

# PS-900 SPECIFICATIONS

## POWER REQUIREMENTS

110-120 VAC/220 VAC, 4 amps/2 amps, 50/60 Hz.

## OUTPUT

Pin	Trans. Volt	Rec. Volt	Trans. Cur.	Rec. Cur.
1	-111 VDC	-122 VDC	0.4 ma	4.5 ma
2	AC switch			
3	117 VAC	117 VAC	120 ma	120 ma
4	117 VAC	117 VAC	120 ma	120 ma
5	12.2 VDC	13.6 VDC	510 ma	400 ma
6	11.6 VAC	11.7 VAC	3.0 amp	3.1 amp
7	123 VDC	132 VDC	37 ma	32 ma
8	11.6 VAC	11.7 VAC	3.0 amp	3.1 amp
9	ground			
10	270 VDC	323 VDC	54 ma	8.2 ma
11	750 VDC	850 VDC	335 ma	0.4 ma
12	-15.5 VDC	-16.5 VDC	17.5 ma	19.0 ma

**NOTE:** All values are measured at the power terminals of the TS-900 delivering 110 watts output in the CW mode. Receive values are measured with the HEATER switch turned off.

## SPEAKER

Size: 4.75"

Impedance: 8 ohms.

Frequency Response: 200 to 5000 Hz.

Power: 2 watts input.

## SIZE

5.88" wide x 5.5" high x 13.38" deep (excluding feet).

## WEIGHT

16.5 lbs. (shipping weight 25 lbs.).

# SECTION 1. INTRODUCTION

The PS-900 AC power supply provides all of the operating voltages for the Kenwood TS-900 transceiver. It operates from a 120 VAC or a 220 VAC, 50/60 Hz power source capable of providing 410 watts of power. The operating voltages are connected to the TS-900 by a 12-conductor power cord terminated by a 12-pin female cable connector. This 12-pin cable connector mates with a male power receptacle located on the transceiver. Be sure to check that the back panel voltage selector switch is in the proper position.

The PS-900 is equipped with a cabinet which matches the TS-900 for table mounting, however, AC switching is controlled by the transceiver so that the power supply can be remotely mounted. The power supply is turned on when the TS-900 POWER switch is pushed on. The PS-900 is also equipped with a 4.75" speaker which connects to the TS-900 through the SPEAKER jacks of both units.

The PS-900's design features high voltage silicon diodes and a cut-core transformer resulting in high reliability at a minimum weight.

# SECTION 2. INSTALLATION

## 2.1 UNPACKING

Remove the PS-900 from its shipping box and packing material and examine it for visible damage. If the equipment has been damaged in shipment, save the box and packing and notify the transportation company immediately. It is a good idea to save the box in any case because it is useful for shipping or moving the equipment.

The following accessories should be included with the power supply:

- |                               |                 |
|-------------------------------|-----------------|
| 1 Operating Manual            | 2 Plastic Feet  |
| 1 Interconnecting Power Cable | 1 Fuse (6 amps) |
| 1 Speaker Cord                | 1 Fuse (8 amps) |

## 2.2 OPERATING LOCATION

The PS-900 should be kept free from extremes of heat and humidity. Choose an operating location that is dry and cool, and avoid operating the power supply in direct sunlight. Allow an adequate clearance at the side and back of the PS-900 to allow an airflow to keep the components cool.

## 2.3 CABLING (See Figure 1)

### GROUND

Connect a wire from a good earth ground to the GND lug on the back of the PS-900. If a good earth ground is not available and the PS-900 is operated from an approved three-wire electrical system in the United States, the third or neutral wire normally supply an adequate ground.

## POWER CABLE

Connect the interconnecting power cord between the PS-900 and the TS-900.

## SPEAKER

Connect the interconnecting speaker cord between the PS-900 and the TS-900.

## POWER CORD

Make sure that the TS-900's POWER switch is turned to OFF. Plug the power cord into the receptacle at the operating position.

