

TRANSISTOR STEREO PREAMPLIFIERS

General: The Shure M61 Series Transistor Preamplifiers are designed to furnish the voltage gain and equalization necessary to operate magnetic phono cartridges (such as the Shure Dynetic Cartridges) and tape playback heads with standard audio amplifiers. One of the primary uses of the M61 is in conversion of Stereo systems from ceramic cartridges to magnetic cartridges. It can also be used without circuit modification as a preamplifier for microphones. Advantages include complete freedom from microphonics, extremely low noise, the use of 50 feet or more of output cable in "phono" and "tape" positions, and years of maintenance-free performance. The operating temperature range is from 32°F. (0°C.) to 140°F. (60°C.).

The Model M61-1 operates on 105-125 volts 50-60 Hertz power line.

The Model M61-2 operates on 210-240 volts 50-60 Hertz power line.

The Model M61-3 operates on battery power.

The Model M61 Preamplifiers feature a single slide switch for selection of either phono (RIAA), tape (NAB), or a microphone (MIC) function. The RIAA position provides the Standard Equalization for phono records. The NAB position provides the Standard Equalization for tape and the MIC position provides a flat amplifier for microphones.

The preamplifier has dual input and output jacks which will accept standard phono pugs.

The input impedance is optimized for Dynetic and magnetic phono cartridges, for tape heads, and for low or medium impedance microphones.

The output load will typically be the 500,000 ohm Tuner or Ceramic input of an Amplifier. Earphones of 4,000 ohms or more nominal impedance can be connected directly, or through a 1,000,000 ohm control, to the M61 output with the following specifications obtaining down to 250 Hertz or lower.

SPECIFICATIONS

Gain: RIAA (Phono) 46 db (5 millivolts input produces 1.0 volt)
NAB (Tape) 41 db (2 millivolts input produces 0.225 volt)
MIC 63 db (2 millivolts input produces 2.8 volts)

Frequency Response and equalization:

Phono: Standard RIAA equalization
Tape: Standard NAB equalization
MIC: Response ± 2 db from 20 Hz. to 15,000 Hz.

Input Impedance:

Phono end tape: Approximately 50,000 ohms at 1,000 Hz.
Microphone: Approximately 20,000 ohms at 1,000 Hz.

Output Impedance:

LOW output impedance (less than 1,000 ohms at 10,000 Hz. for phono end tape functions)

Channel Separation:

50 db or better (at 1,000 Hz.)



Channel Balance:

2 db at 1,000 Hz. (for Phono end Tape functions)

Hum and noise:

76 db below 10 millivolt input, unweighted

Distortion:

Less than 1%. Measured at 1 volt output

Output Clipping level:

More than 4.5 volts (at 1,000 Hz.)

Available power supplies:

- 105-125 volts 50-60 Hertz (included in Model M61-1)
- 210-240 volts 50-60 Hertz (included in Model M61-2. Available separately as Model PS220).
- Battery [included in Model M61-3. Available Separately as Model PSB30).

The battery (Burgess type K20 or Eveready type 430) provides 170 hours minimum of operation.

Overall Dimensions: Preamplifier or power supply

Length 5 $\frac{1}{4}$ inches (133.4 mm)
Width 2-7/16 inches (61.9 mm) preamplifier has plug pins extending an additional $\frac{1}{2}$ inch (12.7 mm)
Height 2-5/16 inches (58.7 mm) over switch button

Weight: Net weight (M61-1) 1 $\frac{1}{4}$ pounds (567g)

Packaged weight (M61-1) 2 $\frac{1}{2}$ pounds (1133.8g)

Installation: The M61 Preamplifiers and power supply may be mounted on an amplifier chassis or cabinet by using the wood screws or machine screws provided. The Preamplifier can be mounted in any position for normal operation; but for best results, the Preamplifier should be located away from motors or other hum producing power sources and away from intense heat sources. Should hum be a problem in a given system or installation, one or more of the power plugs may be reversed to reduce hum.

Caution: The use of the M61 Stereo Preamplifier with other power amplifiers of the transformerless (AC-DC) type may be a shock hazard.

A suitable power line isolation transformer should be used.

Connections: a. Set selector switch to the desired function. This automatically selects the proper equalization or frequency response for both channels.

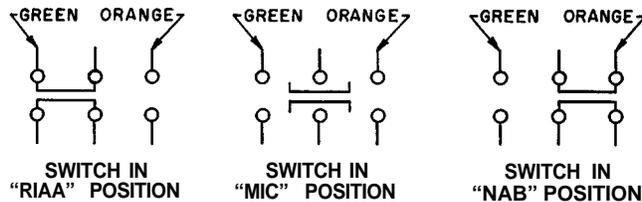
b. For the Phono (RIAA) position, connect the signal leads from the phono cartridge to the jacks marked "IN" at channel "A" and channel "B". For the microphone position using two separate microphones, connect the cable from one microphone to jack marked "IN" at channel "A". The cable from the other microphone should connect to the jack marked "IN" at channel "B". For single microphone application connect to either channel "A" or "B".

