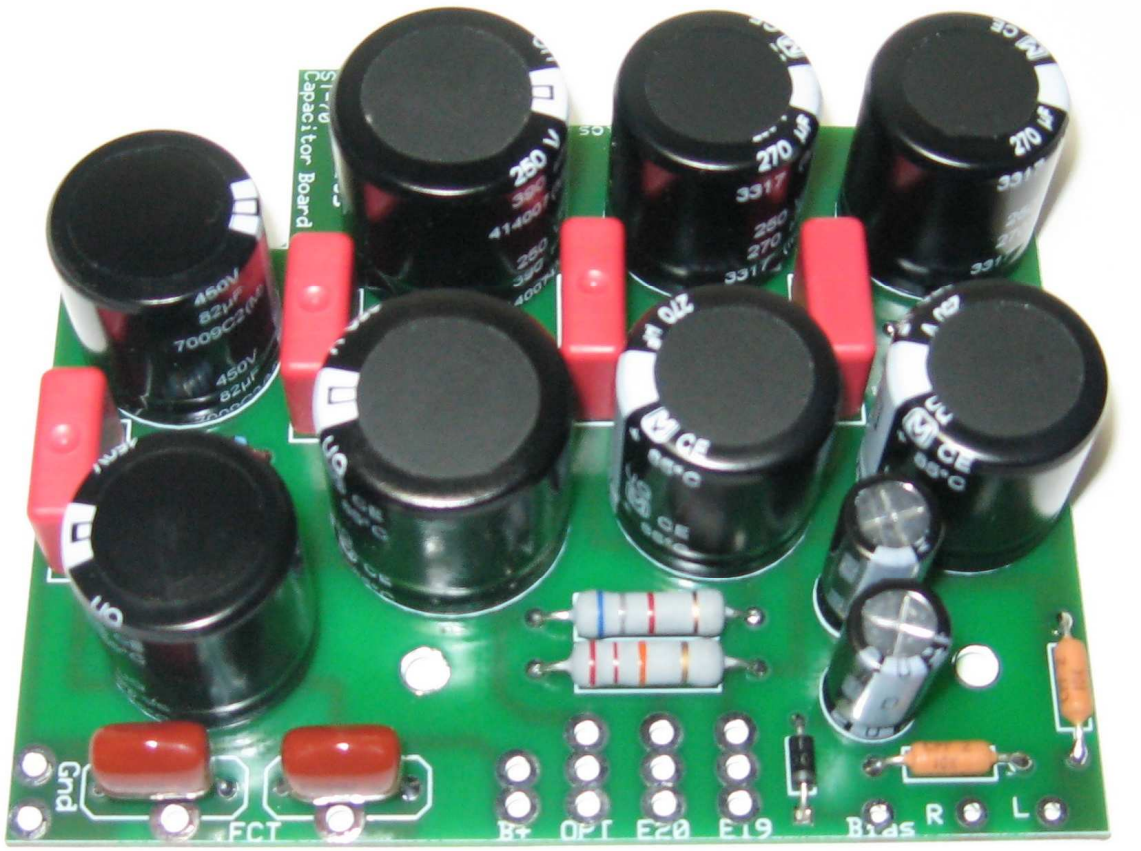
Triode Electronics ST-70
Capacitor Board
Instruction Manual Rev. 1



READ FIRST!

Please note that you will be working with high DC and AC voltages (over 400V), proper safety precautions must be followed. Normally the worst you will encounter is a nasty shock but you must be aware that the voltages inside the amplifier can seriously injure or even kill you. Follow the same precautions you would working with any normal electrical appliance including but not limited to the following: not working with the unit while it is plugged in, not working with bare feet on a wet floor, using only properly insulated probes and tools when working with live high voltage, and always working with only one hand when making measurements on live high voltage. It is also strongly recommended that you use eye protection while working on the unit. Always use the proper size fuse in the unit you are working on. You are responsible for being aware of and following the proper safety precautions and Triode Electronics is not responsible for any injury you incur while installing or working with our board, you are doing so at your own risk
Failing, Defective, or improperly installed components in high voltage tube equipment, especially vintage equipment, may arc, spark, smoke, explode, or rupture, possibly causing hot and injurious fluid or goo. If you have little or no experience working with or repairing tube equipment it is recommended that you take the unit to a professional service technican to have the board installed for you.
It is recommended that you have basic knowledge of electronics components, soldering, and construction techniques prior to proceeding

