

Troubleshooting Information

Wybron Coloram II Color Changers PC Board Level

Wybron does its best to keep circuit board repair costs low. Often, you may be better off sending the board in for repair, if you have time. If it is stone dead, charred, had 110V run through it, etc., we will not charge for repairs but advise you to buy a new one. Typical repair time on a board is 30 minutes or less. If it looks like we can repair it reliably, we will spend up to two hours on a board, but that is rare and most often happens when 24 volts has gotten into the data lines.

Although there are significant, complicated electronics in a Coloram II board, possible failure modes are few. To fix most potential problems, you will need only the information on this sheet.

This information applies to all Coloram II Color Changers, no matter what size. Please keep in mind, however, that boards have various modes, versions and software. Make sure we know exactly what you need when you order.

CAUTIONS:

- 1. The snubber resistor gets extremely hot. Check before touching. It is the largest resistor on the board.**

FIRST STEPS:

- 1. Check the inductors for signs of overheating.**

The board may continue to work with a damaged inductor, but it should still be replaced. (Inductors: RL1284-1800 or RL1283-470)

- 2. Conduct a visual inspection of the board.**

Look at the board, looking for chips in backwards, signs of charring, bare copper traces due to high currents, ICs partially out of sockets, in backwards, or with pins over the side of sockets or bent underneath.

Check for opened traces, lifted pads or poorly made solder joints.

Check for corrosion due to exposure to moisture. A badly corroded board should be replaced if it is used where its proper operation is vital.

3. **Check the 24 and 5-volt supplies.**

Check the voltage regulators output: LM2575T-5.0, LM2575-ADJ, LM340T.

(Those are dashes and not minus signs on the regulator labels. There are no negative voltages on the board.)

The regulators may fail when the COM chips or driver chips are damaged. If they are standing up, check for broken legs.

TROUBLESHOOTING:

1. **Symptom: The drive roller doesn't turn, or the drive roller does not actively resist manual turning.**

a. Problem: Motor driver IC is bad

Remedy: Replace the Motor Driver chip: UDN2954 or A3952 depending on age of the board (THESE ARE NOT interchangeable). Often when it dies it squirts out a little plastic or oil where the plastic bonds to its metal flange. If you replace this chip, cut the leads very close to the chip, then take them out one at a time with a soldering iron and tweezers.

If that doesn't work, try the Motor Control chip: HCTL-1100. This is less likely to be a problem, but it may die when the Motor Driver chip goes. Make sure it's plugged in correctly. It's easy to jam it in the wrong rotation. Try the Buffer Inverter chip: 74HC14. It's usually found dead along with the driver and motor control chip, almost never by itself.

You can try replacing the other chips, but they seldom fail unless the board has had 24 volts or 110 volts run through it. If it has and you have gotten this far it is likely that there are blown traces and the board is not repairable.

2. **Symptom: The LEDs are flashing erratically.**

a. Problem: You likely have either a damaged processor, the EPROM is damaged or pins are out of the socket or one or more of the data or address lines are open or shorted.

Remedy: Reseat the processor and the EPROM in their respective sockets. Return the board to the factory for replacement.

3. **None of this seems to be working.**

a. Problem: When things aren't going right and nothing makes sense, check

your power supply voltages, returns and grounds. It's simple to do and often solves baffling problems. Check power for each chip at the chip, not from the bottom of the board. OHM them out first to either power or ground, then power the board up and check for the proper voltage.