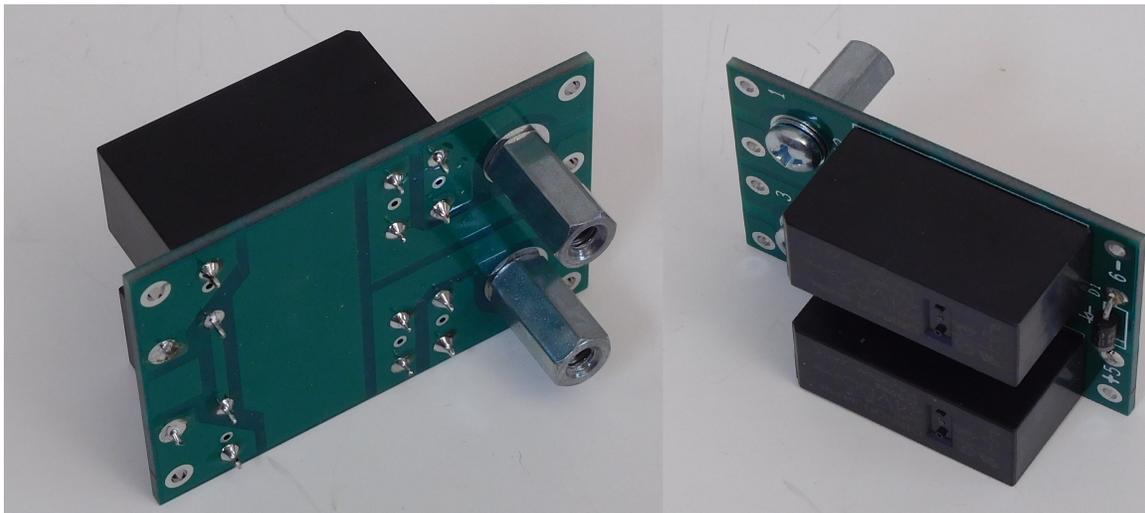


# ***STEREO 400 RELAY KIT***



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

The Stereo 400 Relay Kit is a PC Board and mechanical assembly designed to replace the speaker relay on a Dynaco Stereo 400 Power Amplifier. This manual shows where to connect the wires from your Stereo 400 on the Stereo 400 Relay kit. Unlike many other Updatemydynaco manuals, it doesn't give step-by-step instructions.

The Stereo 400 is a large, heavy amplifier, with relatively high voltages inside, and a rather complex and cumbersome mechanical assembly. Changing the relay is only recommended for those who are careful, methodical, and brave (but not foolhardy). You have been warned!

### ***Who Should Attempt these Projects?***

As we said previously, this kit is not for the faint of heart. Installing the kit is fairly simple. The thing that makes it difficult is the amount of disassembly required to access and remove the old relay. Reassembling the amp must be done carefully to assure that no wires are pinched.

### ***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 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 1 full minute for the capacitors to discharge!
- Remove jewelry and rings from your hands and wrists, or anything that might dangle into the amplifier.
- If working in the amplifier, 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.