ST-70 Capacitor Board Parts List

R1 = 330k 1/2W Resistor
R2 = 330k 1/2W Resistor
R3 = 330k 1/2W Resistor
R4 = 330k 1/2W Resistor
R5 = 330k 1/2W Resistor
R6 = 330k 1/2W Resistor
R7 = 330k 1/2W Resistor
R8 = 330k 1/2W Resistor
R9 = 6.8k 2W Resistor
R10 = 22k 2W Resistor
R11 = 10k 1W Resistor
R12 = 10k 1W Resistor
C1 = 82uF 400V Snap in Capacitor
C2 = 82uF 400V Snap in Capacitor
C3 = 390uF 250V Snap in Capacitor
C4 = 390uF 250V Snap in Capacitor
C5 = 270uF 250V Snap in Capacitor
C6 = 270uF 250V Snap in Capacitor
C7 = 270uF 250V Snap in Capacitor
C8 = 270uF 250V Snap in Capacitor
C9 = 100uF 100V Radial Capacitor
C10 = 100uF 100V Radial Capacitor
C11 = 0.022uF 630V Polypropylene Capacitor
C12 = 0.022uF 630V Polypropylene Capacitor
C13 = 0.1uF 630V Metallized Polypropylene Capacitor
C14 = 0.1uF 630V Metallized Polypropylene Capacitor
C15 = 0.1uF 630V Metallized Polypropylene Capacitor
C16 = 0.1uF 630V Metallized Polypropylene Capacitor
D1 = 1N4007 1A 1000V Diode

