

NOTE:

This is the
“SOUND SYSTEM” Chapter
of the
Wurlitzer Model 1100
Jukebox Manual

*Pages 33, 34 & 35
were on “Pull-Out” (Folded) sheets*

*These pages are available as
SEPARATE DOWNLOADS*

Sound System

The new Wurlitzer Improved Sound System consists of a radionic pick-up with its accompanying pre-amplifier, working through a key type volume control, an amplifier and tone control, and a dust proof speaker (see figure 25). In designing these units, the problems of the operator have been kept in mind. All types of auxiliary speakers can now be properly matched through $3\frac{1}{2}$ ohm, 8 ohm, or 500 ohm lines. No additional equipment is necessary to connect and match properly the auxiliary speakers. Additional kits are available which make it possible to use the same controls which are used in the sound system in a remote control station, thus greatly reducing the cost of remote control installations.

PICK-UP

The pick-up of the phonograph provides a means of changing the physical variations of the music groove of the record into electrical variations in the high frequency signal generated by the oscillator section of the pre-amplifier. This modulated signal is received by the receiving section of the pre-amplifier, rectified and passed on through the volume control to the sound amplifier and its tone control network (see figure 27).

The amplified signal is impressed upon the voice coil of the speaker which moves in its magnetic field in proportion to the current applied, and thus produces sound waves.

VOLUME CONTROL

The purpose of the volume control unit is to provide an acoustically compensated tone balance for all available levels of output. The volume control unit consists of tuned circuits, a dual section variable resistor unit and other tone balancing components (see figure 27).

AMPLIFIER

The output of the volume control unit is impressed upon the voltage amplifier section of the Model 506 Amplifier. The tube complement of this amplifier is one 6J5 voltage amplifier, one 6SJ7 voltage amplifier, one 6SN7, two 6L6 output tubes in push-pull and one 5U4G rectifier. A 2 ampere fuse at the A. C. input protects the amplifier and pre-amplifier. The amplifier signal output is 20 watts.

The treble and base tone circuits are included in the voltage amplifier circuits. Phase-inversion provides push-pull amplification for the output stage and inverse feed-back is incorporated to facilitate impedance matching over the audio range of frequencies.

A relay in the 6L6 cathode circuit permits quick heating of the amplifier tubes. When the amplifier is first turned on, 9.8 volts is applied to the heater circuits of the tubes to insure emission before the turntable reaches its playing position. When the 6L6 tubes are sufficiently heated to draw current the relay becomes energized and opens the 9.8 volt circuit and switches the heater circuit to its normal 6.3 volt supply.

Two one pin receptacles are provided for the muting switch connection and the Model 227 Auxiliary Amplifier connection respectively.

The Model 506 Amplifier output panel is designed to provide full use of amplifier output. No signal is wasted in fader controls. Matched fading is provided between the phonograph speaker and the auxiliary speaker system by the four position fader control on the back of the amplifier.

The bottom of the amplifier, is securely fastened to the amplifier shelf and the mounting is constructed to provide a one latch fastening for the amplifier.

SPEAKER

The phonograph speaker is of the electro dynamic type with 8 ohm voice coil and 5200 ohm field. The voice coil is dust proof. Auxiliary speakers may be installed and accurately balanced in accordance with the instructions in the installation section of this Handbook.

AUXILIARY AMPLIFIER, MODEL 227

The Model 227 Auxiliary Amplifier is available as an addition to the sound system to provide good sound distribution over a wide area, through a number of auxiliary speakers, operated at a pleasing volume,

