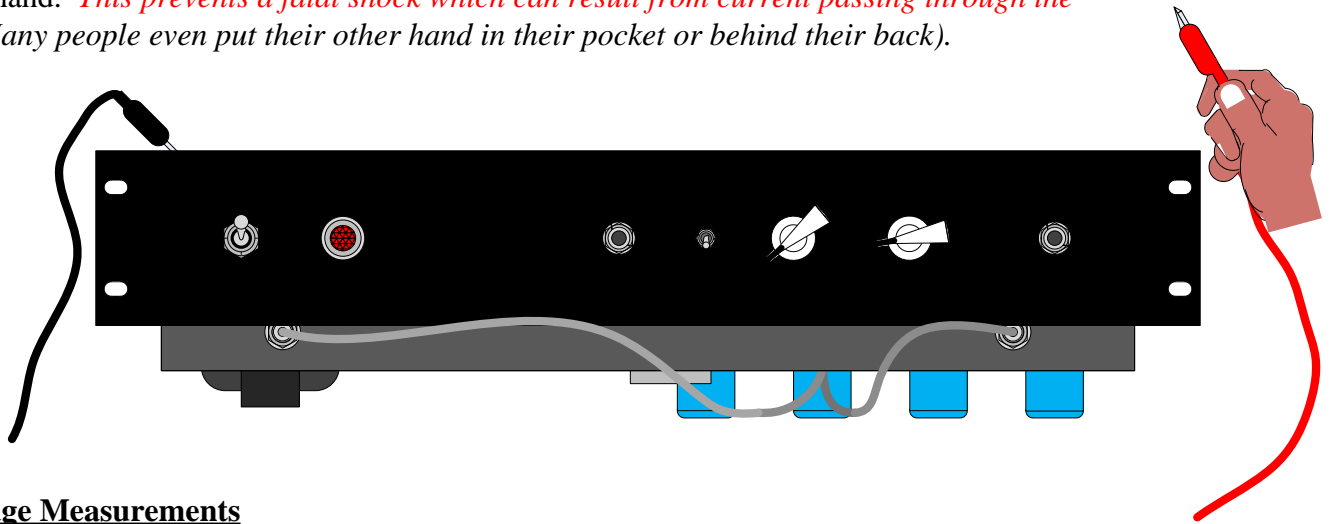


The Wave Troubleshooting Supplement

The next step after thoroughly double-checking your connections is to take voltage measurements to help locate problem areas. Please keep safety first and always remember the one hand rule.

The one hand rule (pictured below): is a safety precaution for working on an amp that is plugged in or could potentially have high voltages present. Using alligator clips with your DMM, clip the ground side to the chassis and use the other side to probe at various test points with one hand. *This prevents a fatal shock which can result from current passing through the heart.* (Many people even put their other hand in their pocket or behind their back).



DC Voltage Measurements

First, make sure all of your DC voltage measurements are in order. Use the layout drawing (or schematic) to find the locations of the DC voltage measurements listed below. Your measurements should be in the same ballpark, but do not expect to measure the exact same values listed here.

| Test Point | Measurement |
|------------|-------------|
| HV | 330 VDC |
| A | 320 VDC |
| B | 271 VDC |
| C | 255 VDC |
| D | 246 VDC |
| E | 157 VDC |
| F | 1.3 VDC |
| G | 178 VDC |
| H | 1.7 VDC |
| I | 316 VDC |
| J | 5.8 VDC |
| K | 182 VDC |
| L | 1.3 VDC |
| M | 263 VDC |
| N | 176 VDC |
| O | 1.3 VDC |
| P | 123 VDC |
| Q | 135 VDC |

If you would like troubleshooting help, please e-mail us a listing of your voltage measurements and briefly explain the problem:

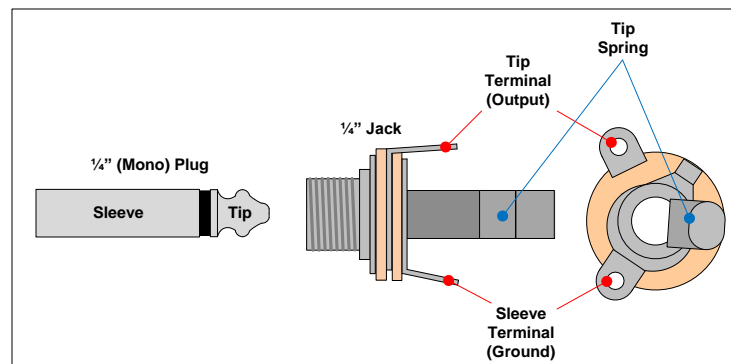
info@modkitsdiy.com

Measuring AC Voltages from the Guitar Signal

Once your DC voltages are in order, if your kit is still not working properly, you can measure AC voltages along the signal path to troubleshoot further.

You will need a volt meter that can measure the small signal AC voltages that electric guitars put out. The output signal from your guitar will likely be less than 1 V.

First, measure the output signal directly from your guitar. You can do this by plugging your guitar cable into the guitar and leaving the other end of the cable disconnected. Connect your meter across the disconnected ¼" plug's "tip" and "sleeve" sections. Make sure your guitar's volume and tone controls are turned up and strum a chord. When you strum, you should see the AC voltage reading on the meter quickly rise to some maximum value and then fall back to 0 VAC when you stop strumming and the strings come to a rest.



Once you are able to measure the output signal from your guitar directly, plug the guitar into the input jack of your kit and use the AC test points to measure the guitar signal along the signal path. Start with test point one and move along in order. You should be looking to identify the last test point where the signal seems normal and the first test point where the signal seems unusual or where it is no longer even present.

The AC voltages on the layout drawing and schematic are numbered 1 through 11 and were measured while strumming an open E chord on a strat switched to the neck pickup only position. All test points (except test point 5) were measured with respect to ground. *AC signal voltage levels may vary dramatically from one instrument to another depending on the electronics and how hard you strum.*