ST-70 Capacitor Board Installation Instructions

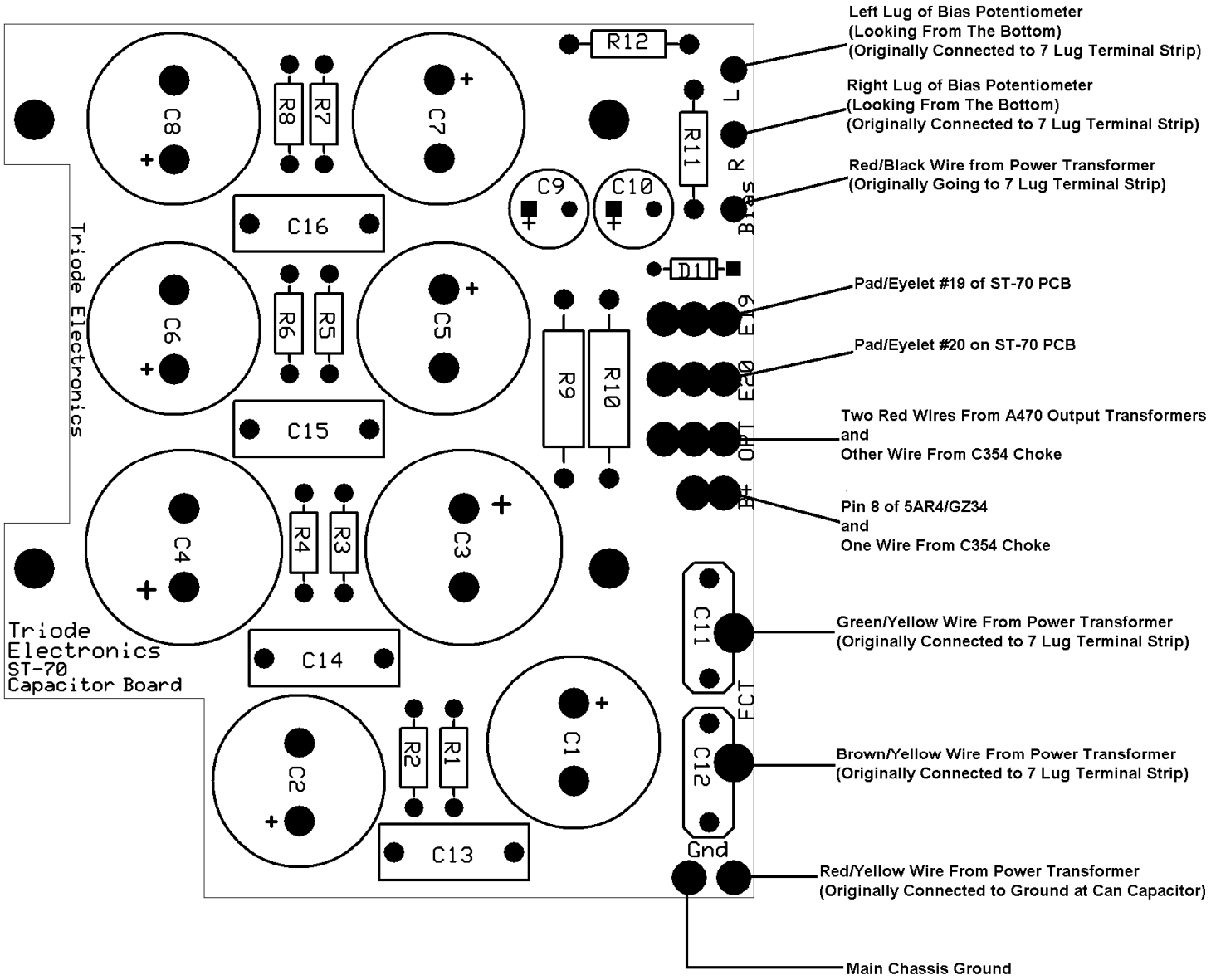
Populating PCB Board

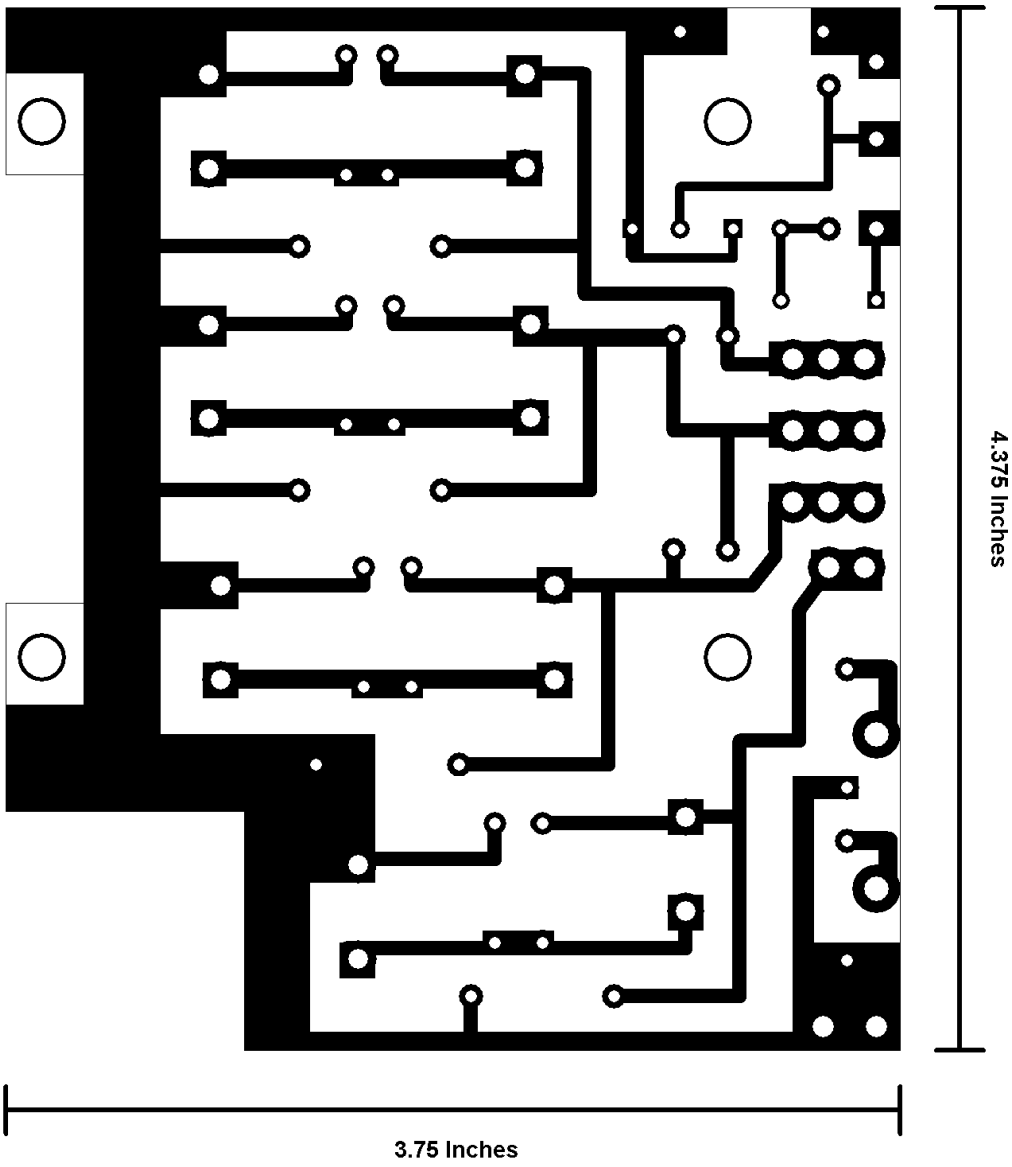
1. Solder all resistors onto the board where indicated in the parts list. Polarity does not matter for this step.
2. Solder 1N4007 onto board where it says D1. Make sure to have the banded end as marked on the PCB board (banded end facing edge of board)
3. Solder Capacitors C13 through C16 onto board. Polarity does not matter for this step
4. Solder Capacitors C9 and C10 onto board. Make sure observe proper polarity, the + sign on the board indicates the positive connection of the capacitor. The White stripe on the capacitors indicates the negative side of the capacitor and must be installed opposite of the + indicator on the board
5. Solder Capacitors C1 through C8 onto the board. Make sure to observe proper polarity, the + sign on the board indicates the positive connection of the capacitor. The white stripe on the capacitors indicates the negative side of the capacitor and must be installed opposite of the + indicator on the board.
6. Solder Capacitors C11 and C12 onto the board. Polarity does not matter for this step.

Installing PCB Board in Amplifier

1. Find the 7 lug terminal strip which has the 50uF 70V bias capacitors, 3 legged disc capacitor, and 10k resistors. Disconnect the wires attached to the terminal strip and remove the terminal strip from the amplifier, all of these parts are on the new PCB board so will not be needed.
