

**STEREO PREAMPLIFIER**

**GENERAL:** The Shure M60 Stereo Preamplifier is a high quality, flat amplifier designed primarily to allow the phono cartridge to be used at a distance from the control preamplifier.

The M60 preamplifier matches the impedance of the phono cartridge and has dual input and dual low impedance outputs so that up to 50 (15.2 m) feet of cable (30MMFD per foot) can be used between the M60 preamplifier and the main control center with no noticeable deviation in the entire audio frequency response. The M60 has 17db gain (per channel) to overcome any losses in signal transmission. The additional gain by use of the preamplifier, also, reduces the hum and noise very often present in certain high fidelity systems.

The M60 preamplifier has a chrome plated chassis that fits under most turntables and record changers. It is shock mounted to reduce microphonics and acoustic feedback. The preamplifier has its own power supply and is equipped with an ON-OFF switch.

The M60 Stereo Preamplifier can be used as a general purpose flat amplifier having a gain of 17db per channel (stereo) or 34db gain (monaural) with microphones, headsets, test equipment, etc.

Output voltages of approximately 2 volts RMS are obtainable before a 10% harmonic distortion of waveform is noted.

**SPECIFICATIONS:**

**Gain:** 17db per channel—5 millivolts input produces 35 millivolts output.

**Frequency Response:**  $\pm 1$ db from 30 to 80,000 c.p.s.

**Equalization:** None.

**Input Impedances:** 47,000 ohms.

**Output Impedances:** 5,000 ohms.

**Hum and Noise Level:** 64db below rated output.

**Distortion:** Less than 0.14%. 1000 c.p.s. at rated output.

**Separation Between Channels:** 30db.

**Channel Balance:**  $\pm 1$  db.

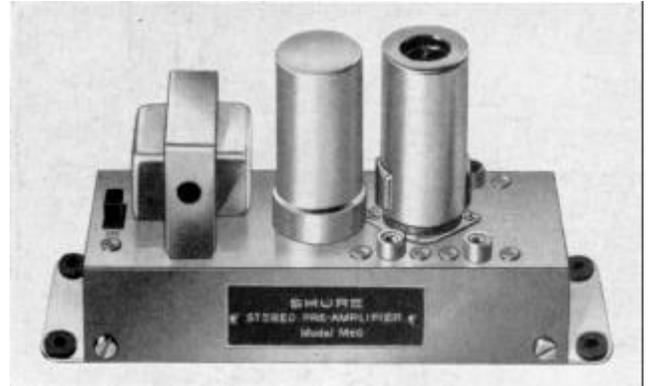
**Tubes:** One dual function ECC83/12AX7.

**Rectifier:** Selenium-Full wave rectification for minimum ripple

**Power Requirements:** 117 volts 60 c.p.s. 4 watts.

**Finish:** Chrome plate.

**Overall Dimensions:** Length 6-9/16 (166.7 mm); Width 2" (57.2 mm); Height 3-3/8 (85.7 mm).



**INSTALLATION:** The M60 Stereo Preamplifier may be mounted under most turntables or record changers. Rubber insulation mounts are provided to reduce microphonics and acoustic feedback. Figure A shows how the rubber shock mounts are installed. Machine or self-tapping screws can be used through the 4 corner mounting holes in the preamplifier base.

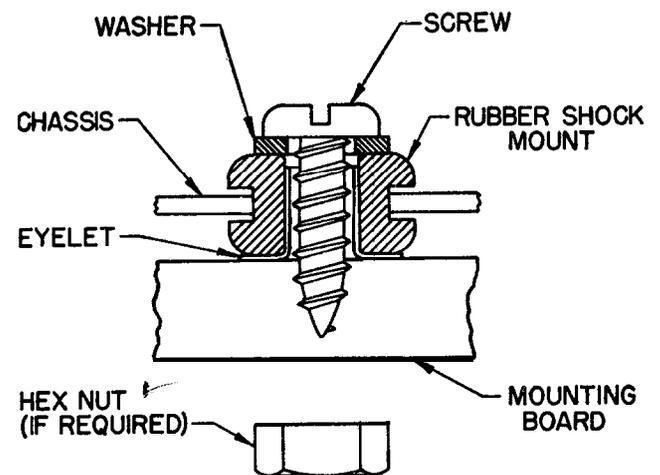
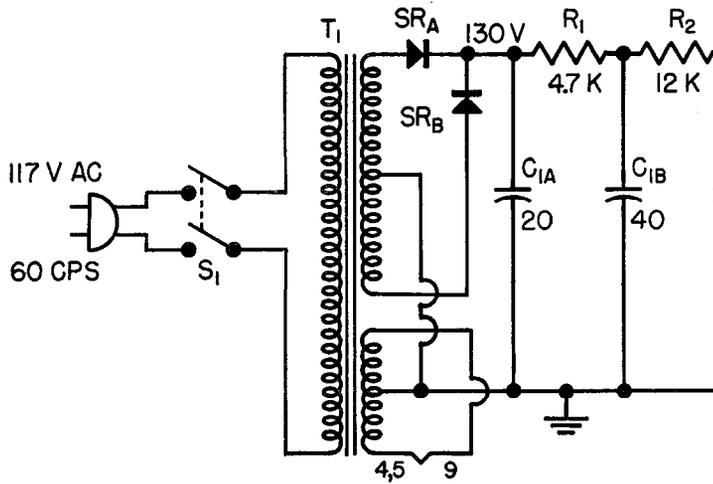


FIG. A

For minimum hum pickup and best operating conditions, the preamplifier should be placed as far away from the turntable motor as conveniently possible.