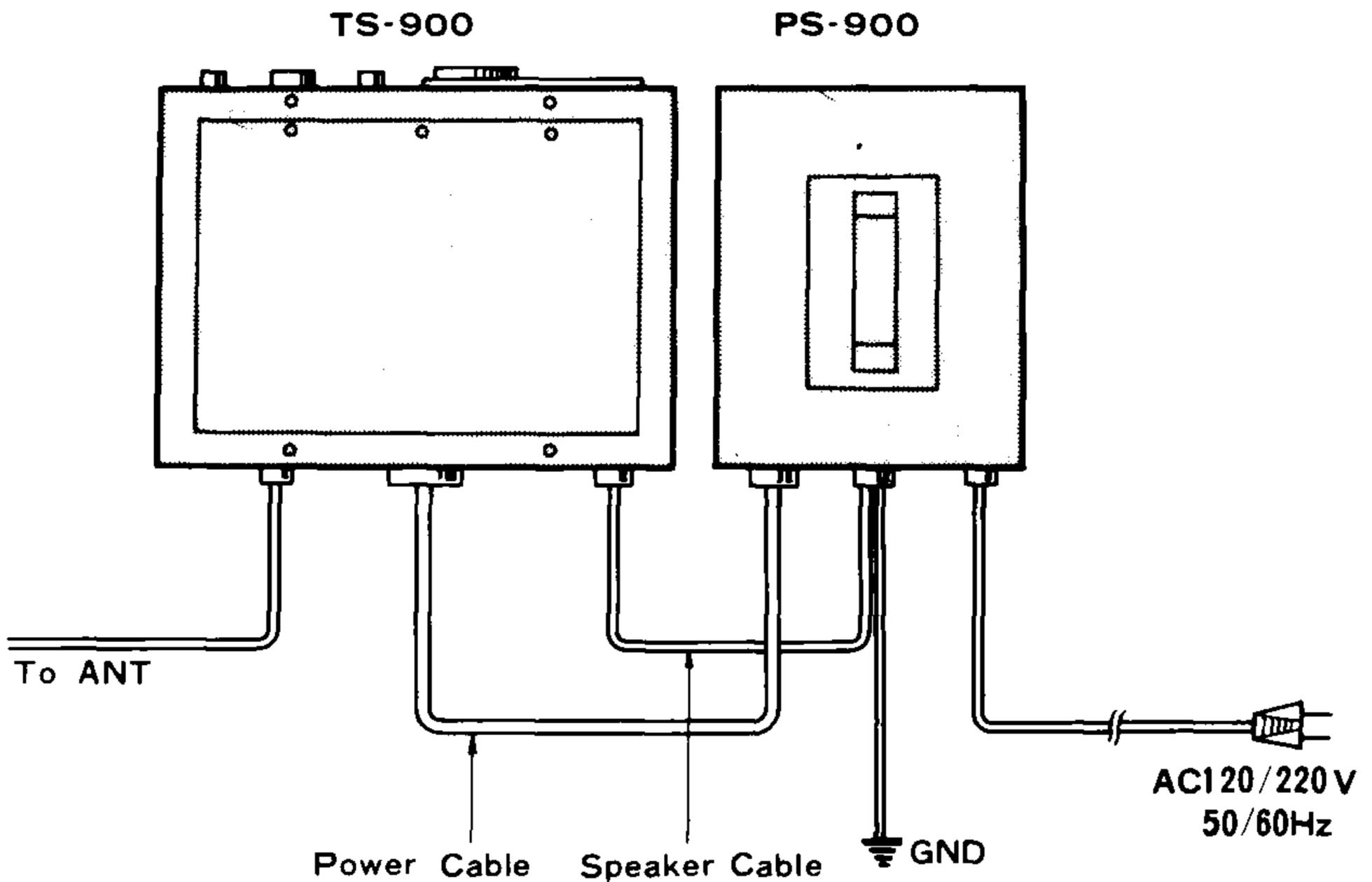


FIGURE 1. Cabling Diagram

# SECTION 3. OPERATING CONTROLS

## 3.1 FRONT PANEL CONTROLS (See Figure 2)

### PILOT LIGHT (1 on Figure 2)

This neon bulb is illuminated when the power supply is turned on.