## Project Overview

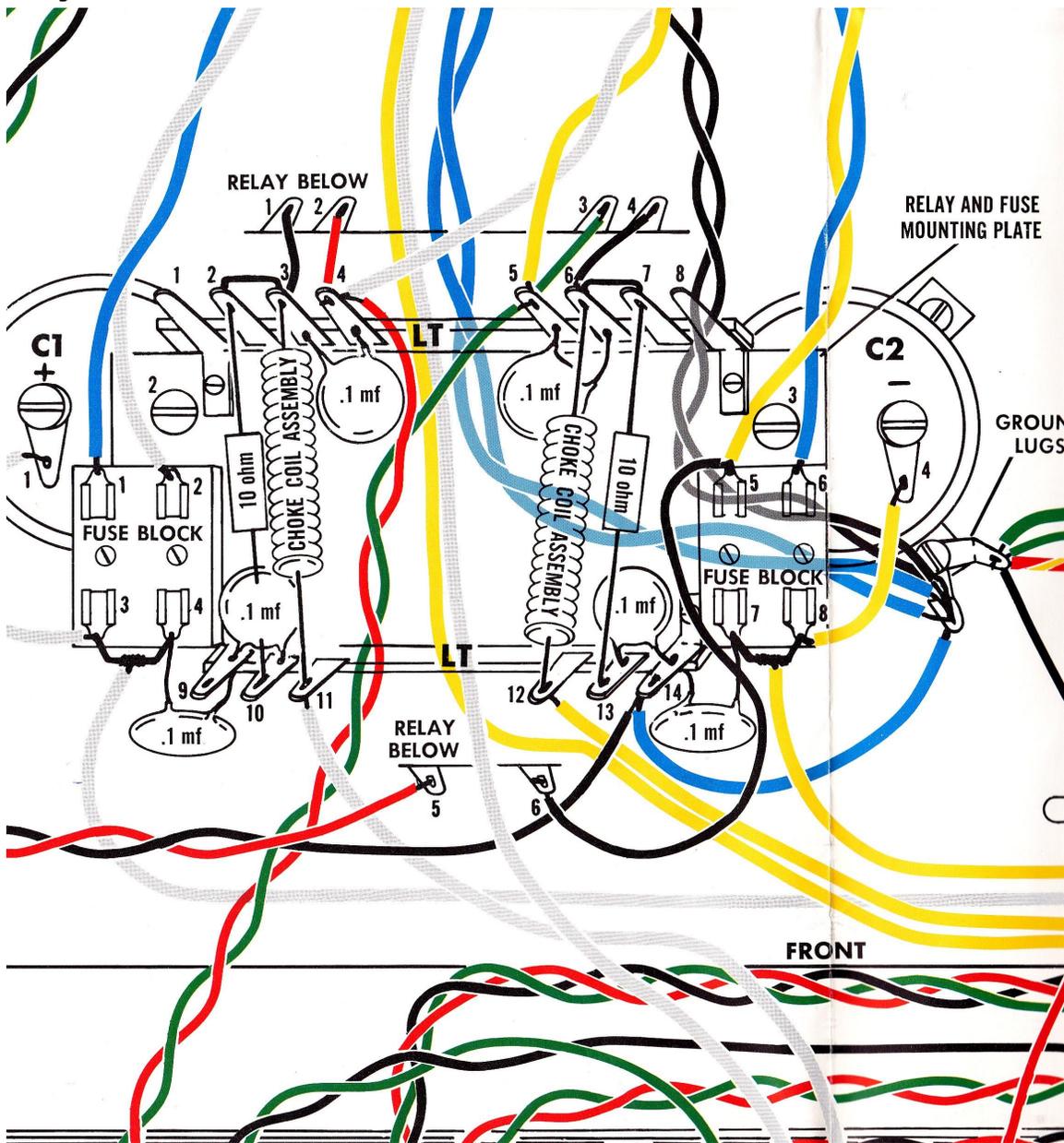


Figure 1-Original Stereo 400 Wiring Diagram Excerpt

### Removing the old relay

***Make sure the AC plug is out! Don't touch the amp until you've waited 2 full minutes for the capacitors to discharge!***

1. Remove C1 screw 2.
2. Remove C2 screw 3.
3. Carefully lift the steel plate to expose the old relay.
4. Make masking tape tags numbered 1 thru 6 and place them over the wires that attach to relay terminals 1-6 as shown in Figure 1.

5. Cut wires 1-6 close to their attachment terminals on the relay.
6. The two relay retaining screws are hidden under the two 0.1  $\mu\text{F}$  capacitors shown in Figure 1. Carefully lift them up.
7. Remove the two nuts and bolts that retained the old relay on the board.

### Build the New Relay Board

1. Install D1, a 1N4004 diode. Install it from the side with the silk-screen, known as the component side, and solder it on the other side (solder side). Make sure that the banded ended of the diode (the cathode) aligns with the band of the silk-screen.
2. Install relay K1. At first solder just two corner pins. Make sure that the relay sits flat on the PCB. Adjust your soldering if necessary, then solder the balance of the pins.
3. Use a similar technique to solder K2 to the PCB.

