

HALLICRAFTERS

150 SERIES

POWER SUPPLIES

03/15/2021

WDØGOF

HALICRAFTERS
150 SERIES
POWER SUPPLIES

The 150 series power supplies consists of the PS-150-120 and the PS-150-12.

The -120 (AC) supply was specifically designed for use with the SR-150, SR-160 and the HT-44. For special order and European markets PS-150's were produced with 117/234vac transformers. "Rumor has it" these units were shipped with an errata sheet to cover the differences. I have never seen one and don't know if this is fact or fiction.

The -12 (DC) supply was intended primarily for the SR-150 and SR-160 mobile operation. The HT-44 can also be powered by the PS-150-12 in field day or communications trailer environments.

Both of the supplies provide; High voltage of 575vdc at 200ma, B+ of 250vdc at 175ma, adjustable bias of -80 to -125vdc at 6.5ma and 12.6vac at 4.6ma.

When using the PS-150-12 supply be cautious of where it is located. During operation it emits a 6000 to 13000Hz tone that can be annoying. Typically, the cable is 20 feet long to allow distance between it and the rig.

When restoring these power supplies, you should seek out electrolytic capacitors with an ESR of 5 ohms or less. I personally shoot for 0.1 ohms or less. The cost runs 2 to 3 times the cost of caps with 5 ohms or more. But the results of less hum in the receiver and transmitter are well worth the investment.

GUIDE TO INSTALLATION AND SERVICE

AC POWER SUPPLY MODEL PS-150-120

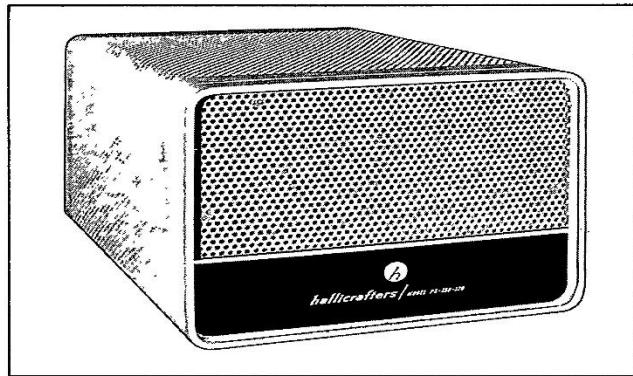


Figure 14. Hallicrafters Model PS-150-120 AC Power Supply.

9-1. DESCRIPTION.

Hallicrafters, Model PS-150-120 Power Supply is a complete, self-contained power unit designed to permit Hallicrafters' Model SR-160 Transceiver to be operated from a nominal 117-volt AC source. This power supply, through a 12-pin power plug and cable at the rear, will furnish all the supply voltages necessary for optimum performance of the SR-160.

Hallicrafters' Model PS-150-120 operates from a 105-volt to 125-volt, 50/60 cycle, AC source. The power supply also contains a 3.2-ohm permanent-magnet type speaker which connects to the SR-160 through the 12-pin power plug and cable.

WARNING

LETHAL HIGH VOLTAGE IS PRESENT WITHIN THIS EQUIPMENT. BE CAREFUL WHEN INSTALLING THE UNIT, WHEN MAKING BIAS ADJUSTMENTS, AND WHEN PERFORMING CHECKS UNDER THE CHASSIS.

9-2. BIAS ADJUSTMENT.

After connecting the power supply to the SR-160 and to the proper power source, the transmitter bias must be adjusted to achieve optimum performance of the transceiver.

1. Connect a voltmeter to the tip jacks at the top rear of the power supply chassis. (Connect the positive lead from the meter to the red jack.)

2. Turn the Model SR-160 on: OPERATION switch to SSB.
3. With no signal applied to the transmitter and the microphone button depressed, adjust the BIAS ADJ potentiometer, R206 on the rear of the power supply chassis, for 0.6 volt on the meter.
4. Disconnect the meter after turning the equipment off.