## 3.2 REAR PANEL CONTROLS (See Figure 2)

### POWER SUPPLY CONNECTOR (2 on Figure 2)

This 12-pin connector supplies all of the operating voltages and control functions, through the power supply cord, to the TS-900. The speaker is not connected through this connector.

### SPEAKER JACK (3 on Figure 2)

This jack connects the PS-900's speaker to the SPEAKER jack of the TS-900 to monitor the AF output of the TS-900's receiver. An appropriate cord is supplied with the power supply.

### GND LUG (4 on Figure 2)

Use this lug to ground the chassis of the PS-900 to prevent danger of shock.

### VOLTAGE SELECTOR SWITCH (5 on Figure 2)

This two-position slide switch should be set to 120V or 220V depending on the voltage at the operating position. The switch selects the correct tap of the power transformer. The power supply can be damaged if the equipment is operated with the switch in the wrong position. See Section 4.2 for instructions on changing the switch.

## FUSE (6 on Figure 2)

The fuse is a 3 AG, 8 amp (6 amp for 220 VAC operation) fuse. Use of any higher amperage fuse can cause extensive power supply damage.

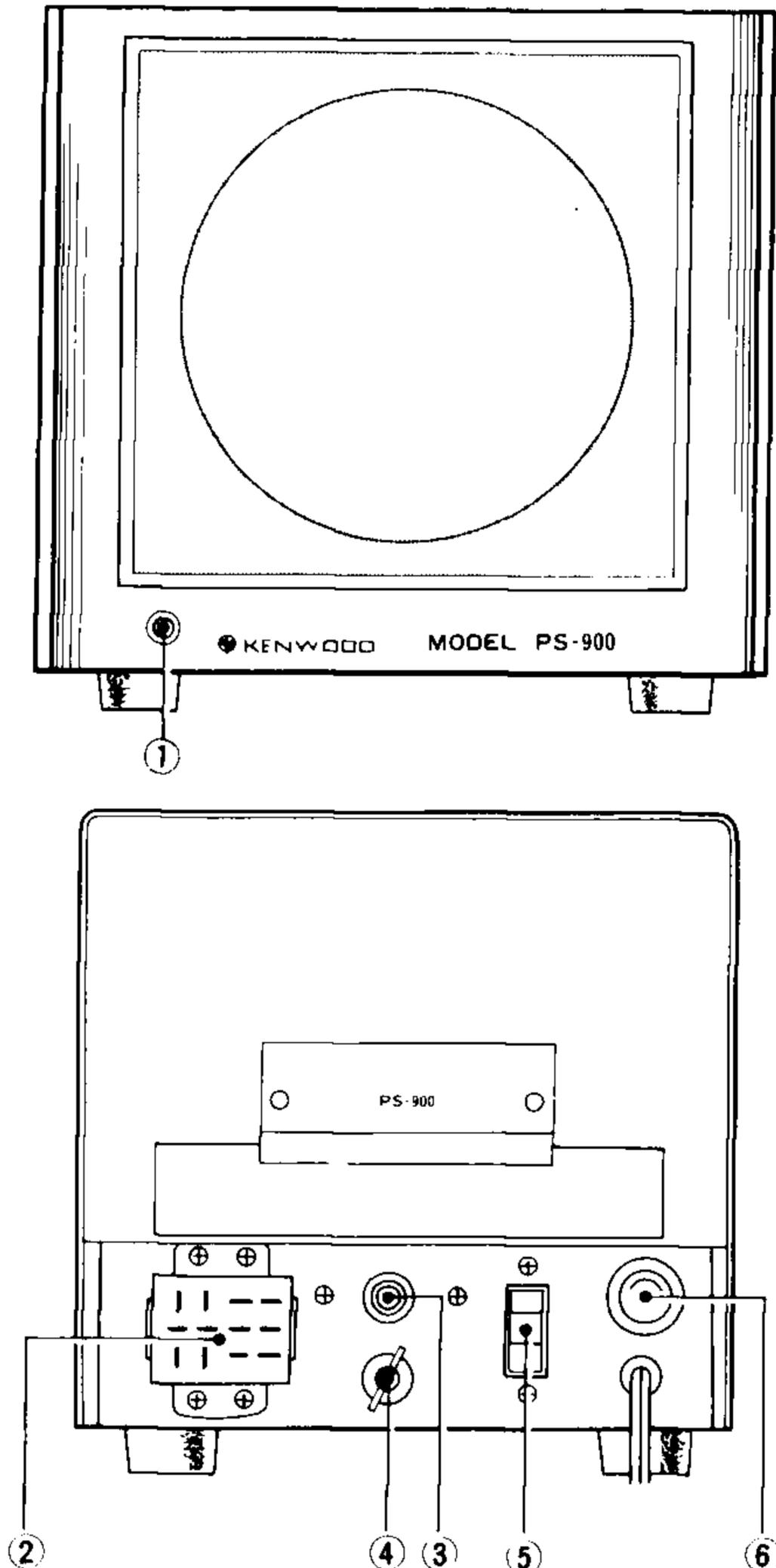


FIGURE 2. PS-900 Operating Controls

# SECTION 4. OPERATION

## 4.1 GENERAL

### CAUTION

*Slide the VOLTAGE SELECTOR switch to the proper position before turning on the power supply. Failure to place the switch to the proper voltage can cause damage to the power supply.*

Set the voltage selector switch for the proper line voltage. Turn the PS-900 on by pushing the POWER switch of the TS-900 on. The pilot light should glow, indicating the transceiver and power supply are turned on. Make sure that there is adequate ventilation to the power supply.

