

The SE20 is a two-channel solid state equalized preamplifier/line amplifier designed to provide the very highest quality disc reproduction for broadcast and recording studio applications. While primarily designed for stereo use, it may be very effectively utilized for two separate monaural channels.

Features include:

- Precise RIAA/NAB equalization.
- Completely solid state.
- High impedance inputs properly match almost all magnetic disc reproducers.
- Individual high and low frequency equalization trimmers on each channel.
- Individual channel level controls.
- Extremely low noise and RF susceptibility.
- Full line output capability.

**SPECIFICATIONS**

**Frequency Response:** RIAA/NAB disc playback characteristic within  $\pm 1$  db from 30 to 15,000 Hz. (NAB 1964 Disc Standard, recommended low frequency roll-off  $-6$  db/octave, 3 db down at 20 Hz.)

**Gain:** 54 db, adjustable.

**Distortion:** Less than 0.5% THD at +20 dbm from 20 to 20,000 Hz.

**Channel Separation:** 10,000 Hz. 50 db minimum  
1,000 Hz. 50 db minimum  
100 Hz. 42 db minimum

**Hum and Noise:** At least 60 db below +6 dbm output (gain set for +6 dbm out with 5 mv in  $-32$  to 18,000 Hz. band pass filter).

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

*Orig. Electrical  
Keying Plate 1975  
4735*



**Output Impedance:** For 600 or 150 ohm balanced line (Approximately 80 ohms actual)

**Operating Temperature:** Within 0.5 db of all specifications at  $-7$  to  $57^{\circ}\text{C}$  (20 to  $135^{\circ}\text{F}$ .)

**Overall Dimensions:** See Figure B.

**Weight:** 7 pounds, 10 ounces (3.46 kg)

**Operating Voltage:** 120 volts  $\pm 10\%$  at 50/60 Hz. 220 volts  $\pm 10\%$  at 50/60 Hz. (See section on 220 volt operation)

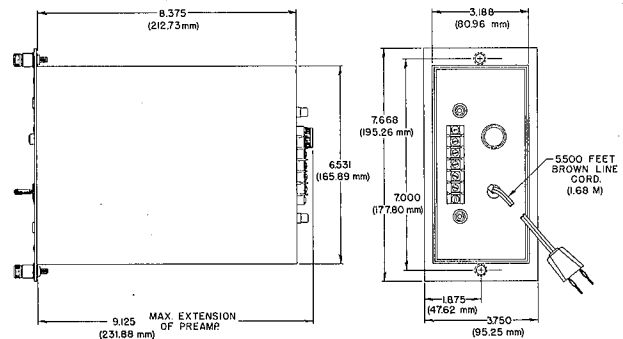


FIGURE B  
OVERALL DIMENSIONS

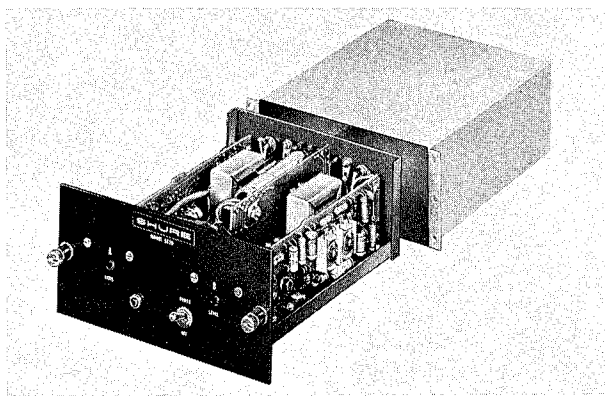


FIGURE A  
MODEL SE20 WITH COVER

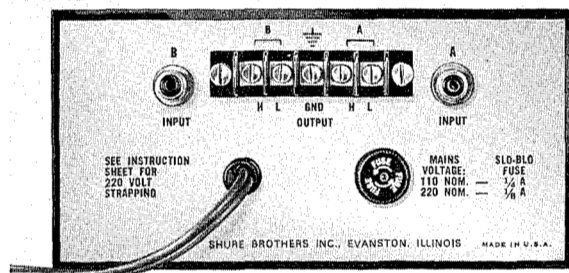
**CONTROLS, CONNECTIONS, AND OPERATION**

**Inputs:** Input jacks (phono type) are located on the rear panel and designated "A" and "B." Channel level controls and output terminals are correspondingly lettered. Any magnetic pickup designed for operation with a 47,000 ohm input termination may be directly connected to these jacks.

The SE20 may be used either as a stereo preamplifier or as two separate monaural channels. If a stereo cartridge is to be used (with its channels paralleled) as a

monaural source to one channel of the SE20, the SE20 input should be shunted with a 47,000 ohm resistor or the high frequency trimmer should be readjusted for proper high frequency equalization.