This adjustment is not necessary each time the SR-160 is used; however, it should be checked periodically and whenever the transmitter final amplifier tubes are replaced.

9-3. CHASSIS REMOVAL.

To remove the PS-150-120 chassis from its cabinet, remove the six hex-head screws on the bottom (four are in the feet and two are at the center front and rear) and disconnect the speaker leads on the top rear of the chassis. The chassis will slide out the rear of the cabinet.

REPAIR PARTS LIST

Schematic Symbol	Description	Hallicrafters Part Number
C201,202	Capacitor, 0.01 μ F, 1400V, Ceramic Disc	047-200752
C203	Capacitor, 0.001 μ F, 3000V, Ceramic Disc	047-100397
C204A&B	Capacitor, 2 x 30 μ F, 350V, Electrolytic	045-000902
C205,206	Capacitor, 80 μ F, 450V, Electrolytic	045-000369
C207,208	Capacitor, 20 μ F, 250V, Electrolytic	045-000903
CR201,202, 203,204	Diode, Silicon, Type 1N3487	027-000314
CR205	Diode, 1N3194	019-002769
F201	Fuse, 3 Amperes, 125 Volts, 3AG, (Slow Blow)	039-100390
J201	Connector, Power (12-pin)	010-002613
L201	Choke, Filter	056-000595
L202	Choke, Filter	056-000585
L203	Choke, Filter	056-000501
R201,202	Resistor, 15K Ohms, 10%, 10 watts, Wire Wound	445-032153
R203	Resistor, 100 Ohms, 10%, 1/2 watt, Carbon	451-252101
R204	Resistor, 4700 Ohms, 10%, 2 watts, Carbon	451-652472
R205	Resistor, 22K Ohms, 10%, 1 watt, Carbon	451-352223
R206	Resistor, Variable, 10K Ohms, 20%, 3/4 watt, Bias Adj.	025-002330
R207	Resistor, 10 Ohms, 5%, 1 watt, Carbon	451-351100
T201	Transformer, Power	052-001007
TP201	Tip Jack, Red	036-000304
TP202	Tip Jack, Blue	036-000307
	Baffle Board	078-001711
	Baffle, Felt	014-000476
	Cabinet	086-003437
	Cable (9-conductor)	087-007657
	Cable Assembly	087-007648
	Cable Clamp	076-202746
	Foot, Plastic (4)	018-201072
	Front Panel	068-001263
	Fuse Holder	006-200837
	Line Cord	087-104690
	Lock, Line Cord	076-100953
	Rear Panel	068-001404
	Speaker, 4 x 6 inch PM, 3.2 Ohms	085-000218