## 4.2 CHANGING THE VOLTAGE SELECTOR SWITCH

The switch is factory set at 220V for operation at a line voltage is 220 VAC. If the power supply is used with a line voltage between 110 and 120 VAC, remove the stopper and set the switch to the 120V position. Insert the stopper again to lock the switch into place. Replace the 6 amp (220 VAC) fuse with a 8 amp (120 VAC) fuse.

# SECTION 5. CIRCUIT DESCRIPTION

## 5.1 AC LINE

There is a dual pi filter installed in the AC line to prevent radiation of radio waves from the AC power line.

## 5.2 800 V LINE (Pin 11)

The 800 VDC high voltage is obtained through a voltage doubling rectifier. Two silicon diodes are used in series with each rectifier element to obtain the necessary reverse voltage rating. A large resistance and an electrolytic capacitor are connected in parallel with each silicon diode to prevent the diodes from being overloaded by unbalanced voltages.

## 5.3 280V LINE (Pin 10)

The 13.8V line is rectified by a silicon diode bridge and is filtered by C18, C19, and CH1.

## 5.4 125 V LINE (Pin 7)

The 125V line is the bias supply to the screen grid of the two 6LQ6 final power tubes.

## 5.5 13.8V LINE (Pin 5)

The 13.8V line is rectified by a silicon diode bridge and is filtered by C18, C19, and CH1.

## **5.6 13.5 V LINE (Pins 6 and 8)**

This line is the AC supply for the tube filaments and the pilot lights.

## **5.7 -17 V LINE (Pin 12)**

The -17 volts is rectified from the 13.5 VAC line. The voltage is used in the control circuit.

## **5.8 -100 V LINE (Pin 1)**

The -100V line supplies -C (bias) voltage to the transceiver. The line is half-wave rectified by silicon diode D7.

## **5.9 FAN (Pins 3 and 4)**

This line provides 100 VAC to the cooling fan in the TS-900. The fan voltage is 100 VAC even if the supply is operated from 220 VAC.

## **5.10 SPEAKER**

The internal 8 ohm speaker is connected to the TS-900. If the supply is mounted remotely from the transceiver, a separate external 8 ohm speaker can be used.

