

Marchand Electronics Inc.

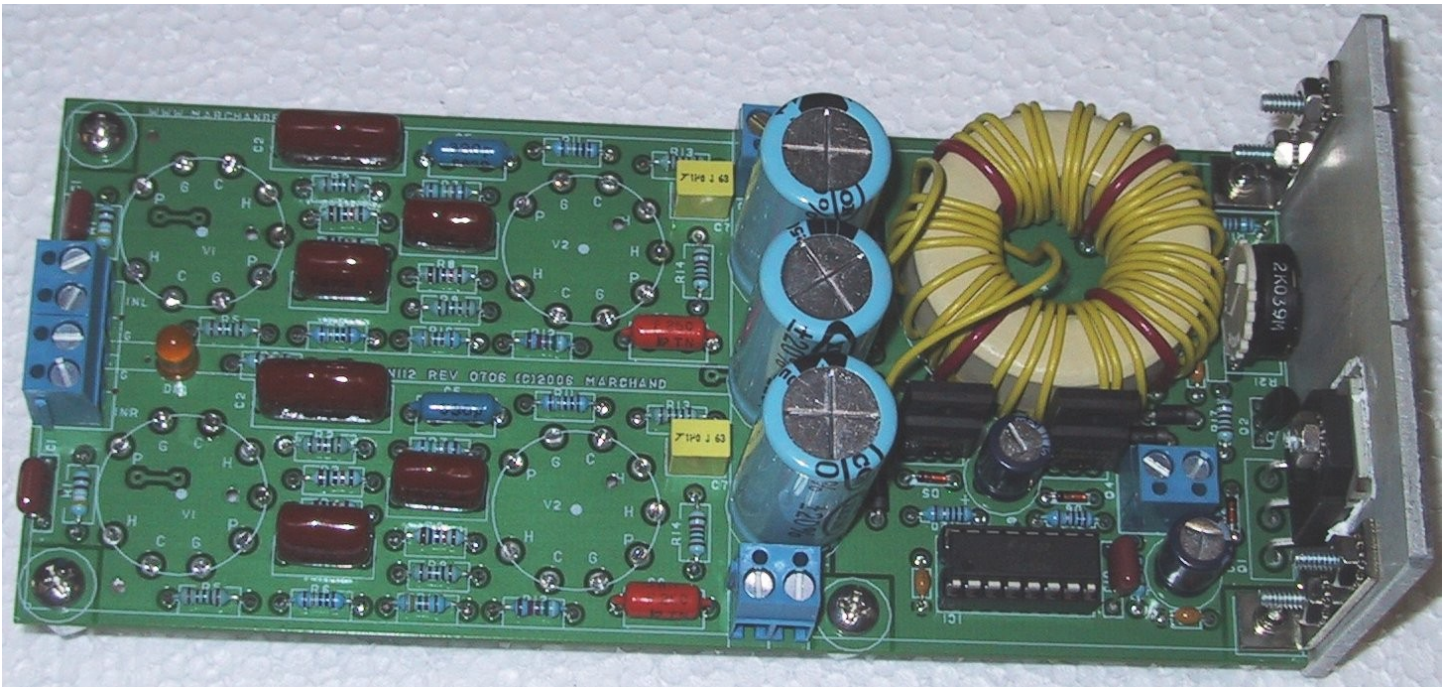
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LN112 Phono Preamp REV 0706