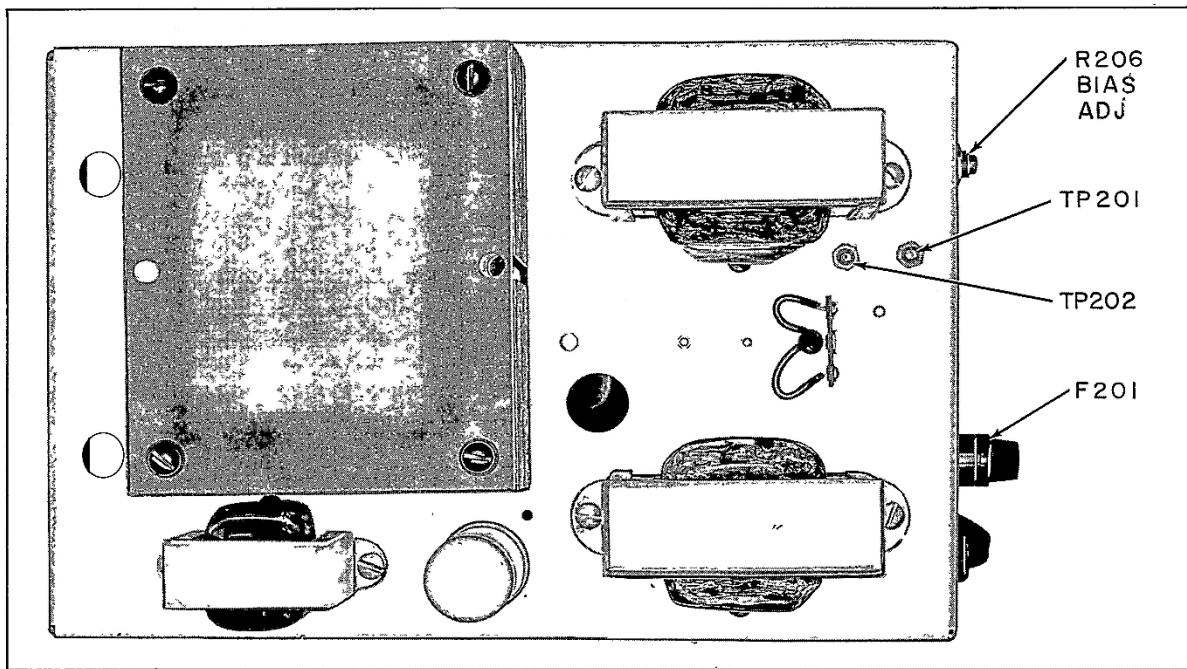


Figure 15. Top Chassis View of Model PS-150-120 AC Power Supply.

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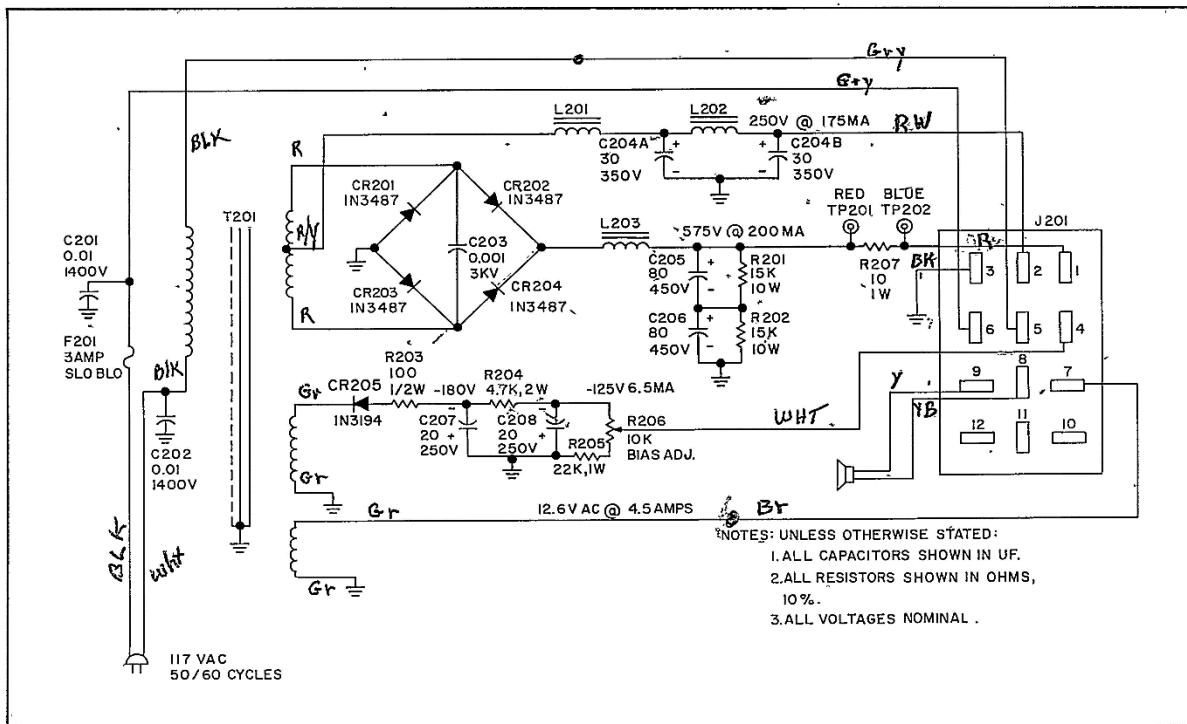


Figure 16. Schematic Diagram of Model PS-150-120 AC Power Supply.