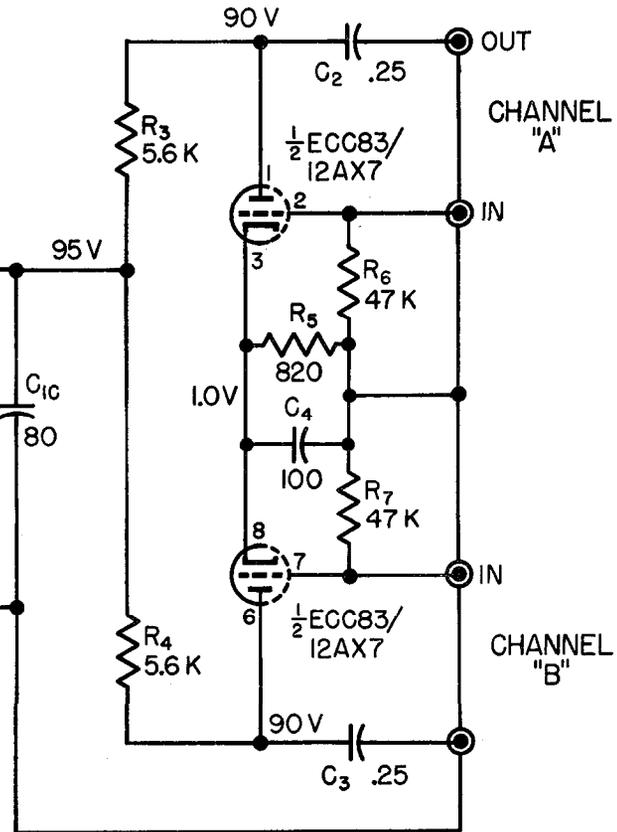
**CONNECTIONS:** The internal wiring connections are shown in Figure B.

To place the M60 preamplifier in operation as a two channel stereo preamplifier, connect the signal leads from the cartridge into the channel A and B (phone jacks marked "IN"). The output of the preamplifier (phono jacks marked "OUT") should be connected to the main control preamplifier of the stereo system. Attention must be given to all of the information contained in the cartridge or phono arm data sheets regarding phasing, grounding, etc. If it is found necessary to "ground" the M60 preamplifier chassis, a wire can be connected to one of the screws holding the bottom plate on to the chassis.



Capacitance in Microfarads  
Resistance in Ohms

Resistors - 1/2 Watt,  $\pm 10\%$   
except  $R_5$  &  $R_6$ ,  $\pm 5\%$



Voltages shown should be measured to chassis ground using VTVM.

FIG. B

If the full 17db gain is not required, lower output voltages and lower impedances are possible with the use of a simple resistor network at the output of the preamplifier. This circuit change is shown in Figure C for a 1/3 or a 2/3 reduction in amplifier output.

**CAUTION:** The electrical plug should be removed from the power outlet before the chassis is opened or any changes are made.

**For 1/3 Reduction (2/3 output)**

Replace each 5600 ohm Resistor ( $R_3$  and  $R_4$ ) with two Resistors ( $R_{3a}$  and  $R_{3b}$ ,  $R_{4a}$  and  $R_{4b}$ ) having the following values:

$R_{3a}$  and  $R_{4a}$ -3900 ohms, 1/2 watt,  $\pm 10\%$ .  
 $R_{3b}$  and  $R_{4b}$ -1800 ohms, 1/2 watt,  $\pm 10\%$ .

**For 2/3 Reduction (1/3 output)**

Replace each 5600 ohm Resistor ( $R_3$  and  $R_4$ ) with two Resistors ( $R_{3a}$  and  $R_{3b}$ ,  $R_{4a}$  and  $R_{4b}$ ) having the following values:

$R_{3a}$  and  $R_{4a}$ -1800 ohms, 1/2 watt,  $\pm 10\%$ .  
 $R_{3b}$  and  $R_{4b}$ -3900 ohms, 1/2 watt,  $\pm 10\%$ .

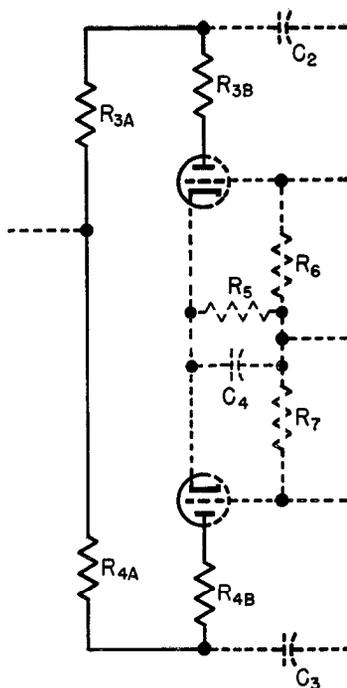


FIG. C

**GUARANTEE:** This Shure High Fidelity Component is guaranteed to be free from electrical and mechanical defects for a period of 90 days from date of shipment from the factory, provided all instructions are complied with fully. In case of damage, it is essential that you carefully repack the unit and return it to the factory for repair. Our guarantee is voided if the basic assembly has been opened or subjected to unreasonably rough handling.