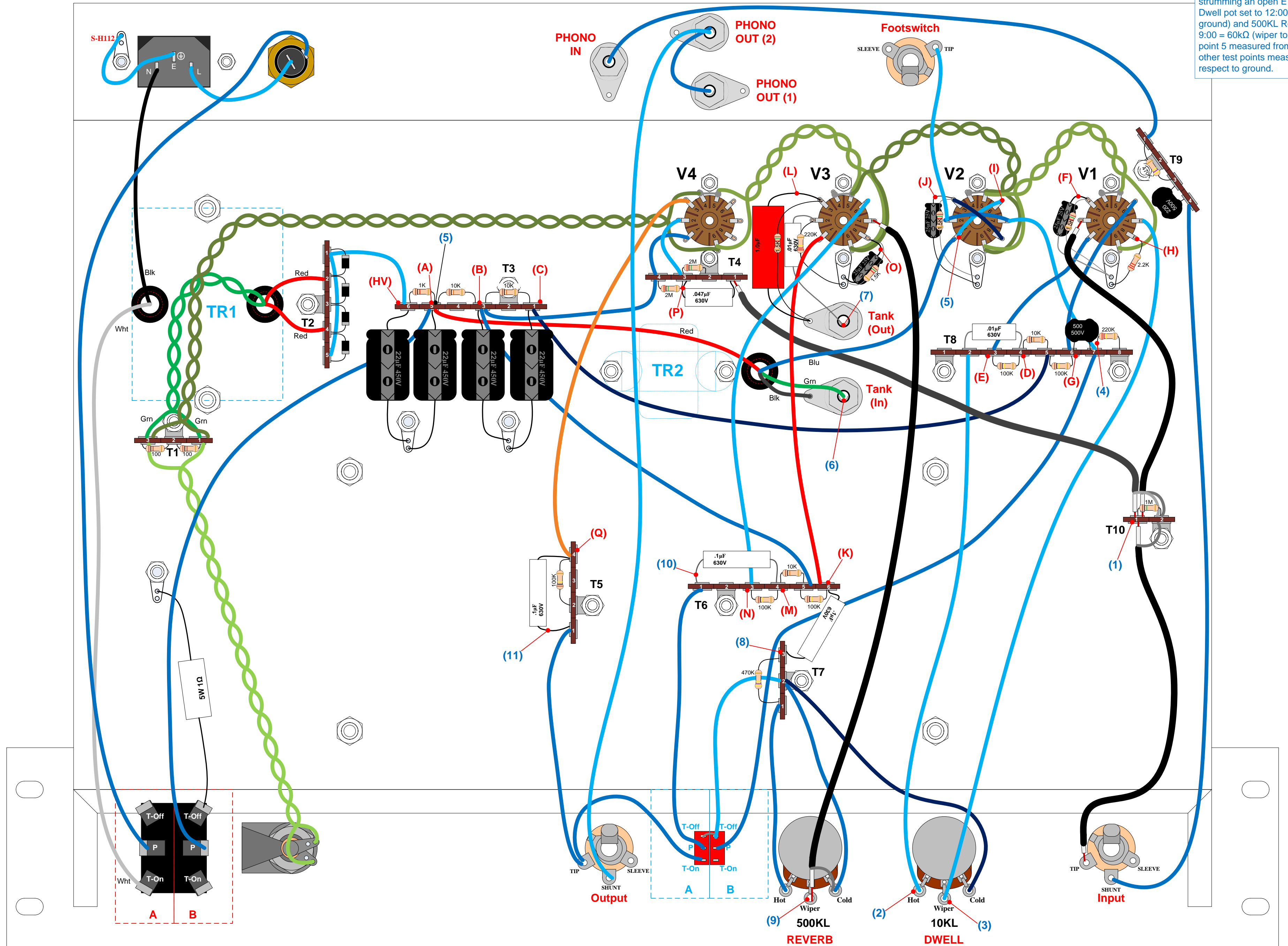
| Test Point | Measurement |
|------------|-------------|
| 1 | 0.16 VAC |
| 2 | 0.17 VAC |
| 3 | 0.10 VAC |
| 4 | 0.62 VAC |
| *5 | 23.0 VAC |
| 6 | 0.48 VAC |
| 7 | 0.01 VAC |
| 8 | 0.70 VAC |
| 9 | 0.07 VAC |
| 10 | 0.13 VAC |
| 11 | 0.13 VAC |

- The 10KL dwell pot was set to "12:00" = 5k Ω (wiper to ground).
- The 500KL reverb pot was set to "9:00" = 60k Ω (wiper to ground).
- *Test point 5 was measured from TR2's blue wire to red wire.