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INSTALLATION AND SERVICE GUIDE

DC POWER SUPPLY MODEL PS-150-12

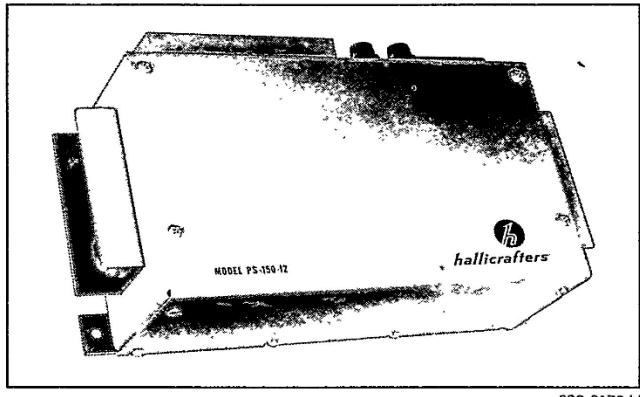


Figure 17. Hallicrafters Model PS-150-12 DC Power Supply.

10-1. DESCRIPTION.

Hallicrafters' Model PS-150-12 Power Supply is a complete, compact, self-contained power unit designed to permit Hallicrafters' Model SR-160 Transceiver to be operated from a nominal 12-volt DC source. This power supply is shipped for operation in conjunction with a negative-grounded power source. However, it is operable with a positive grounded source by changing two internal soldered connections as described in figure 19.

The Model PS-150-12 Power Supply, is designed to operate from a 11.6 volt to 16.0 volt DC source with 13.6 volt as nominal voltage.

All connections are made to the power supply through two terminal strips on one side of the unit (see figures 6 and 18). The two-connector strip (TS301) is used for connection to the 12-volt source through the wires supplied. The seven-connector strip (TS302) is used to supply the operating voltages to the transceiver and connects to the transceiver through the cable supplied with the Mobile Installation Kit Model MR-160 available as an accessory.

WARNING

LETHAL HIGH VOLTAGE IS PRESENT WITHIN THIS EQUIPMENT. BE CAREFUL WHEN INSTALLING THE UNIT, WHEN MAKING BIAS ADJUSTMENTS, AND WHEN PERFORMING CHECKS UNDER THE CHASSIS.

10-2. BIAS ADJUSTMENT.

After interconnecting the power supply to its proper power source and to the transceiver, the transmitter bias must be adjusted to achieve optimum performance of the transceiver.

1. Disconnect the high voltage (red/white) lead from pin 1 of TS302.
2. Connect an ammeter, with a full-scale deflection of 0-300 MA, between the high voltage lead and pin 1 of TS302.
3. Turn the transceiver on: OPERATION switch to SSB.
4. With no signal applied to the transceiver and the microphone button depressed, adjust the BIAS ADJ potentiometer, R308 on the side of the power supply chassis, for a reading of 60 MA on the meter.
5. Disconnect the meter and reconnect lead to pin 1 of TS302.

This adjustment is not necessary each time the SR-160 is used; however, it should be checked periodically and whenever the transmitter final amplifier tubes are replaced.

10-3. COVER REMOVAL.

Remove the nine screws on the top and one side of the unit and lift the cover off. This will provide easy access to all the components in the power supply.