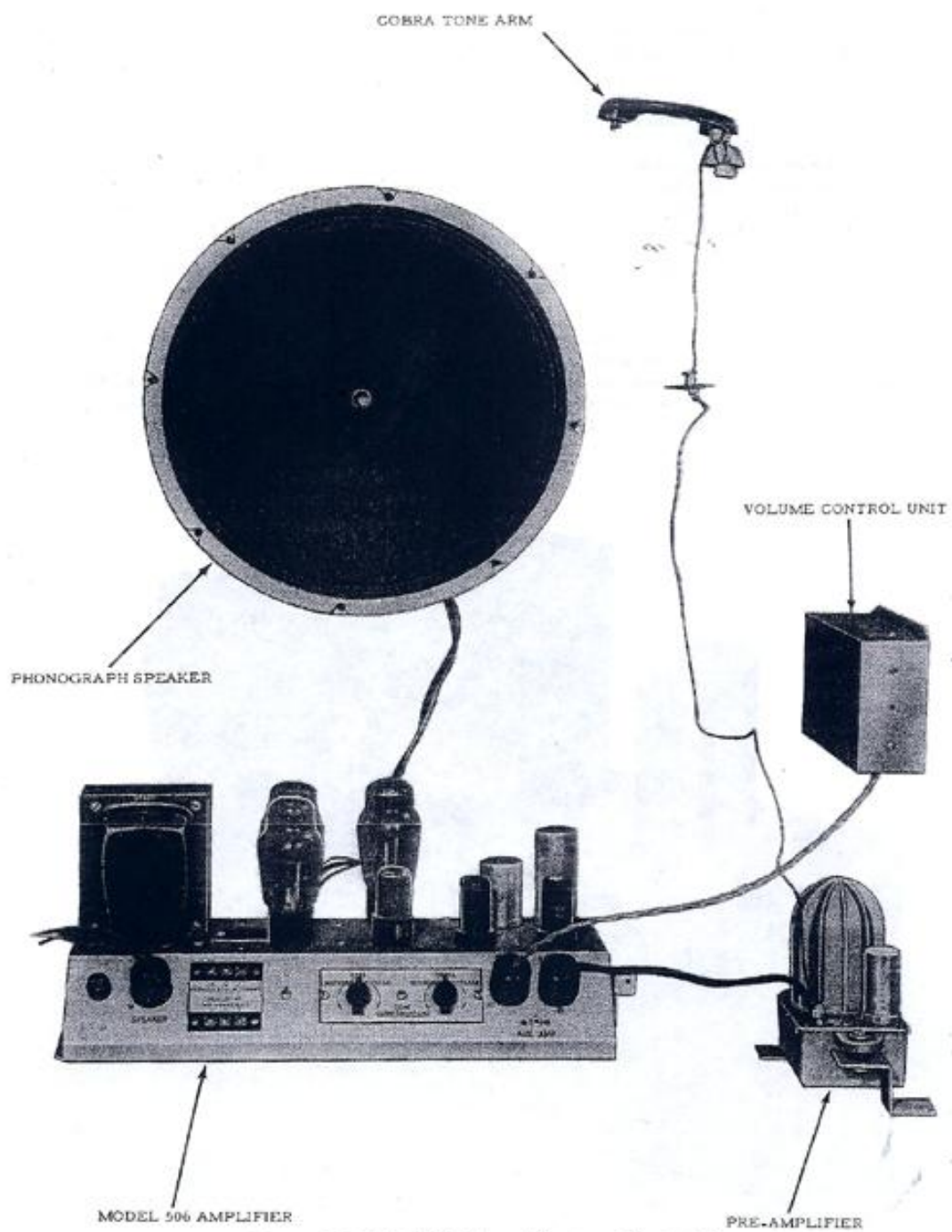


Figure 25-Model 1100 Sound System Pictorial

without impairing the tonal qualities or the available sound level of the phonograph. Provisions are made on the floor of the Model 1100 Phonograph to install this auxiliary amplifier. The auxiliary amplifier is individually protected with a 2 ampere fuse. It has an 8 prong receptacle for its own volume control and a single pin receptacle for signal taken from the tone controlled section of the Model 506 voltage amplifier circuit. In addition, the tone control is included to permit a variation in the tone of the auxiliary amplifier without change in the phonograph tone.

The tube complement of this amplifier is one 6SJ7 voltage amplifier, one 6SN7, two 6L6 output tubes in push-pull, and one 5U4G rectifier (see figure 26). Phase inversion provides the push-pull amplification for the

output stage. Inverse feed-back is incorporated to facilitate impedance matching over the audio range of frequencies.

