 **KENWOOD**

# POWER SUPPLY & SPEAKER UNIT

## Model PS-515

**OPERATING MANUAL**

# FEATURES

1. Designed especially for the TS-515 transceiver.
2. Built-in communication speaker.
3. Provided with a power supply cable for connection with the transceiver.
4. Power on-off switch is attached to the transceiver, providing a great convenience for the operator. When no space is available, the PS-515 can be placed under the table on which the transceiver is installed.
5. Silicon rectifier for a high voltage and high stable voltage regulator.
6. Special design matches the TS-515 transceiver very well.

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# SPECIFICATIONS

## OUTPUT

Terminal	Voltage	Current	
900 V	840 V (940 V)	230 mA ( 8mA)	DC
300 V	290 V (300 V)	20mA ( 8mA)	DC
190 V	200 V (220 V)	15mA ( 2mA)	DC
150 V	150 V (150 V)	45mA (85mA)	DC
—C	—88 V (—88 V)	13mA (15mA)	DC
12.6 V (a)	13.7 V	2.5 A	AC
12.6 V (b)	14.2 V	1.5 A	AC

## (NOTES)

The values are measured at the connector of the TS-515 when the TS-515 is in transmit mode with 90 watts output, in CW mode. However, the values in ( ) are measured when the TS-515 is in receive mode in CW mode.

## SPEAKER SECTION

Diameter	3-17/32" x 5-1/2" (Ellipsoidal)
Impedance	8 ohms
Frequency response	150 ~ 5,000 Hz
Rated input	1.5 watts (max.)

## POWER REQUIREMENT

AC 110 ~ 120/220 ~ 240 V, 50/60 Hz  
350 watts (max.)

## DIMENSIONS

7-7/8" wide x 6-11/16" high x 13-6/8" deep  
(Excluding feet)

## WEIGHT

26.4 lbs.

# SECTION 1. CONTROLS

## 1.1 FRONT PANEL

① Indicator

The neon bulb lights up when power is on.

## 1.2 REAR PANEL

② POWER SUPPLY connector

This connector provides the power supply connection and speaker connection with the TS-515.

③ FAN socket

This socket provides a power supply for the fan of the TS-515.

④ GND lug

The ground lug is used for an adequate ground.

⑤ V ADJ control

The voltage of 150 v line is controlled slightly by this control (VR 1).

⑥ AC line cord

⑦ Fuse (6A or 8A)