Attention must be given to information contained in the data sheets of the phono cartridge, tape head, or microphone regarding their connections, phasing, and grounding.

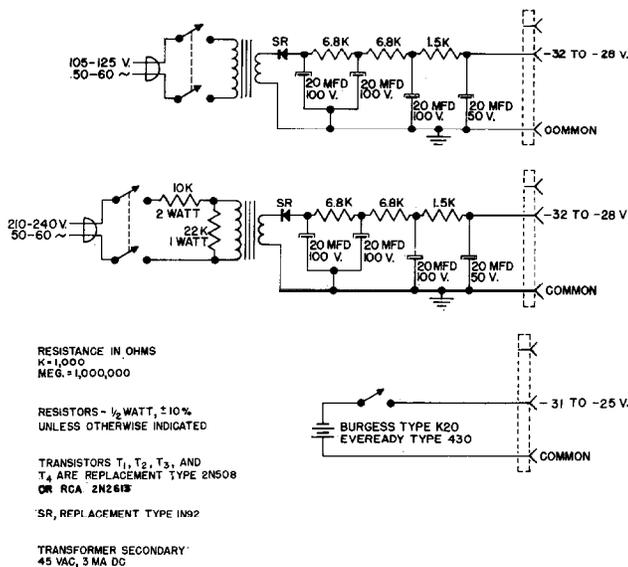
c. Connect the jacks marked "OUT" of channel "A" and "B" to the corresponding input jacks of the power amplifier or preamplifier or to the earphones. (Parallel the outputs for monaural earphones). If it is

found necessary to "ground" the M61 Preamplifier chassis, a wire can be connected to one of the screws holding the bottom plate to the chassis.

d. If AC power operated, insert the M61 power line cord in a proper power outlet preferably one controlled by the power amplifier's On-Off switch. Be sure power switch on preamplifier is in the ON position. If the battery power supply is used, an ON-OFF switch is provided.



Guarantee: This Shure High Fidelity Component is guaranteed to be free from electrical and mechanical defects for a period of one year 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 factor for repair. Our guarantee is voided if the assembly has been subjected to unreasonably rough handling.

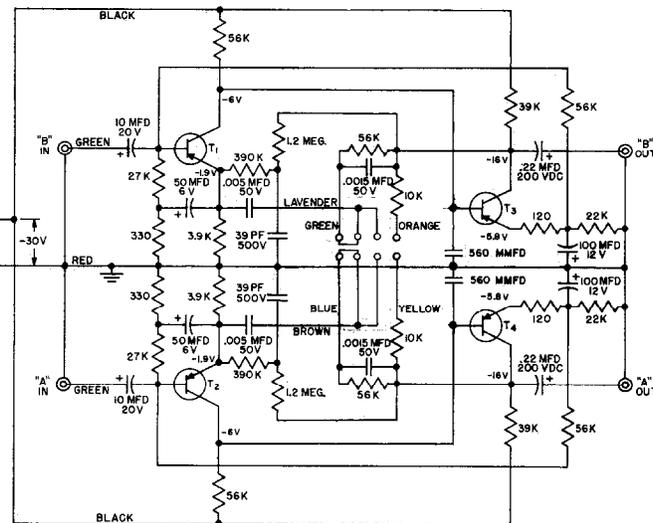


CIRCUIT DIAGRAMS OF POWER SUPPLIES

The M61 Preamplifier has been designed to operate satisfactorily with most magnetic phono cartridges. However, certain cartridges having very high output may cause overloading and distortion.

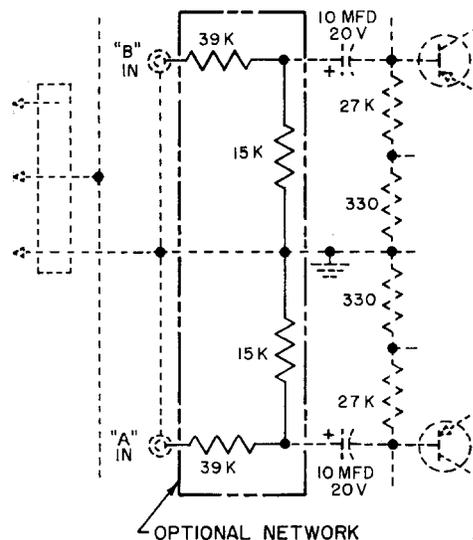
This distortion can be eliminated by using a simple resistor network at the input of the preamplifier. See "Optional Network."

The network must be used in both channels and can be inserted inside the preamplifier case or can be made up as an external attenuator between the phono cartridge and the preamplifier inputs.



NOTE: D.C. BIAS VOLTAGES ARE APPROXIMATE WITH LINE VOLTAGE OF 117 V.A.C.

CIRCUIT DIAGRAMS OF PREAMPLIFIER SECTION



OPTIONAL NETWORK