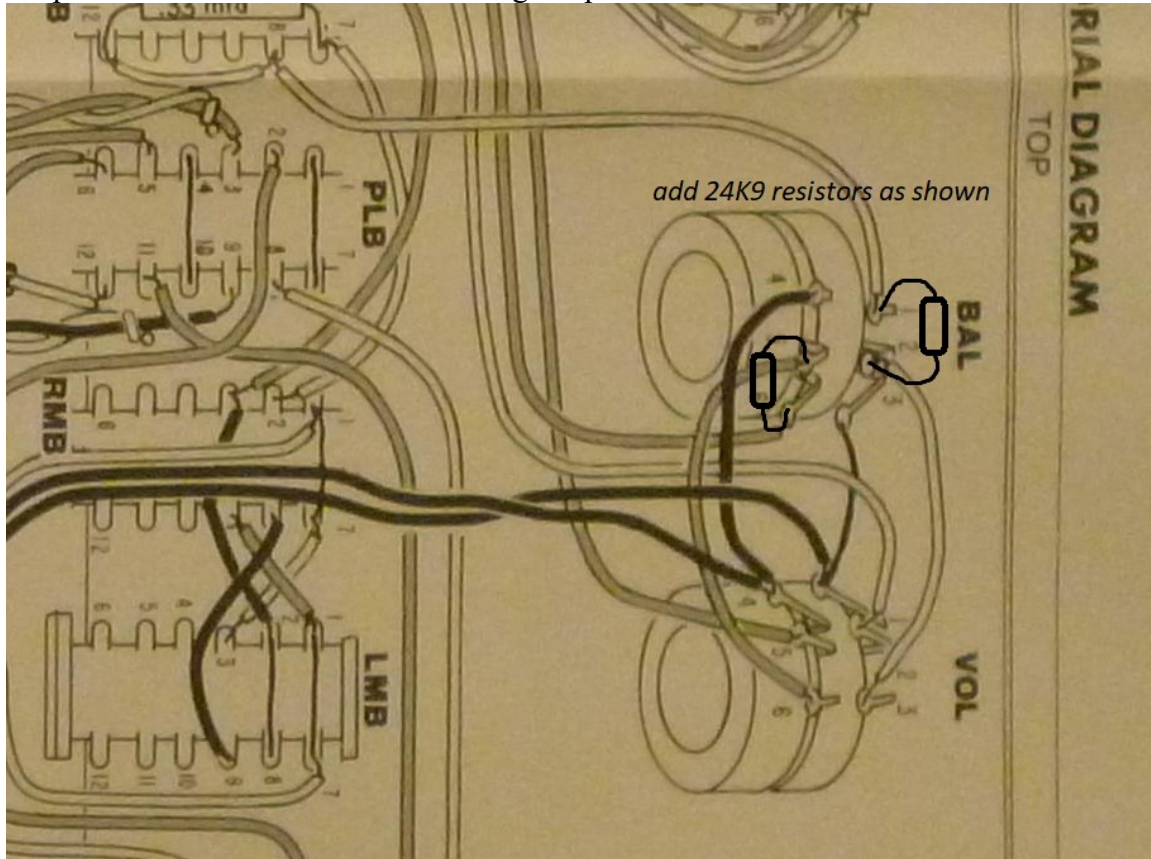
The kit must be assembled with 60/40 Rosin Core solder. The recommended diameter is 0.032 inches. Among many such sources of solder, I have used Radio Shack part number 64-009. It contains 8 oz. of solder, which is much more than you'll need to assemble the kit.