2. Connect the wires that were going to the 7 lug terminal strip to the PCB as noted in connection diagram. (Bias, R, L, FCT)
3. Find the wire going from pin 8 of the 5AR4/GZ34 Tube to the Can Capacitor. Remove the wire from the can capacitor and connect it to the PCB board as noted on the connection diagram. (B+)
4. Your amplifier will also have one wire from the C354 choke attached to either the can capacitor at the same lug the wire from pin 8 of the 5AR4/GZ34 tube was going to, or it will be connected to pin 8 of the 5AR4/GZ34 tube. Find this wire and remove it. Connect the wire to the PCB board as noted on the connection diagram. (B+)
5. Find the two red wires coming from the A470 output transformers and the other wire of the C354 choke, they will be connected to a lug on the can capacitor. Remove these wires from the can capacitor and connect to the PCB as noted in the connection diagram. (OPT)
6. Find the wire coming from Eyelet 19 on the ST-70 PCB board and going to a lug of the can capacitor. Remove the wire from the can capacitor and connect to the PCB board as noted in the connection diagram. (E19)
7. Find the wire coming from Eyelet 20 on the ST-70 PCB board and going to a lug of the can capacitor. Remove the wire from the can capacitor and connect to the PCB board as noted in the connections diagram. (E20)

ST-70 PCB Connection Diagram





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