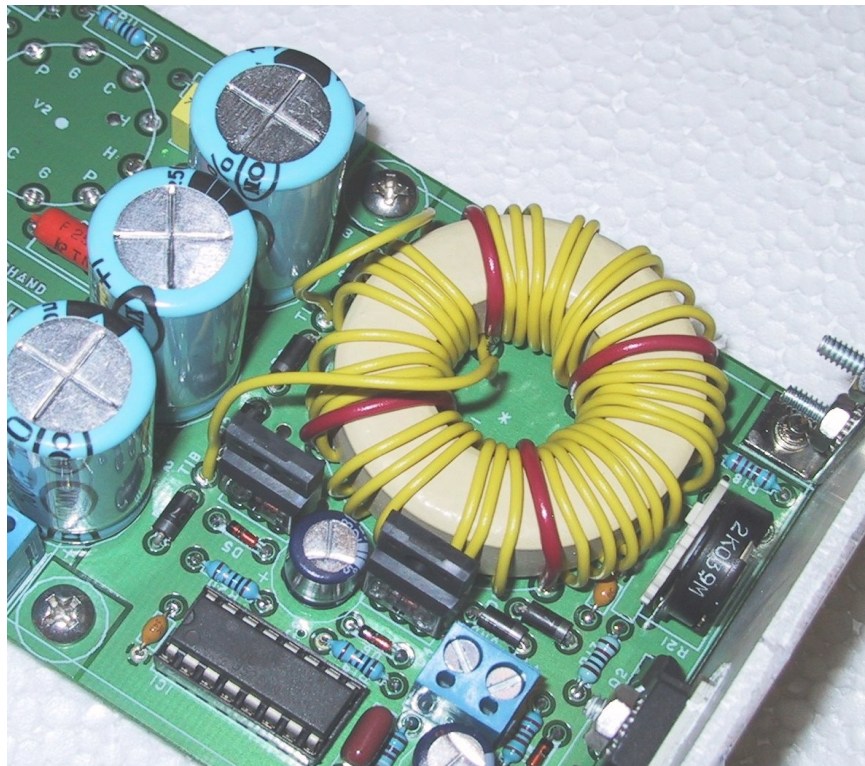


Parts List

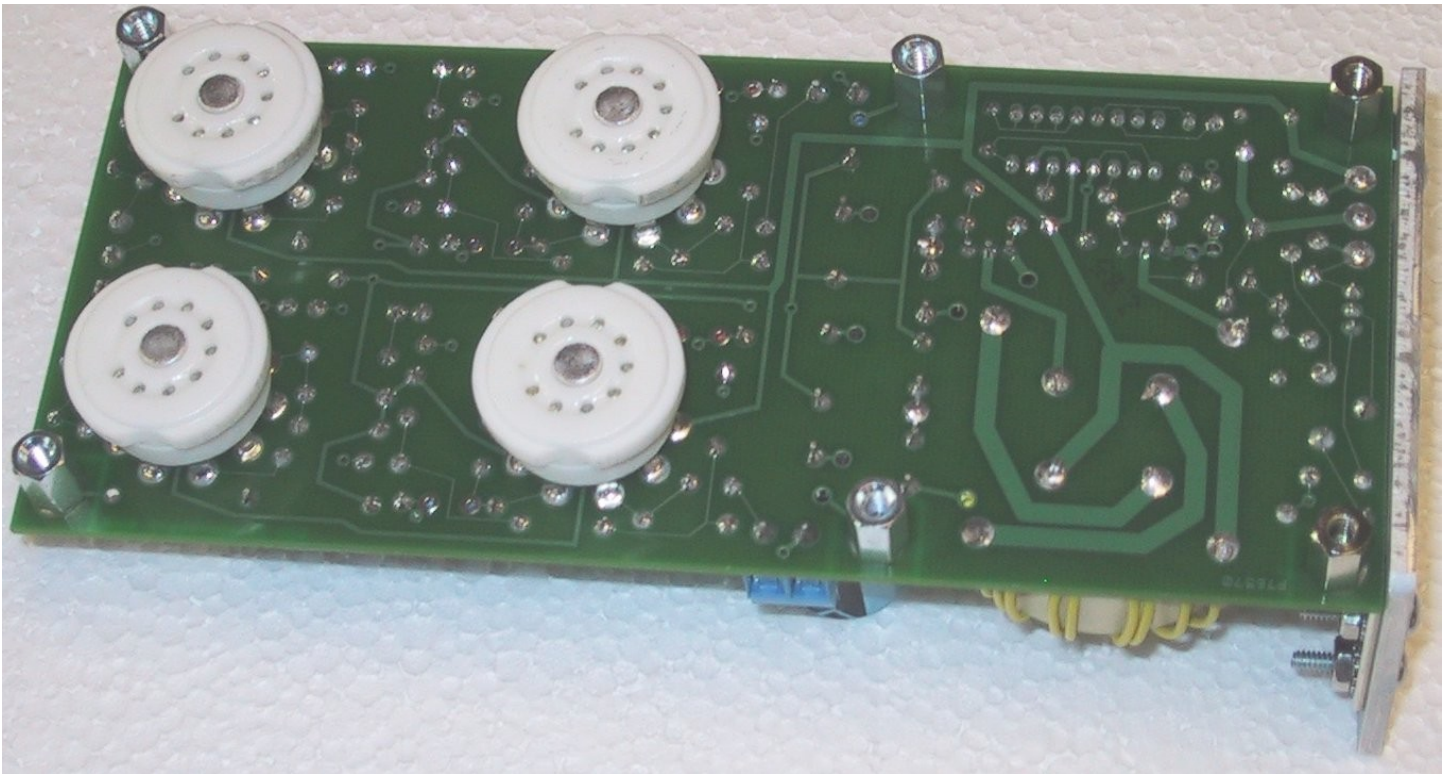
R1	49K9	1% metal film	C9	330uF,25V	8mm aluminum electrolytic
R2	1K00	1% metal film	C10	0.001 uF	polypropylene
R3	100 K	1% metal film	C11	100uF,250V	aluminum electrolytic
R4	100 K	1% metal film	C12	100uF,250V	aluminum electrolytic
R5	1K00	1% metal film	C13	100uF,250V	aluminum electrolytic
R6	1M00	1% metal film			
R7	154 K	1% metal film	D1	UF4007	ultra fast 1A diode
R8	100 K	1% metal film	D2	UF4007	ultra fast 1A diode
R9	1K00	1% metal film	D3	UF4007	ultra fast 1A diode
R10	845 K	1% metal film	D4	UF4007	ultra fast 1A diode
R11	1M00	1% metal film	D5	1N5248	18V zener
R12	95K3	1% metal film	D6	1N5248	18V zener
R13	1K00	1% metal film	D7	UF4007	ultra fast 1A diode
R14	10K0	1% metal film	D8	1N5248	18V zener
R15	3K92	1% metal film	D9	1N5232	5.6V zener
R16	2K21	1% metal film	D10		red/amber LED
R17	10K0	1% metal film	D11	UF4007	ultra fast 1A diode
R18	2K21	1% metal film			
R19	10 Ohm	1% metal film	Q1	IRFP240	MOSFET
R20	10 Ohm	1% metal film	Q2	PN2222A	NPN
R21	2K	trimmer	Q3	IRF540	MOSFET
R22	249 K	1% metal film	Q4	IRF540	MOSFET
CB	0.1uF	axial monolythic	IC1	SG3525	DIP16 socket
C1	220 pF	polypropylene			
C2	0.22 uF,250V	film	V1,2,3,4	12AX7WA	dual triode
C3	0.047uF,250V	film			
C4	0.047uF,250V	film	T1	TX39/20/13-3E27	2T+2T / 39T
C5	330 pF	1%polypropylene (blue)			
C6	3300 pF	1%polypropylene (orange)	bracket	534-708	Keystone
C7	1.0 uF,63V	film (yellow box)	blue terminal blocks		
C8	330uF,25V	8mm aluminum electrolytic			