## ***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 Balance Pot

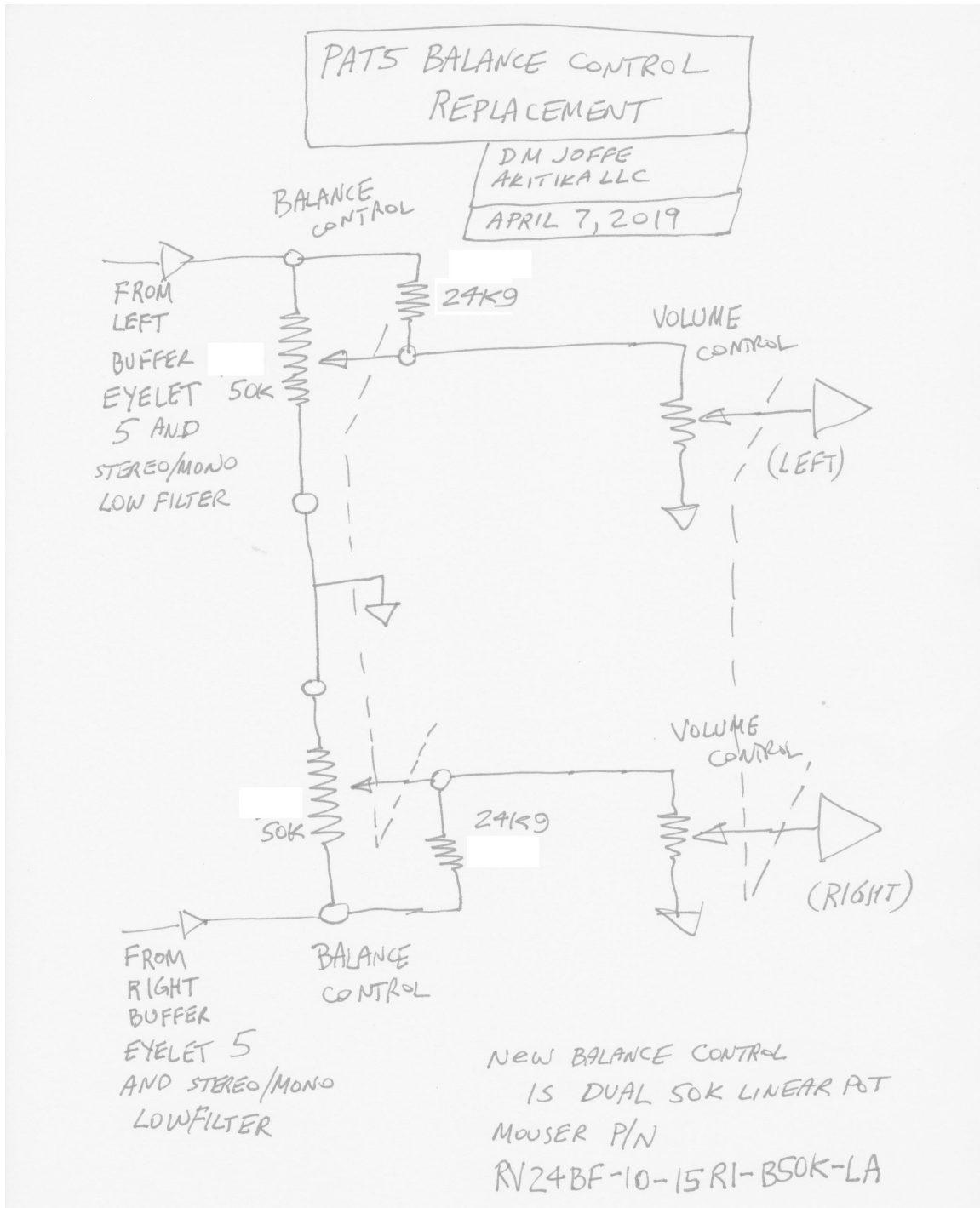
The original balance pot had a special taper that is not available now expect perhaps by a custom manufacturing arrangement. The design shown is a reasonable approximation of the performance and behavior of the original pot.



**Figure 1-add two 24K9 resistors to a dual 50K linear taper pot to approximate original balance control action**

Figure 1 shows how to install the new balance pot. Note that two 24K9 resistors must be added.

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



**Figure 2-Schematic of new balance control arrangement**