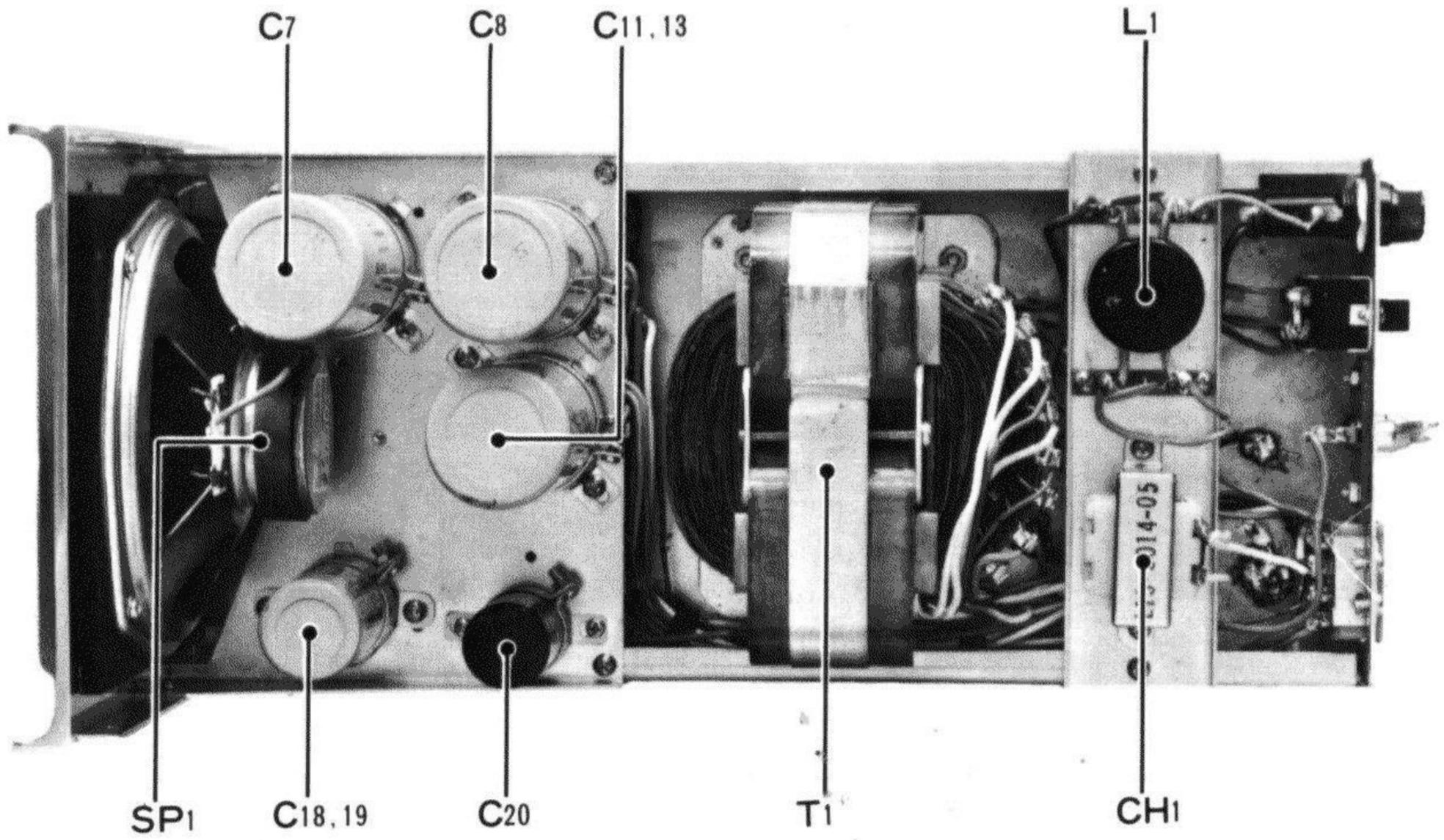


FIGURE 3. Top Chassis Parts Diagram.