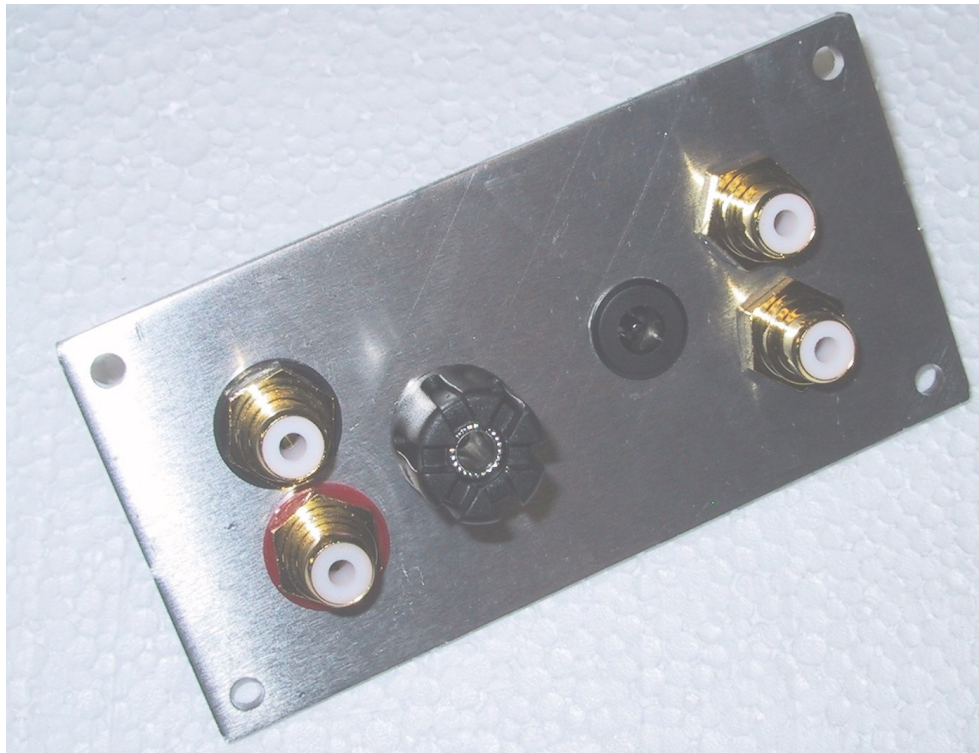
Components are installed in the usual way. Tube sockets on bottom (solder side) of the board . Install IC1 using 16-pin DIP socket. Fasten the brackets to the circuit board using 3/16 M/F standoffs. Attach heatsink w. 4 #4/40 x1/2" screws. Use mica insulator w. thermal compound on both sides with transistor Q1. fasten w. #4 screw. Note that the 4-position terminal block on the input has the entry holes on the "inside". this makes attaching the wires easier. This terminal block is made by attaching two 2-pos blocks together.



The toroid secondary has exactly 39 turns of #22 wire. Install the ends in holes marked T1A and T1B . The primary winding consists of 4 loops of #18 wire. These also attach the toroid to the circuit board. Cut the #18 gauge wire to 3" (75 mm) lengths and strip the ends, leaving 1 1/4" (32mm) of insulation in the middle. When soldering to the circuit board be sure to insert all strands of the wire into the hole. Loose strands will make shorts.



When installing the tube sockets, use the top plate as a guide to align the sockets.



Rear panel assembly:
The input connectors (on left) have plastic insulating washers. The output connectors (on right) have no washers.

Attach black top plate to the circuit board with 3/16" standoffs and #6 machine screws.

Important: Use star lockwashers between all 6 standoffs and the top plate. This will insure good electrical contact.

Wire the power entry connector to the main circuit board terminal block with #22 wire. Use red on V++ and black on GND. Use the shielded wire to connect inputs and outputs. The inputs go from the insulated RCA connectors to the terminal blocks marked INL and INR. Connect the shield to the solder lugs of the RCA connectors and to the terminal blocks marked G at the input. Also use shielded wire for the output wiring between the not-insulated RCA connectors and the terminal blocks OR and OL. Connect the shields to the terminal blocks next to these.

