

Triode Electronics

ST-70 Mic Preamp Project

This is a simple project to convert the Triode ST-70 driver board into a microphone pre-amplifier. The circuit has a transformer coupled balanced input and single ended output, You could use a line output transformer on the output to keep the signal fully balanced. These modifications could be applied to a stock ST-70 driver board with a little work. This design is a work in progress and has not been fully tested yet but should work as is with little problems. Please provide your feedback if decide to build one and we will continually improve and update this project. We have provided a parts list, schematic, and several simple power supply designs below. Power supply resistor values will likely have to be adjusted to fit your particular setup. No part number for a chassis has been supplied since most people will likely build it with whatever they have laying around, if you don't have a chassis to use the Hammond chassis we sell on our site will work well. If you want to keep it simple you can scrap the phantom power, pad, and phase switch on the input and simply connect your XLR jack to the primary of the input transformer. Please note this is a DIY project and we cannot provide tech support for this project.

Parts List for Schematic

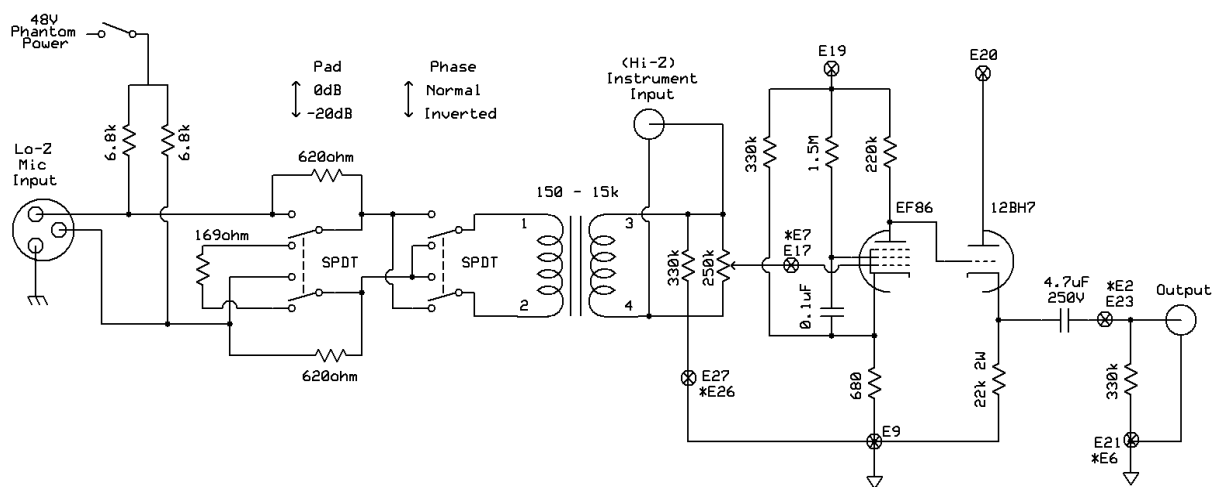
Part	Quantity	Vendor	Vendor Part #	Cost Per Unit
ST70 PCB	1	Triode Electronics	St70boardonly	\$29.95
9 pin PC Socket	3	Triode Electronics	9pinpccer	\$2.35
XLR Jack	2	Mouser	502-D3FBXAU	\$8.70
1/4" Mono Jack	4	Triode Electronics	1-4-NS	\$1.95
SPDT Switch	4			
SPST Switch	2			
Input Transformer (150 - 15k)	2	Triode Electronics or Jensen	TRI-MIC15015k JT-115k-E	\$64.95 \$75.00
6.8k 1/2W	4	Mouser	273-6.8k-RC	\$0.10
169ohm 1/2W	2	Mouser	273-169-RC	\$0.10
620ohm 1/2W	4	Mouser	273-620-RC	\$0.10
330k 1/2W	6	Mouser	273-330k-RC	\$0.10
220k 1/2W	2	Mouser	273-220k-RC	\$0.10
1.5M 1/2W	2	Mouser	273-1.5M-RC	\$0.10
680ohm 1/2W	2	Mouser	273-680-RC	\$0.10
22k 2W	2	Mouser	262-22k-RC	\$0.19
0.1uF 400V	2	Mouser	1429-4104	\$0.63
4.7uF 250V	2	Mouser	*1429-2475	\$3.49
EF86/6AU6 Tube	2	Triode Electronics	EF86tungsram	\$32.95
12BH7 or ECC99 Tube	1	Triode Electronics	ECC99JJ	\$14.95