⑧ Voltage selector

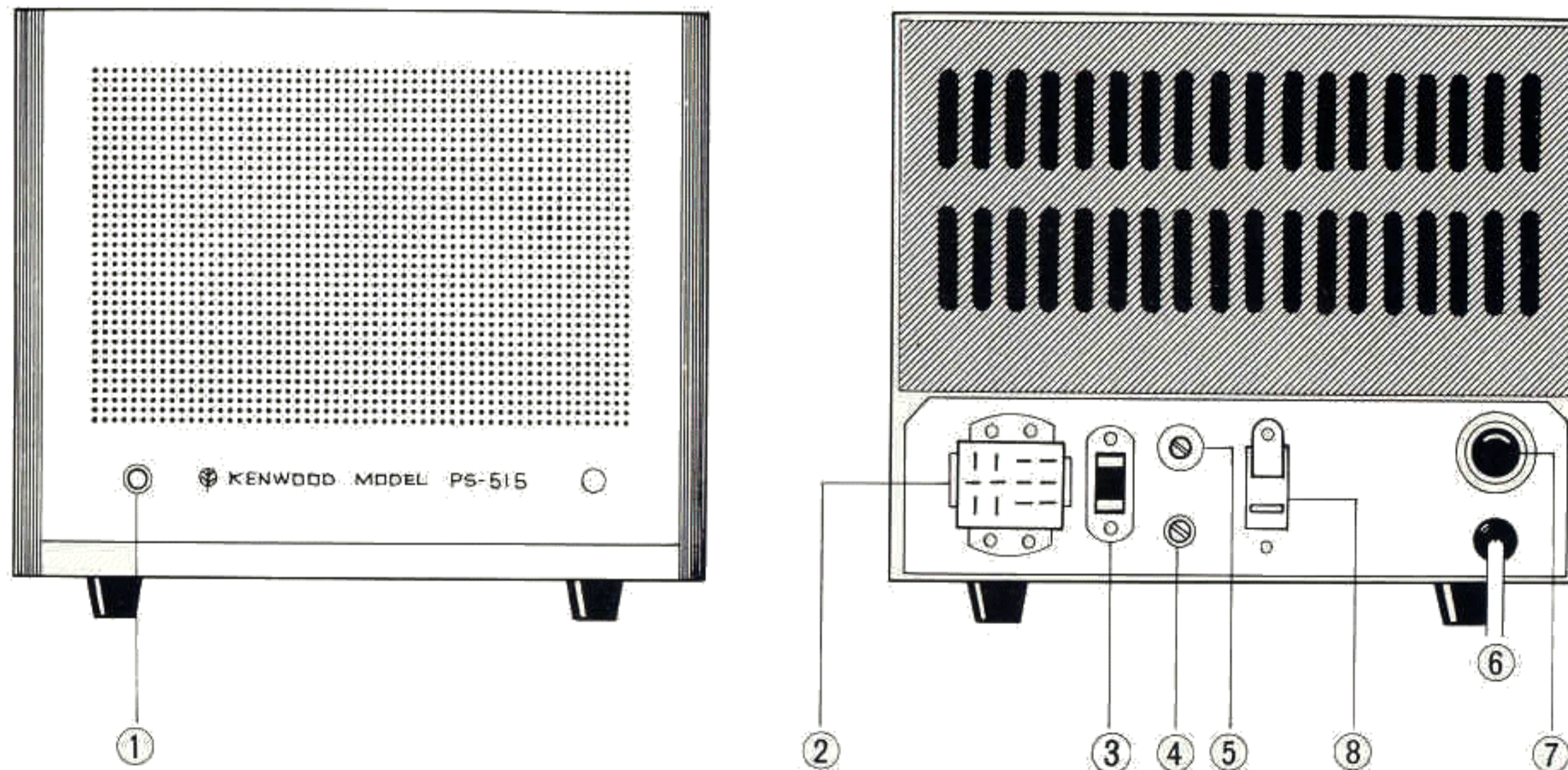


Fig. 1 Front panel & Rear panel

# SECTION 2. OPERATION

## 2.1 UNPACKING

Carefully unpack the PS-515 and check that the following accessories are included.

- Interconnecting power cable . . . . . 1
- Plastic feet . . . . . 2
- Fuse (6A) . . . . . 1
- Fuse (8A) . . . . . 1

## 2.2 VOLTAGE SELECTOR & FUSE

Voltage selector is pre-set for 220 ~ 240 V operation.  
If the set is to be used in the 110 ~ 120 V area, observe the following procedures:  
Set the voltage selector to the 110 ~ 120 V position after removing the