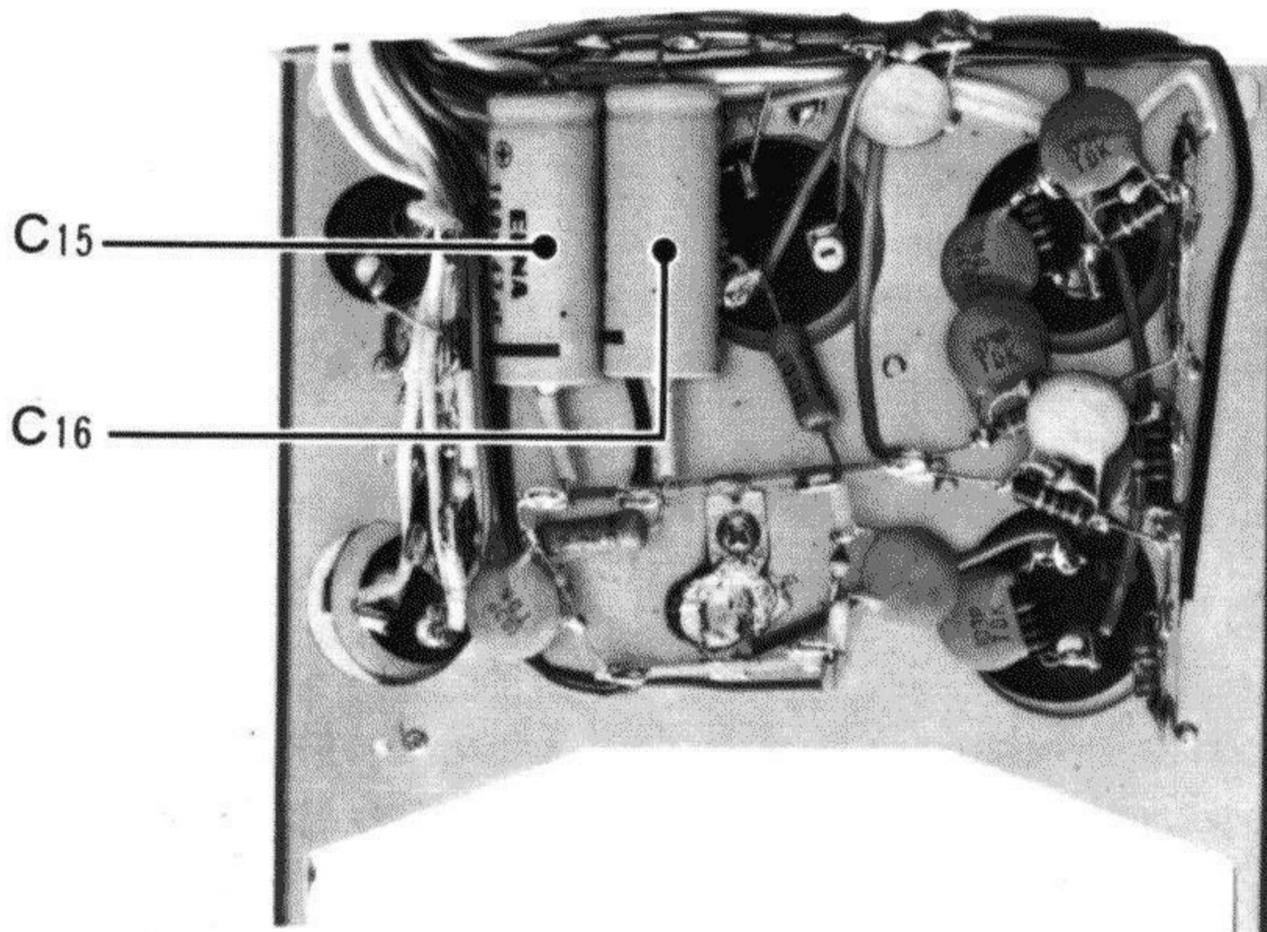


FIGURE 4. Bottom Chassis Parts Diagram.

# SECTION 6. MAINTENANCE

## 6.1 GENERAL

The voltages from the power supply are not adjustable. To remove the case for service, remove the two screws from the right and left side of the case. Also remove the four screws holding the case to the chassis. Then slide the case from the power supply. See Figures 3 and 4 for the location of parts in the power supply.

## 6.2 FUSE

When the fuse blows, there is some cause. Be sure to find the cause before attempting operation. Use a 6 amp fuse for 220 VAC operation, and an 8 amp fuse for 120 VAC operation. Under no circumstances use a higher amperage fuse than those specified. Extensive damage can be caused by an improper fuse. Also the warranty can be voided if an improper fuse is used.

