Name:	Tube Mic Pre	Manufacturer / Designer:	PAiA Electronics	Revision:	11/11/95	Model #	9407

12VAC 0.5A

0.05uf
Vcc
S1
A
D1
100
+15v
470uf 25v
220uf 25v
G
330
470uf 25v
220uf 25v
D2
100
-15v
Power

IC1b 5 4
IC1a 3 2
IC1d 9 10
IC1c 6 7
220pf
33k
33k
IC1e 11 12

33uf
33uf
D3 D4 D5 D6 D7
33uf
33uf
33uf
+48v

Vcc - Pin 1 IC1
+15v - Pin 8 IC2, & IC3
-15v - Pin 4 IC2, & IC3
- Pin 8 IC1

IC1 - 4049 CMOS Hex Inverting Buffer
IC2, & 3 - 5532 Dual Low-Noise OpAmp
D1, D2 - 1N4001
D3 to D8 - 1N4148
D10 to D13 - 6.8v Zener Diode
D9 - 51v Zener Diode

IC1f 15 14
4k7
470k
Phant.
100
47uf
10k
PP On
+48v
D9
270k
10k
0.01uf
1uf
270k
270k
1uf
220
82k
10k Output
Output
D8
270
IC2b 7 5 6
100k
1uf
100k
1uf
82k
1uf
100k
10k Blend
470k
470k
5pf
IC3a 2 1 3
470
33uf
Drive
100k
6
12AX7
2
10k
10k
470
33uf
Polarity
4.7uf
6k81
10k
D10
D11
D12
D13
1k
33k
IC2a 2 3 1
7
150k
47k
8 4 9 5 3
100k Symmetry
22k
IC3b 6 5 7
Bal Out
Mic In
2 3 1
6k81
10k
33k
10k Tube Drive
2k7 12VAC 2k7
1k
220

All 33uf caps 16v all others 50v unless marked othewise. Resistors marked with # are 1% film type. The "Drive" LED indicates how hard the tube is being driven. The "Blend" control allows for a mixing of SS and tube coloration. Symmetry controls the relative amounts of even and odd harmonics, CCW the Tube Mic Pre may sound punchier, while CW it may sound warmer. The 12VAC needed for pin 5 of the 12AX7 can be obtained from point G while pin 4 should be connected to point A.

Original circuit from Recording Magazine January 1995

1 / 2

USING STERO PHONE JACKS FOR INPUT
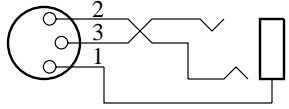
This mod converts the XLR jacks to 1/4" balanced stereo jacks. However, when a mono plug is used with this new jack the inverting input of the differential amp is grounded, this single-ends the balanced input so standard phone plugs on dyanmic mics can be plugged in directly. Additionally the polarity switch still works, even for unbalanced inputs. If phantom power is not turned off while using a singled ended input the performance of the TMP will not be up to par but it won't damage the TMP either.

USING THE TMP WITH LINE LEVEL SIGNALS

There are two options for line level signals. First if you know that you'll be using line level signals all the time with the TMP then you can change the two 33k 1% resistors to 1k 1% types and your done. Alternatively if you want the option of line level or low level signals then you can sacrifice the polarity switch and and rewire it here as shown. Notice that the 47k resistors are again of the 1% variety.

Low / Line Level

Mic In
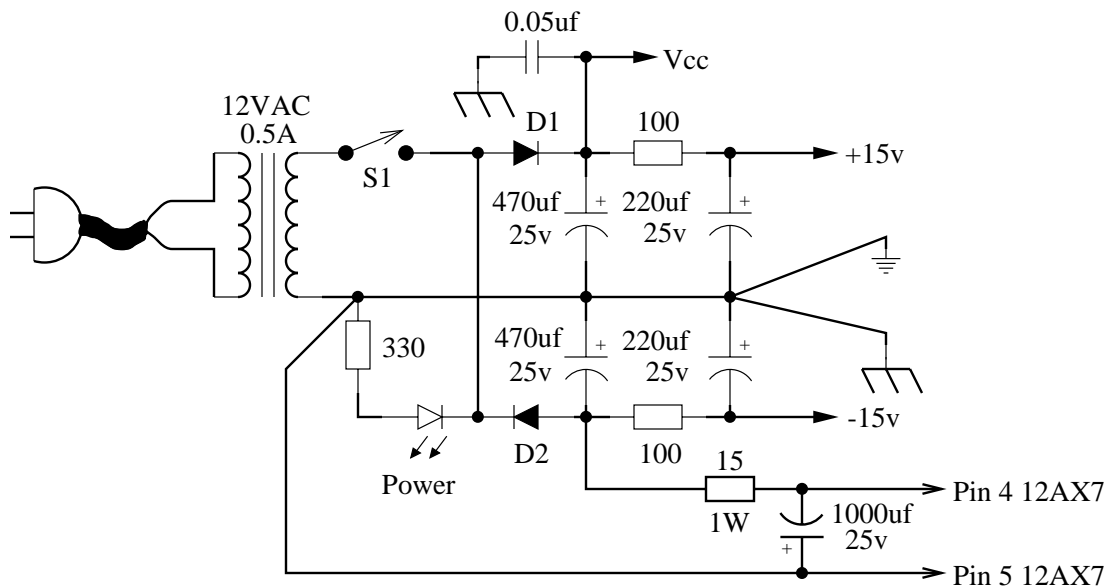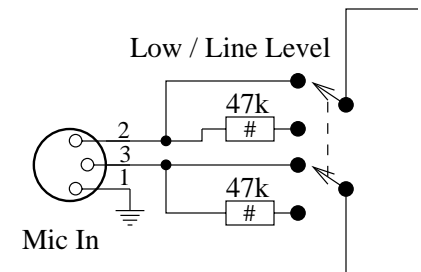
USING DC TO POWER THE HEATER FILAMENTS

This mod can make the TMP quiter. Insted of using the 12VAC to power the heater filaments rectified and filtered DC can be used. This is accomplished as shown. The new resistor added is a 15 ohm 1W type, the new cap is a 1000uf 25v as shown. It is critical that pin 5 of the 12AX7 connects to the ground point shown.