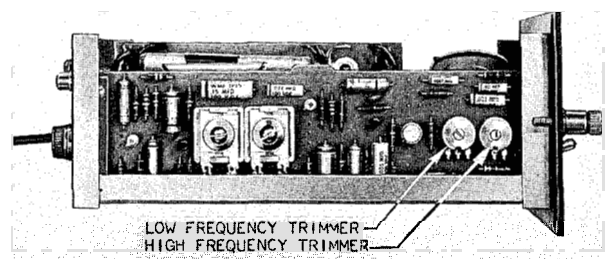
**Outputs:** Output terminals appear on the rear panel as shown in Figure C. Outputs are balanced and designed to feed a 150 ohm or 600 ohm line.



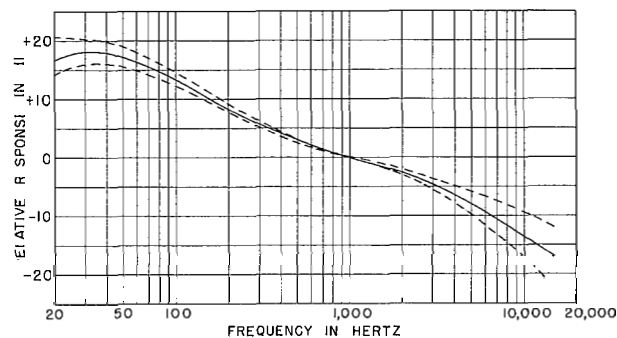
REAR PANEL  
FIGURE C

**Channel Level Controls:** These controls are located on the front panel designated as "Channel A Level" and "Channel B Level." They are used to adjust the overall operating level of the SE20 and to balance the individual levels of the two channels.

**Response Trimmers:** To allow for balancing the response of the two channels of a stereo cartridge, or of two monaural cartridges, high and low frequency response trimmers are provided for each channel. Figure D shows the location of these controls and Figure E shows the range and character of the response change obtainable.



RESPONSE TRIMMERS  
SIDE VIEW (COVER REMOVED)  
FIGURE D

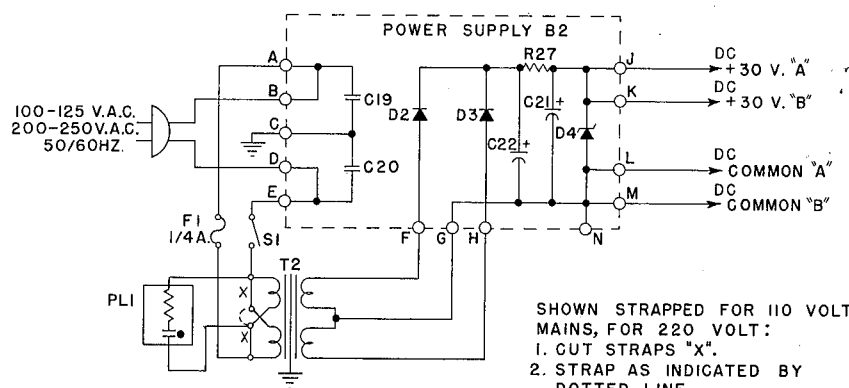
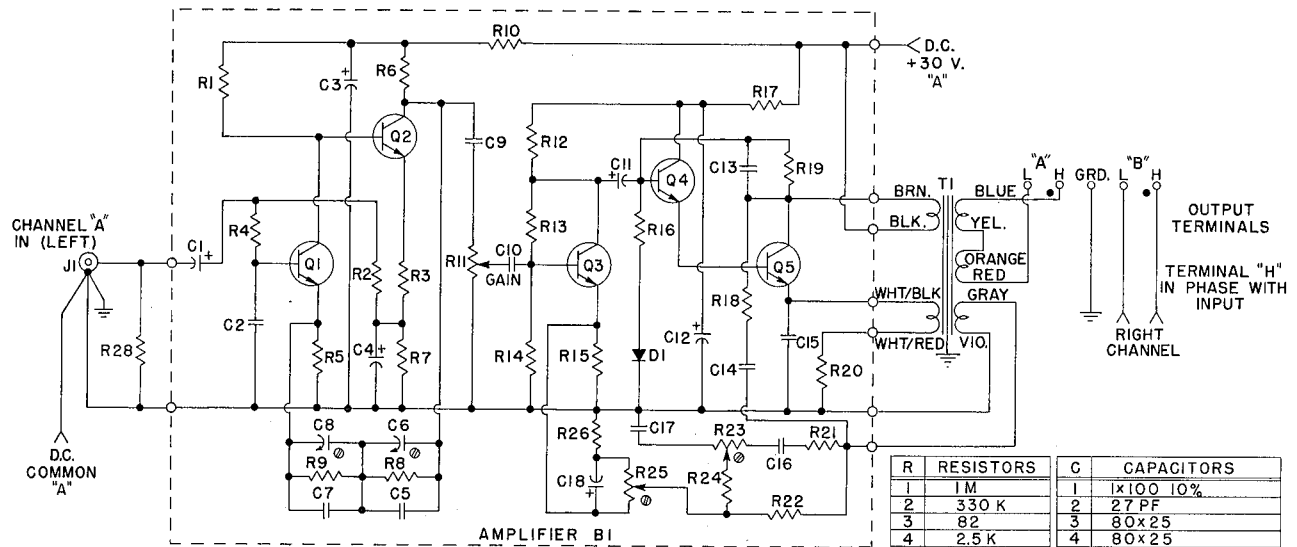