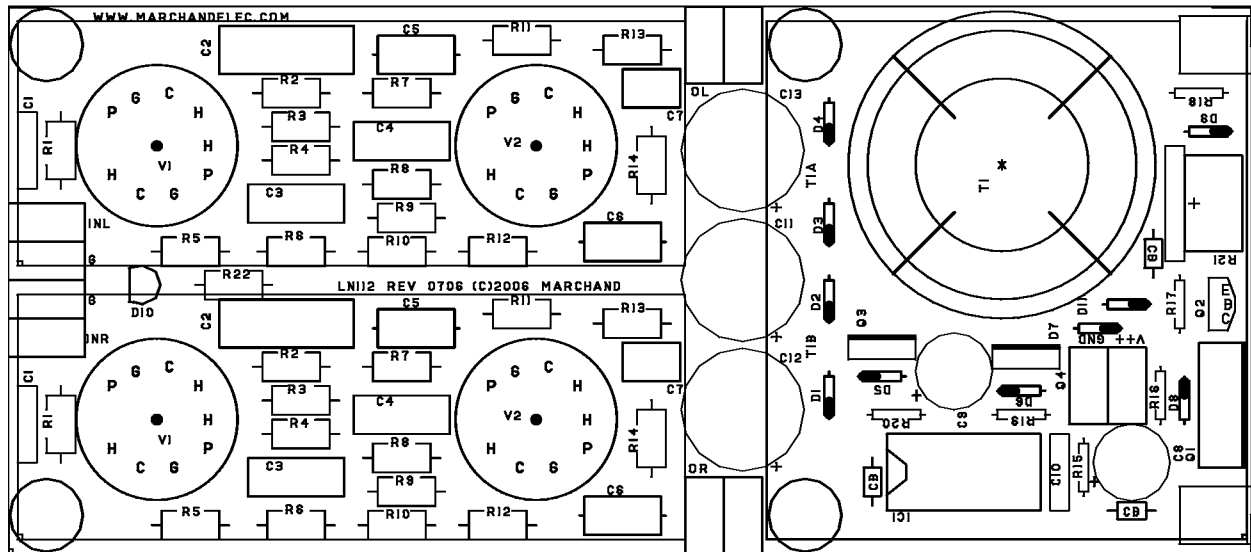
Apply power using the 15VDC external power supply.

The LED should light up, indicating HV power.

The HV power is approx 250V: be careful!

Adjust potentiometer R21 for a heater voltage of 12.6V

You can measure the heater voltage between the two pins marked H on any of the w tubes.



Packing list

		<u>Resistors</u>	1	LN112 circuit board
			1	Heatsink
2	10 Ohm	1% metal film	1	rear panel
8	1K00	1% metal film	1	top cover
2	2K21	1% metal film	1	bottom cover
1	3K92	1% metal film	4	stick-on rubber bumper
3	10K0	1% metal film	1	Wood Base
2	49K9	1% metal film	1	nameplate w. screws
2	95K3	1% metal film	4	RCA connectors
6	100 K	1% metal film	1	red teflon shoulder washer
2	154 K	1% metal film	1	red teflon flatwasher
1	249 K	1% metal film	1	black teflon shoulder washer
2	845 K	1% metal film	1	black teflon flatwasher
4	1M00	1% metal film	4	locknut 5/16"
			4	nut, 6/16"
1	2K	trimmer	4	solder lug 5/16"
			1	Binding post
		<u>Capacitors</u>	1	power connector
2	220 pF	polypropylene	2'	18 gauge wire, red
2	330 pF	1%polypropylene (blue)	10'	22 gauge wire, yellow
2	3300 pF	1%polypropylene (orange)	2'	22 gauge wire, red
1	0.001 uF	polypropylene	2'	22 gauge wire, black
2	0.22 uF,250V	film	4'	shielded wire, 2 conductor
4	0.047uF,250V	film	1	15, 1A universal power supply
3	0.1uF	axial monolythic		
2	1.0 uF,63V	film (yellow box)		
2	330uF,25V	8mm aluminum electrolytic		
3	100uF,250V	aluminum electrolytic		
		<u>Diodes & transistors & IC</u>		
6	UF4007	ultra fast 1A diode		
1	1N5232	5.6V zener		
3	1N5248	18V zener		
1		red/amber LED		
1	IRFP240	MOSFET		
1	PN2222A	NPN		
2	IRF540	MOSFET		
1	SG3525	Switchmode driver		
4	12AX7WA	dual triode		
1	TX39/20/13-3E27	toroid core		
1		16-pin dip socket		
5		2-pos. blue terminal blocks		
4		9-pin tube socket		
2		bracket 534-708 Keystone		
2		#6 M/F hex standoff		
4		#6 hex standoff		
6		#6 star lockwasher		
10		6/32 x 1/4" machine screw, black		
12		#6 wood screw, black		
5		4/40 x 1/2" machine screw		
5		4/40 hex nut		
1		MICA insulator TO247		
1		Thermal grease		