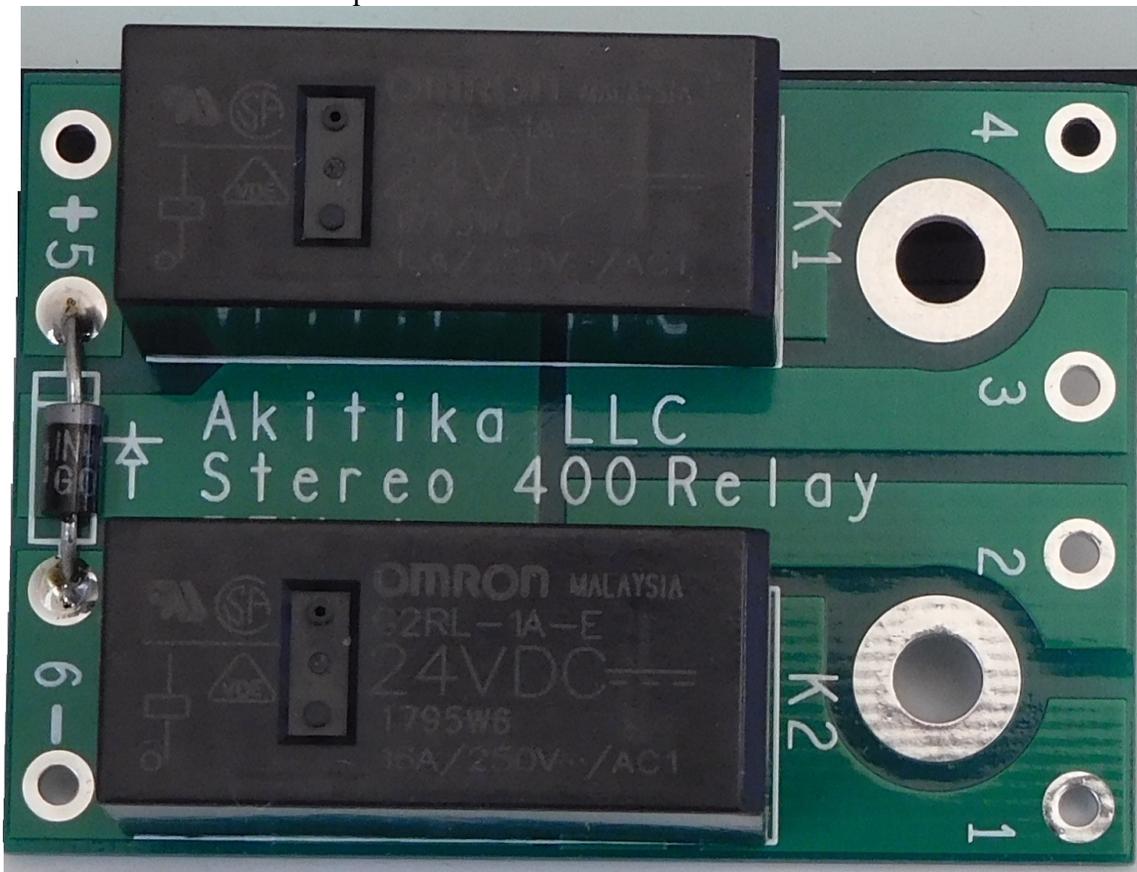


Figure 2-Assembled relay board

### Installing the New Relay Board

1. Transfer the wires from the old relay board to the new relay board. Observe the numbers carefully in Figure 1 and Figure 2. Match the numbers on the masking tape labels to the numbers shown on the silk-screen in Figure 2.
2. Solder the wires on the solder side (this is most important). If you leave a little clearance between the insulated portion of the wire and the PCB, you'll see a solder fillet on both sides of the PCB.

3. Take care that no solder blobs bridge to the mounting stand-offs or across the copper foil lands.
4. Double check that wires 5 and 6 are in the correct places on the PC board. The red wire should go to the small plus sign. That same copper land attaches to the cathode of the suppressor diode.