TYPICAL EFFECT OF RESPONSE TRIMMERS  
FIGURE E

**220 Volt Operation:** The power transformer may be restrapped for operation with 220 volt A.C. supply. To make this change, see instructions on schematic for revising power transformer connections.

**Guarantee:** This Shure product is guaranteed in normal use to be free from electrical and mechanical defects for a period of one year from the date of purchase. Please retain proof of purchase date. This guarantee includes all parts and labor.

**Shipping Instructions:** Carefully repack the unit and return it prepaid to the factory. If outside the United States, return the unit to your dealer or Authorized Shure Service Center for repair. The unit will be returned to you prepaid.



SHOWN STRAPPED FOR 110 VOLT  
MAINS, FOR 220 VOLT:  
1. CUT STRAPS "X".  
2. STRAP AS INDICATED BY  
DOTTED LINE.  
3. USE 1/8 AMP. SLO-BLO FUSE.

STEREO TRANSISTORIZED TRANSCRIPTION PREAMPLIFIER

- NOTES:
- EQ TRIM. { 5KHZ-R23  
30HZ-R25
  - CHANNEL "A" IS SHOWN,  
CHANNEL "B" IS IDENTICAL  
TO CHANNEL "A".
  - ALL RESISTORS 1/2 WATT, 5% CARBON COMPOSITION  
UNLESS SHOWN. POTENTIOMETERS 20% TOLERANCE.
  - ALL NON-ELECTROLYTIC CAPACITORS IN MFD, 10%  
AND 100 VOLTS OR MORE UNLESS SHOWN.  
ELECTROLYTIC CAPACITORS SHOWN IN MFD×VOLTS  
(TOLERANCE, -10 +50 UNLESS SHOWN).

| R  | RESISTORS    | C  | CAPACITORS      |
|----|--------------|----|-----------------|
| 1  | 1M           | 1  | 1x100 10%       |
| 2  | 330 K        | 2  | 27 PF           |
| 3  | 82           | 3  | 80x25           |
| 4  | 2.5 K        | 4  | 80x25           |
| 5  | 1K           | 5  | .0015           |
| 6  | 22 K         | 6  | 190-760PF       |
| 7  | 1K           | 7  | .0068           |
| 8  | 36 K         | 8  | 190-760PF       |
| 9  | 560 K        | 9  | .15             |
| 10 | 12 K         | 10 | .033            |
| 11 | 50 K         | 11 | 1x40            |
| 12 | 68 K         | 12 | 80x25           |
| 13 | 2.7 MEG.     | 13 | 47 PF           |
| 14 | 560 K        | 14 | .0047           |
| 15 | 1.5 K        | 15 | .033            |
| 16 | 120K         | 16 | .001            |
| 17 | 10K          | 17 | .022            |
| 18 | 560          | 18 | 1x100 10%       |
| 19 | 1.2 M        | 19 | .01 20% 1000V   |
| 20 | 47           | 20 | .01 20% 1000V   |
| 21 | 6.8 K        | 21 | 2100x30         |
| 22 | 12 K         | 22 | 2300x50         |
| 23 | 50 K         |    |                 |
| 24 | 1K           | Q  | TRANSISTORS     |
| 25 | 2.5 K        | 1  | 2N3391A         |
| 26 | 2.2 K        | 2  | 2N3391A         |
| 27 | 75.5W,WW     | 3  | 2N3391A         |
| 28 | 56K,1/4W,10% | 4  | 2N3707          |
|    |              | 5  | 2N3053          |
| D  | DIODES       | T  | TRANSFORMERS    |
| 1  | IN914        | 1  | SPECIAL TSE20-1 |
| 2  | IN4002       | 2  | SPECIAL TSE20-2 |
| 3  | IN4002       |    |                 |
| 4  | IN2989A      |    |                 |

MODEL SE20 STEREO TRANSCRIPTION PREAMPLIFIER SCHEMATIC