* You'll probably want to use a high quality capacitor here, the part # listed is for Xicon metallized polypropylene but you could use a Solen or other higher quality capacitor.

PCB Stuffing List

Part #	Value	Description
C3	4.7uF 250V	Output Coupling Capacitor
C5	0.1uF 400V	Screen Decoupling Capacitor
C8	4.7uF 250V	Output Coupling Capacitor
C10	0.1uF 400V	Screen Decoupling Capacitor
R1	Jumper	
R5	330k 1/2W	Output Load
R7	22k 2W	Cathode Follower Load Resistor
R8	Jumper	
R10	330k 1/2W	Output Load
R13	Jumper	
R14	680ohm 1/2W	EF86 Cathode Resistor
R16	Jumper	
R17	680ohm 1/2W	EF86 Cathode Resistor
R18	1.5M 1/2W	Screen Bias Resistor
R19	330k 1/2W	Bleeder
R20	Jumper	
R21	220k 1/2W	Plate Load Resistor
R22	Jumper	
R23	22k 2W	Cathode Follower Load Resistor
R24	220k 1/2W	Plate Load Resistor
R25	330k 1/2W	Bleeder
R26	1.5M 1/2W	Screen Bias Resistor

Mic Preamp Schematic

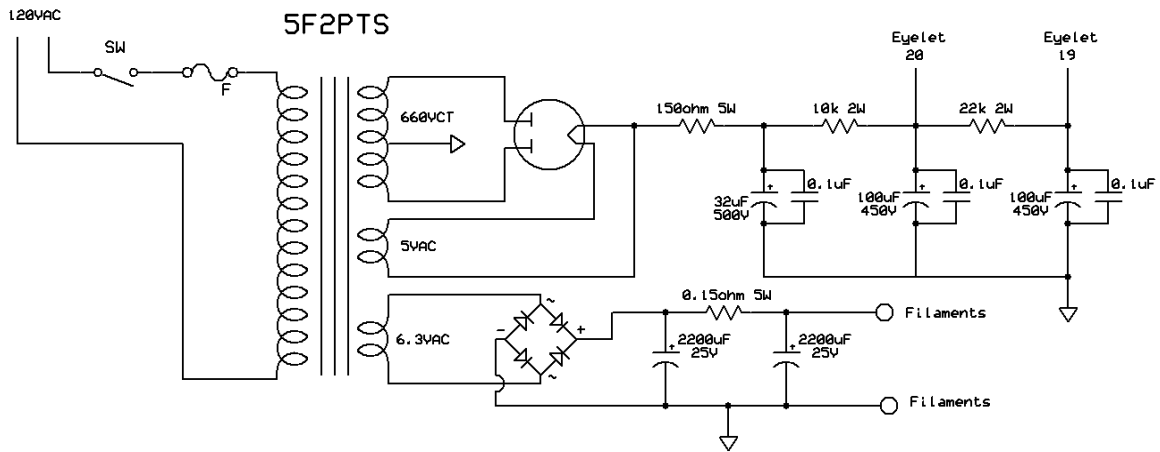


* Eyelets on other channel

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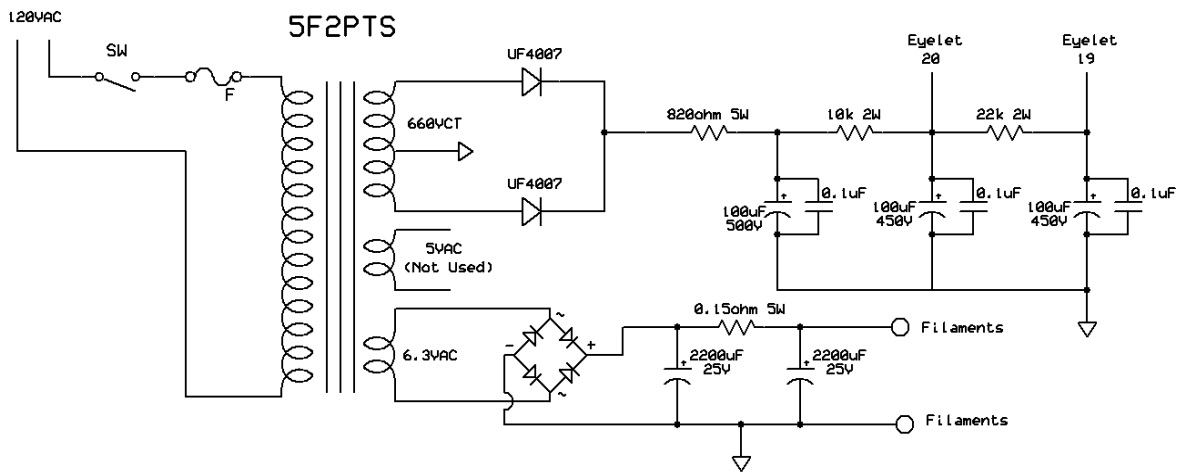
Tube Rectified Power Supply Schematic

- Tube rectifier can be 5Y3, 5V4, or 5AR4



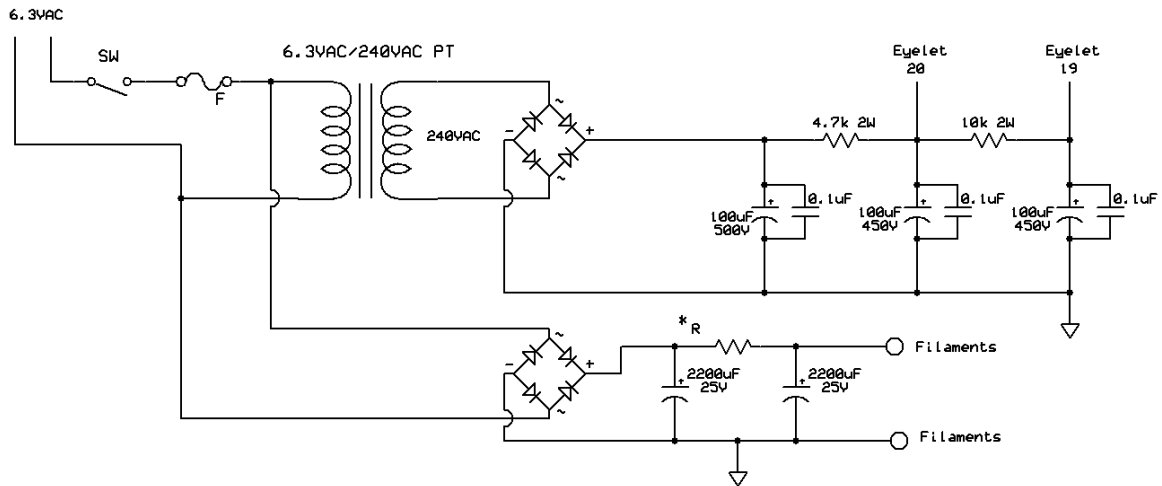
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Solid State Rectified Power Supply Schematic



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6VAC Wall Wart Power Supply Schematic



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* Resistor value chosen to keep DC output voltage at about 6V