***We mean it!***

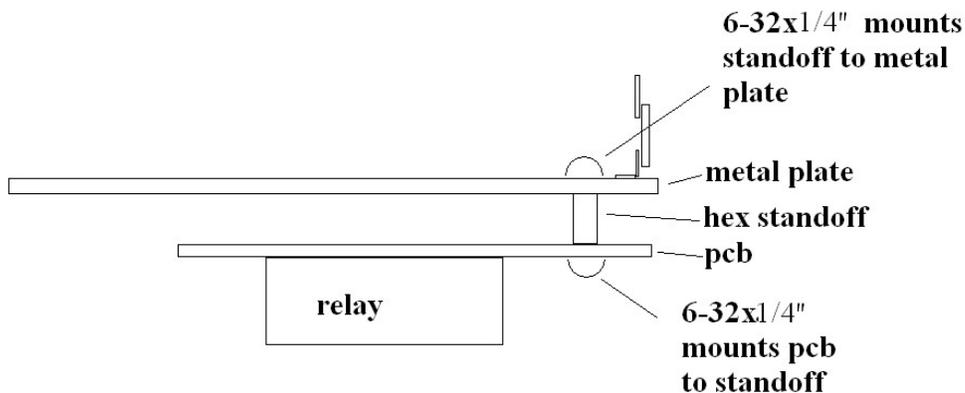
1. *The wire that connects to pin 5 must be the red wire that comes from pin 9 of the controller board, PC29.*
2. *The wire that connects to pin 6 must be the black wire that goes to the -75 Volt supply.*

*If you get this backwards, it won't work, and you will smoke R42. Look at the silk screen on the PCB to get it right.*

*You will get fooled if you refer to Figure 1 since*

- *The positions of terminals 5 and 6 are swapped between the old relay and the new board.*
- *The function of the terminal numbers is consistent between the old relay and the new boards.*

## Mounting the Relay Board



**Figure 3-Mounting Arrangement**

The new relay PCB mounts as shown in Figure 3. Note that there are two 6-32x1/2" standoffs, each held in place by 6-32x1/4" sems screws. Sems screws have built-in lockwashers.

## Reassembly

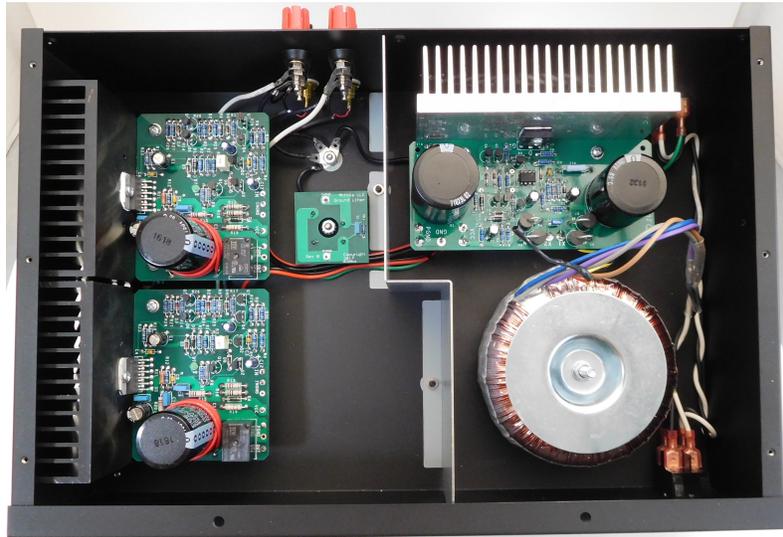
Carefully re-assemble the amplifier. Make sure that you don't break or pinch wires as you complete the re-assembly.

## References

Visit the Updatemydynaco website, [www.updatemydynaco.com](http://www.updatemydynaco.com), to download the latest version of this manual.

## **Better Sound Because You Build It!**

### **GT-102 Stereo Power Amplifier Kit**



*Buy it in kit form for \$314+\$26 shipping (lower 48 states).  
Buy it assembled and tested for \$464+\$26 shipping (lower 48 states).*

### **About the GT-102 Stereo Power Amplifier Kit**

Have you ever built a Heathkit, Eico, or Dynaco kit? Did you build your own computer from components? Was it for the fun? Was it for the feeling of accomplishment? A project to share with the kids or grandkids? Was it to get high-end performance at low cost? If you answered “yes” to any of those questions, the GT-102 kit might be just what you want.

Akitika’s GT-102 is a complete stereo power amplifier kit that delivers more than 50 Watts per channel of clean, low noise power into 8 Ohm loads. Nearly double that into 4 Ohms! More measurements can be found at [www.akitika.com](http://www.akitika.com). The kit supplies everything but the solder. Add a few hours of rewarding assembly time and the result is Better Sound, because you build it.

The kit includes a toroidal power transformer, film and COG capacitors, metal film resistors, heavy-duty extruded aluminum heat sinks, isolated input jacks, double-sided PC boards, and a fully regulated power supply, all elegantly fitted into a black custom chassis. It may well be *the sweetest sound you'll ever build!*

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