A relay in the 6L6 cathode circuit permits quick heating of the amplifier tubes. When the amplifier is turned on, 9.8 volts is applied to the heater circuits to insure emission before the turntable reaches its playing position. When the 6L6 tubes are sufficiently heated to draw current the relay becomes energized and opens the 9.8 volt circuit and switches the heater circuit to its normal 6.3 volt supply.

The Model 227 output panel is designed to provide full use of the amplifier output. The 8 taps on the secondary winding insures a wide range of impedances to which many combinations of speakers may be matched.

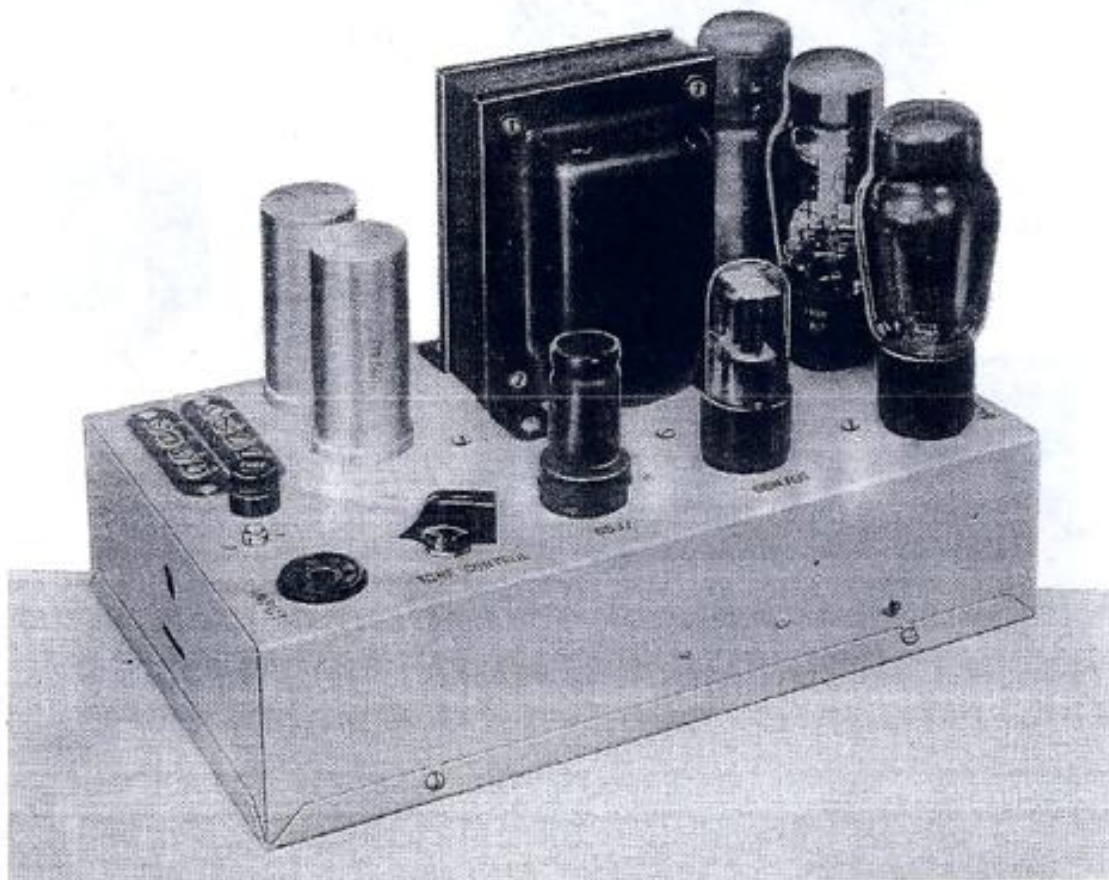


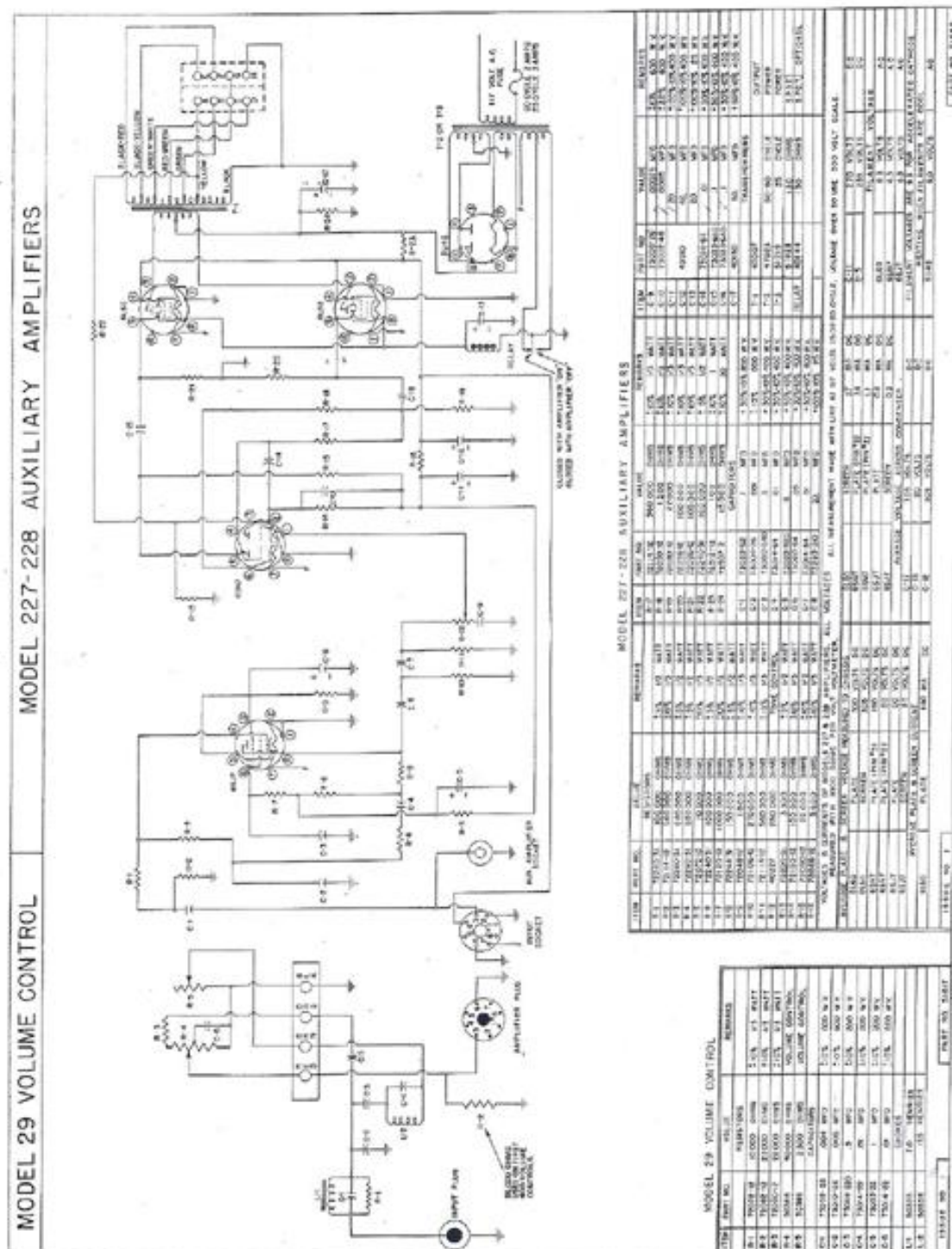
Figure 26-Model 227 Auxiliary Amplifier

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Figure 27.-Model 1100 Sound System Schematic Wiring Diagrams (Early Models)



**Figure 28-Model 227 Auxiliary Amplifier And Volume Control
Schematic Wiring Diagram**