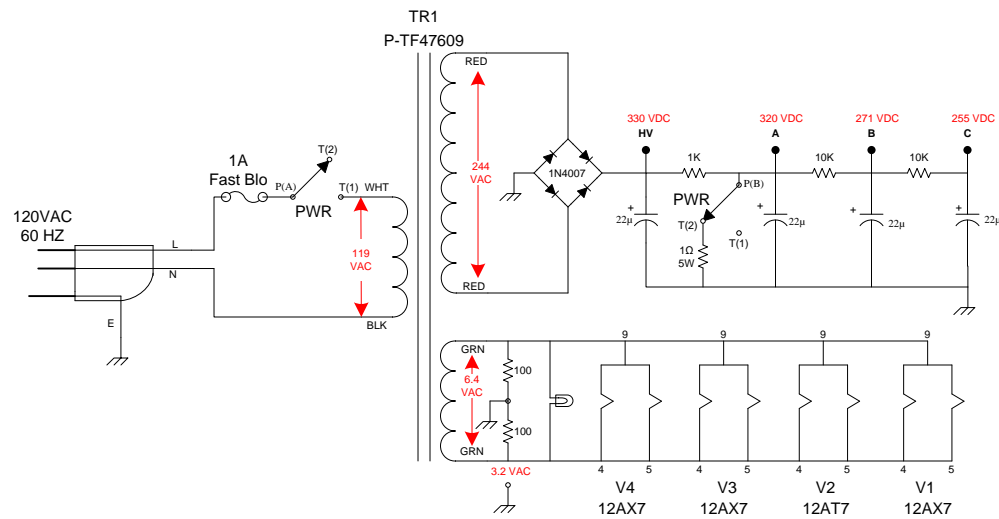
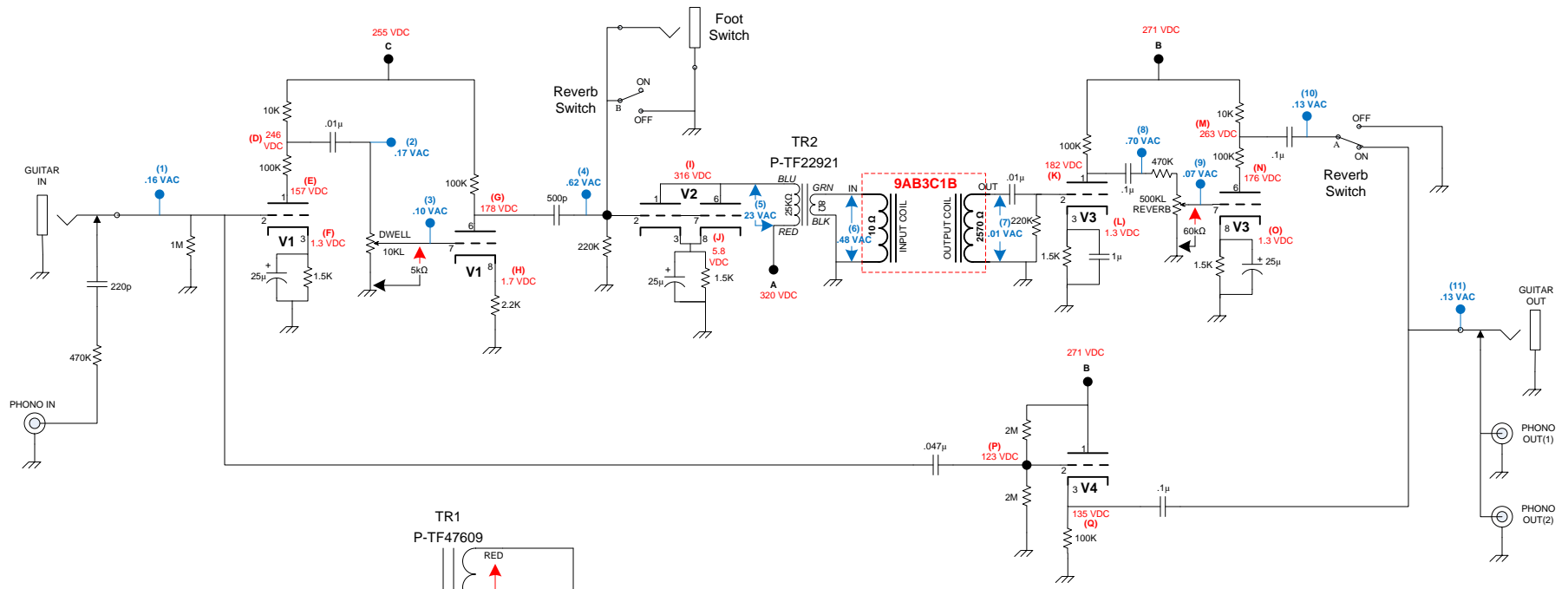
Test Point Layout Drawing

- DC test points are lettered
- AC test points are numbered

AC voltages were measured from a strat in neck pickup position, strumming an open E chord with 10KL Dwell pot set to 12:00 = 5kΩ (wiper to ground) and 500KL Reverb pot set to 9:00 = 60kΩ (wiper to ground). Test point 5 measured from Blue to Red, all other test points measured with respect to ground.



- DC voltages were measured with respect to ground.
- AC voltages measured from strat neck pickup position, strumming an open E chord with 10Kl dwell pot set to 12:00 = 5kΩ and 500Kl reverb pot set to 9:00 = 60kΩ. Test point 5 measured from Blue to Red, all other test points measured with respect to ground.



V1 = 12AX7
V2 = 12AT7
V3 = 12AX7
V4 = 12AX7

MOD

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"The Wave" (K-MOD103)
Schematic