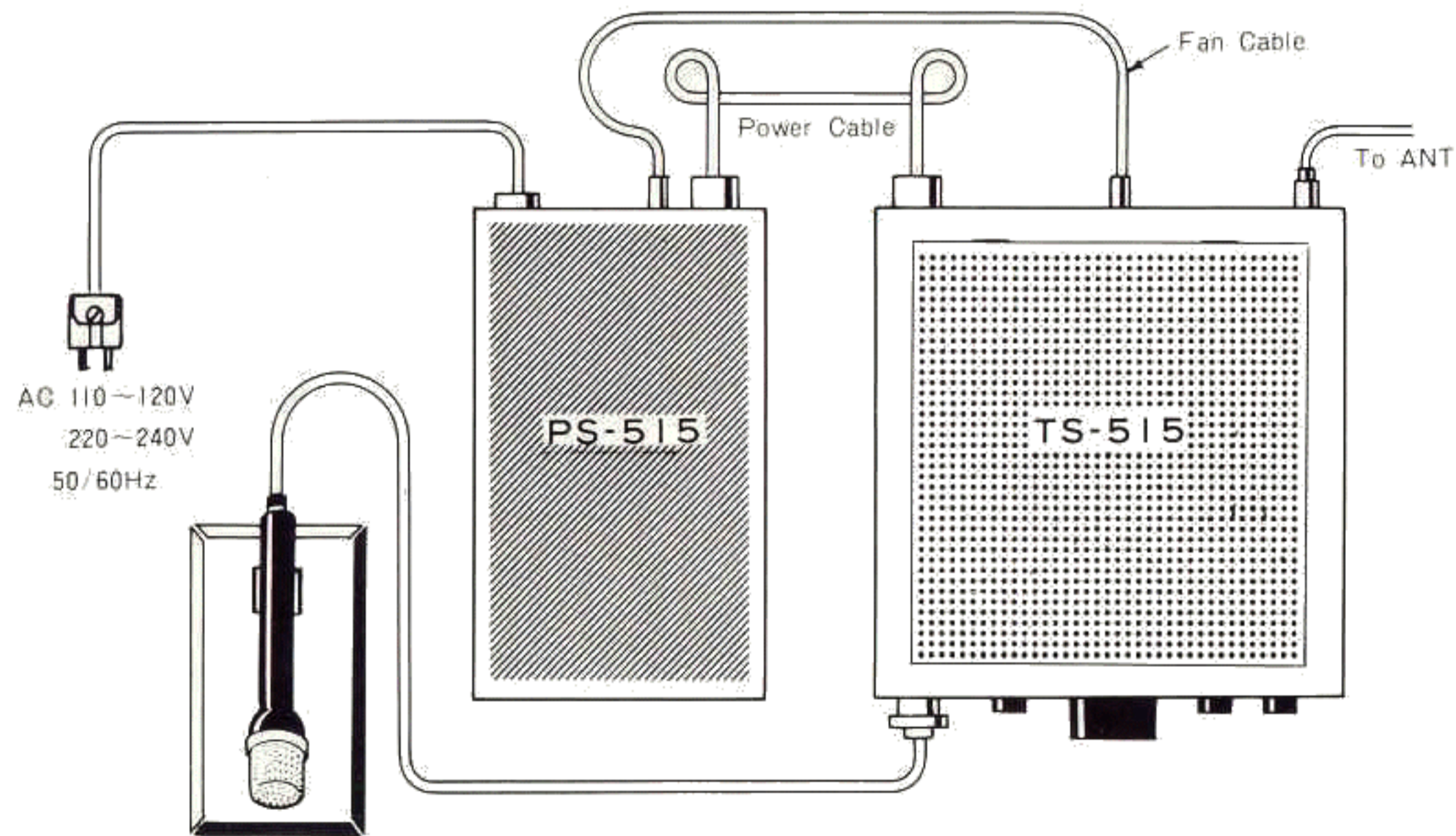


Fig. 2 Connections to TS-515

# SECTION 3. CIRCUIT DESCRIPTION

stopper.

Fix the voltage selector by the stopper lest it should be moved to the 220 ~ 240 V position.

Replace the fuse (6A) with the accessory 8A fuse.

## 2.3 LOCATION

Select a proper operation location. It should be dry and free from direct sunlight.

## 2.4 CONNECTIONS TO TS-515

Connect the interconnecting fan and power cable between the transceiver and the power supply (See Fig. 2).

## 2.5 OPERATION

Before operating the PS-515, be sure that the voltage selector is set to the proper position.

If not, set the voltage selector to the proper position corresponding to your AC line voltage.

The PS-515 power supply is not provided with a power on-off switch since it can be operated from the power switch of the TS-515.

## AC LINE

A  $\pi$  type filter installed in this AC line is for preventing unwanted radiation of radio waves from the AC power line.

## 900 V LINE

The 900 V high voltage is obtained from a voltage-doubling rectifier. Two silicon diodes are used in series with each rectifier element to obtain the required withstand voltage. A large resistance is also connected in parallel with each silicon diode and electrolytic capacitor to prevent them from being overloaded by unbalanced voltages.

## 300 V LINE

For the 300 V line, a silicon diode bridge rectifier and choke input circuits are employed for extra voltage regulation and ripple-free operation.

## 190 V LINE

190 V is obtained through a resistor connected in series with the 300 V line.

## 150 V LINE

The 150 V line is stabilized by a 6BM8 tube.

Principle of operation: When the 150 V line experiences a slight voltage drop due to variation in the load, it reduces the grid voltage of the triode section of the 6BM8 tube. Since the cathode is clamped at a constant voltage by the neon bulb, the plate current decreases and hence the voltage drop across R201 becomes less, increasing the plate voltage.

## SECTION 4. MAINTENANCE

Therefore, the grid bias of the pentode section of the 6BM8 decreases to compensate for the voltage drop in the 150 V line, which thus restores its normal constant value. The output voltage can be controlled by adjusting the semi-fixed resistor (VR 1).

### BIAS (-C) LINE

The bias circuit is a half-wave rectifier built around a silicon diode.

### 12.6 V LINE

There are two 12.6 V windings so that separate heater sources can serve the pair of final amplifier tubes (S2001) and other vacuum tubes.

### 6.3 V LINE

The 6.3 V powers the heater of the 6BM8. This winding is maintained at a +150 V level to provide against insulation breakdown between the cathode and heater.

### SPEAKER TERMINAL

The speaker terminal shares the same power supply connector with other power outputs. This power supply connector also constitutes the transformer primary winding circuit to enable the power supply to be switched from the TS-515 transceiver.

### 4.1 REMOVING THE CHASSIS FROM THE CASE

The chassis can be removed upward after unscrewing 2 black screws from the top and 4 each from both the right and left sides. It is unnecessary to remove bottom screws since the bottom plate comes off along with the chassis.

### 4.2 FUSE (6A or 8A)

If the fuse blown, be sure to check for the cause before replacement. Use the 6A fuse or the 8A fuse for 220 ~ 240 V operation or 110 ~ 120 V operation respectively.

### 4.3 150 V LINE

The stabilized 150 V line has been factory-adjusted. However, if it becomes out of adjustment for some reason, readjust the semi-fixed resistor (VR 1) so that 150 V is obtained with the TS-515 in receive mode.





Manufactured by TRIO ELECTRONICS, INC., Tokyo, Japan