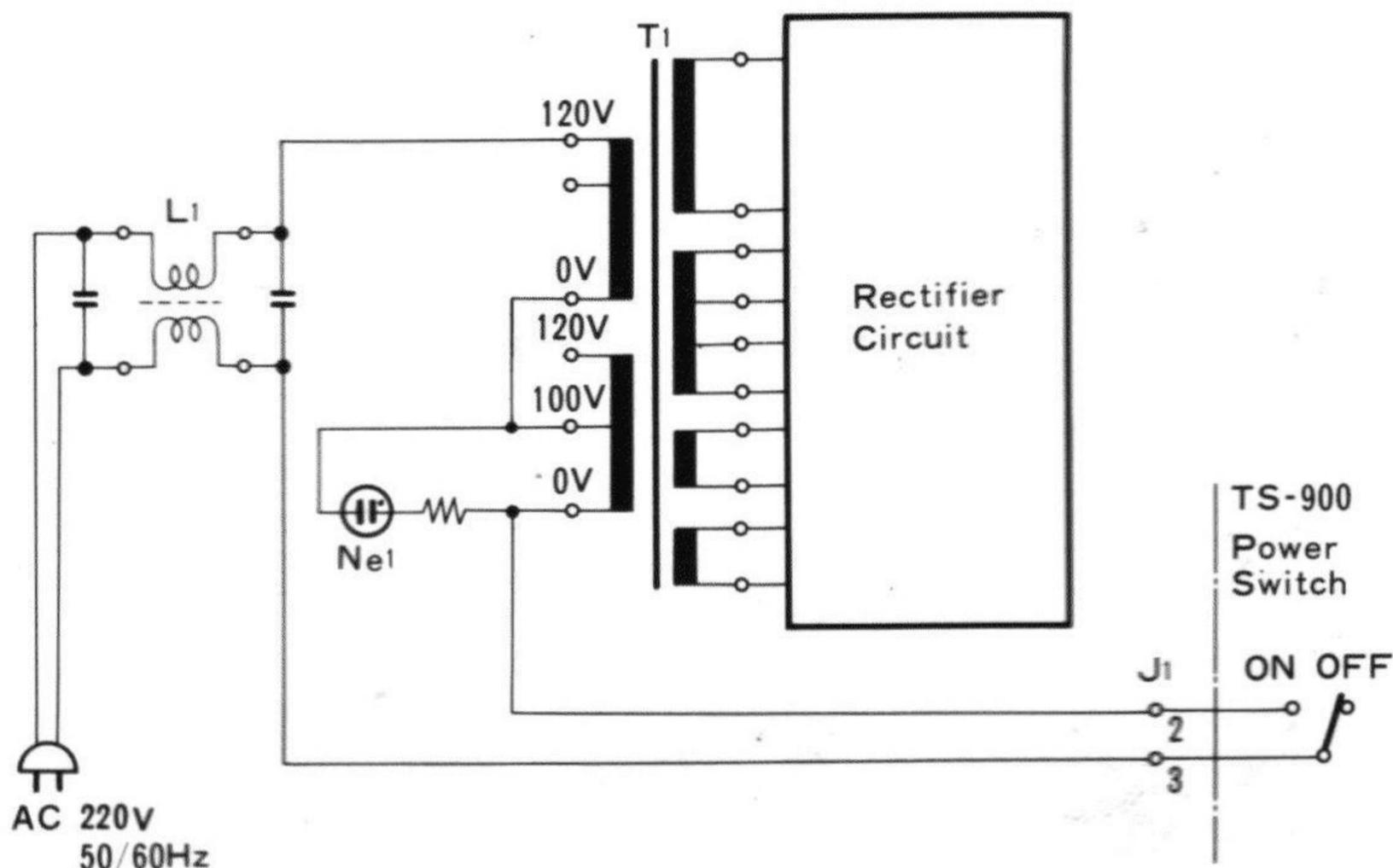


FIGURE 5. Block Diagram (on 220 VAC operation)