REPAIR PARTS LIST

Schematic Symbol	Description	Hallicrafters Part Number
C301	Capacitor, 25 μ F, 50V, Electrolytic	045-000863
C302	Capacitor, 0.001 μ F, 3000V, Ceramic Disc	047-100397
C303,304, 306	Capacitor, 40 μ F, 450V, Electrolytic	045-000904
C305	Capacitor, 0.22 μ F, 10%, 600V, Mylar	046-001376
C307,308	Capacitor, 20 μ F, 250V, Electrolytic	045-000903
CR301,302, 303,304	Diode, Silicon, Type 1N3487	027-000314
CR305	Diode, Type 1N3194	019-002769
F301	Fuse, 15 Amperes, 23 Volts, 3AG	039-000707
F302	Fuse, 7.5 Amperes, 32 Volts, 3AG	039-000706
K301,302	Relay	021-000671
L301	Choke, Filter	056-000555
Q301,302, 303,304	Transistor, Type 2N441	112-000194
R301	Resistor, 7.5 Ohms, 10%, 10 watts, Wire Wound	445-032075
R302	Resistor, 220 Ohms, 10%, 2 watts, Carbon	451-652221
R303	Resistor, 100 Ohms, 10%, 7 watts, Wire Wound	445-022101
R304	Resistor, 100 Ohms, 10%, 1/2 watt, Carbon	451-252101
R305	Resistor, 1000 Ohms, 10%, 1/2 watt, Carbon	451-252102
R306,307	Resistor, 47K Ohms, 10%, 2 watts, Carbon	451-652473
R308	Resistor, Variable, 10K Ohms, 20%, 3/4 watt, Bias Adj.	025-002330
R309	Resistor, 100K Ohms, 10%, 1/2 watt, Carbon	451-252104
T301	Transformer, Power	052-000969
	Cabinet Cover	066-003454
	Cable Clamp	076-202744
	Clamp, Resistor (R301)	076-004121
	Cover, Terminal Strip (TS302)	066-003574
	Fuse Holder	006-200837

