

# Westinghouse

Models HF104DP, HF105DP, HF106DP,  
Chassis V-2501-1

## AMPLIFIER CIRCUIT INFORMATION

### Input

Two input jacks, J100A and J100B, are provided. SW100 selects the input signal fed to the 12AU6 1st audio amplifier. The output from the phono pick-up is fed to J100B; other audio signals may be fed to J100A.

### 1st audio amplifier

To minimize hum, the first audio amplifier heater receives direct current, fed from the cathode circuit of the push-pull output stage. R101 is unbypassed to provide degeneration for improved fidelity.

### Equalizer

Package circuit Z101 contains the record equalization capacitors and resistors. Equalization is selected by SW101 to modify the amplifier response, adapting the response to the type of record being played. Equalization positions are as follows:

R1AA: Compensates for R1AA recording curve.

LP: Compensates for standard 33 1/3 RPM records.

EUR: In this position, Z101 is switched out of the circuit. European records usually require this setting.

78: Compensates for older 78 RPM records.

### Tone controls

Except for R106, the tone control fixed resistors and capacitors are contained within packaged circuit Z100. Tone control characteristics are as follows:

BASS: Provides up to 20 db boost at 40 cycles.

TREBLE: Provides up to 15 db boost at 15,000 cycles.

### Audio amplifier and phase inverter stage

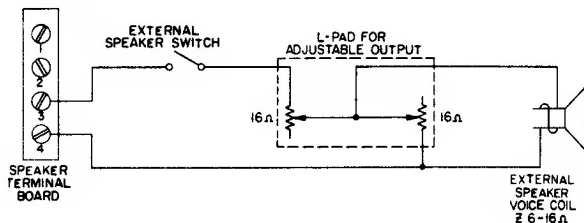
A 12AX7 is used as audio amplifier and phase inverter. Inverse feedback voltage is fed to the cathode of the audio amplifier (pin 3) to provide additional improvement in fidelity and stability. Grid drive to one 6L6 output tube is fed from the plate (pin 6); grid drive to the other 6L6 is fed from the junction of R111 and R112 in the cathode circuit of the phase inverter.

### Audio output stage

The 6L6 push-pull audio output tubes operate class AB<sub>1</sub>. R118 and R119 prevent oscillation (ringing). The 12AU6 heater serves as part of the common cathode resistor for the 6L6 tubes. (This circuit arrangement provides DC for the 12AU6 heater).

### Output circuit

Normal DC resistance across the primary and secondary of T100 is shown in figure 1. Output impedance, between terminals 2 and 4 is 12.8 ohms; impedance between terminals 3 and 4 is 6.4 ohms. C108 is the cross-over capacitor which passes the high frequencies to the paralleled high frequency speakers.



EXTERNAL SPEAKER CONNECTION,  
WITH SWITCH AND L PAD ATTENUATOR