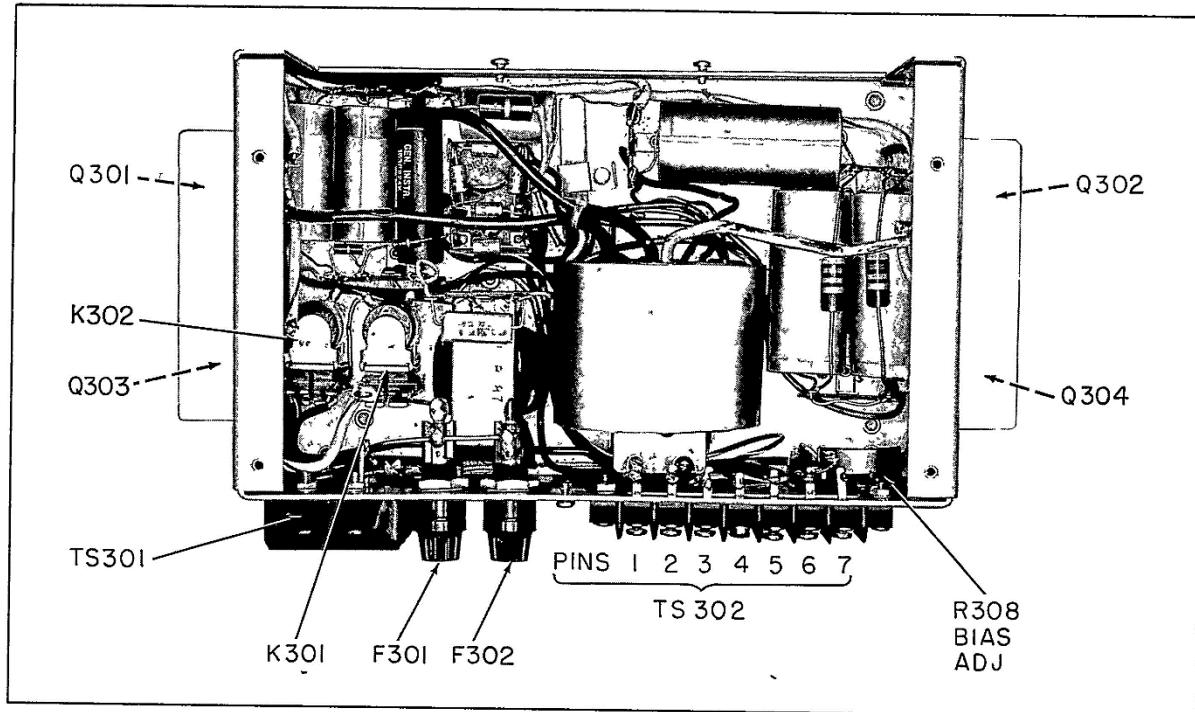


Figure 18. Internal Top View of Model PS-150-12 DC Power Supply.

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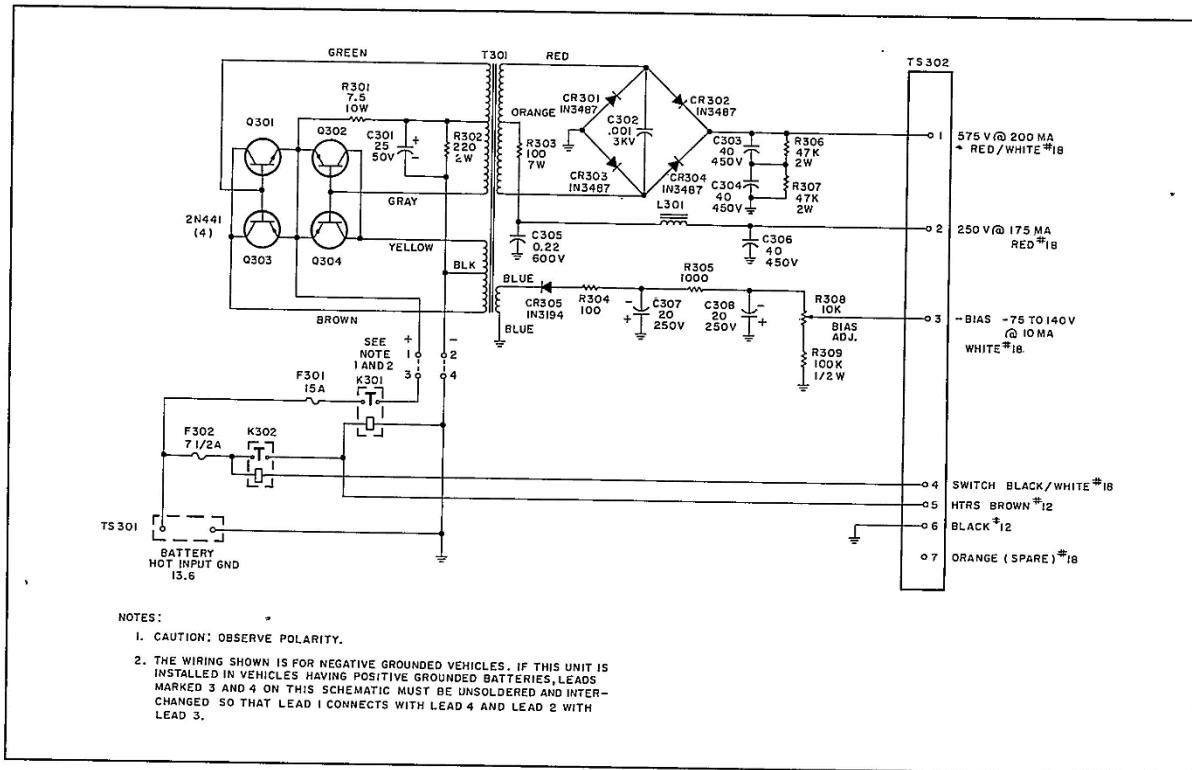


Figure 19. Schematic Diagram of Model PS-150-12 DC Power Supply.

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