

PRODUCTION TEST PROCEDURE

for

516F-2

AC POWER SUPPLY

522-1170-015

COLLINS RADIO COMPANY

CEDAR RAPIDS, IOWA

TM- 3951

Page 1 of 1 Cover Sheet Section

DATE	REV. NO.	REVISED BY	APPROVED BY	REVISED PAGE NUMBERS
3-17-73	—	C. Frenz	J. Ralston	RELEASED

1.0 SCOPE:

This Production Test Procedure applies to the Collins type 516F-2 AC Power Supply, CPN 522-1170-015. See TM-1193 for other 516F-2 Power Supplies.

2.0 REFERENCE INFORMATION:

2.1 Specifications:

516F-2 Equipment Specification, part no. 568-1956-00.
516F-2 Production Test Requirements, part no. 569-2491-00.

2.2 Publications:

516F-2 Instruction Sheet, part no. 523-0756-605.

2.3 Drawings:

516F-2 Schematic Diagram, part no. 544-2859-003.

3.0 TEST EQUIPMENT REQUIREMENTS:

The following equipment or their equivalents are required to perform the specified tests:

1. VARIAC, General Radio W20HM.
2. AC VTVM, Hewlett Packard 400 F.
3. Amateur Power Supply Tester, part no. 029-6396-00.
4. Meter & Load Panel, part no. 029-8121-00.
5. 516F-2 Adapter Cable.
6. Tapping Tool, 3/16" Dia. by 6" Long with cork tip.

4.0 TEST CONDITIONS:

Unless otherwise specified, all tests shall be performed under the following conditions:

4.1 Power Supply Voltage, Frequency, & Phase:

220V 60Hz single-phase.

4.2 Ambient Temperature, Humidity, & Atmospheric Pressure:

Prevailing factory ambient.

4.3 Warmup Period:

30 seconds.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	21	22	23	24	

5.0 PRELIMINARY TESTS:

5.1 Visual Inspection:

1. Check for shorts, wiring errors, & damaged or missing parts.
2. Check to assure that unit contains 2 amp fuse.

5.2 Continuity Check:

- 5.2.1 Check to see that the A-C power cable is wired correctly, green wire to ground and black wire to tip of fuse holder. With an ohmmeter, check to see that only the round pin of the power plug is connected to chassis ground.
- 5.2.2 Make ohmmeter checks across low voltage and high voltage supplies to assure that no shorts are present.
- 5.2.3 Check all power plug connections and high voltage terminal clearance to chassis and covers.

6.0 INITIAL ADJUSTMENTS:

6.1 Setup:

1. Set the controls as follows:

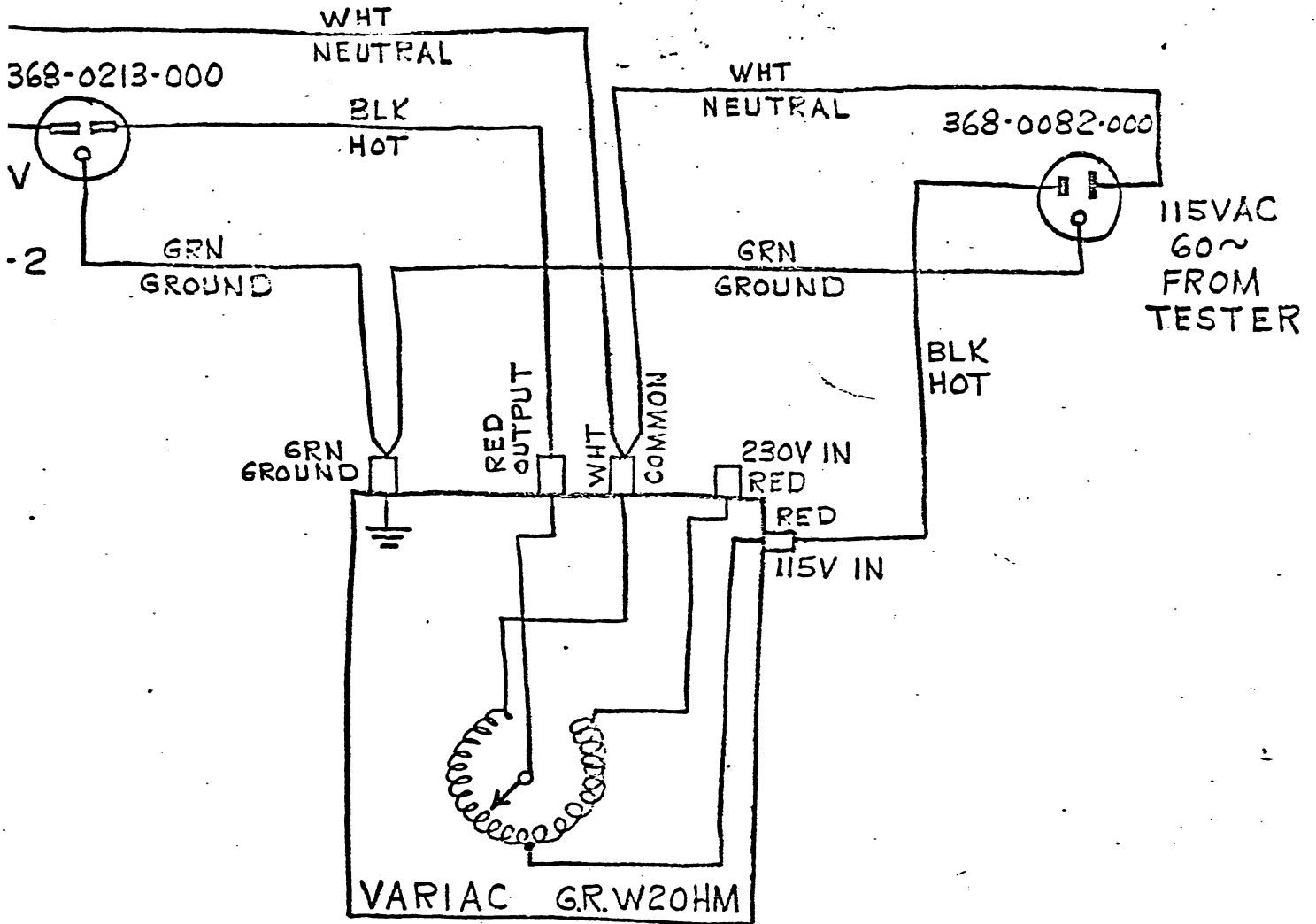
<u>UNIT</u>	<u>CONTROL</u>	<u>POSITION</u>
Unit under test	BIAS	midrange
Tester	AC/DC	AC
Tester	breaker	OFF
Tester	NORMAL/REVERSE	NORMAL
Tester	115V 60Hz	OFF
Load Panel	XMIT/REC	REC
Load Panel	516E LV	OFF
Load Panel	516E HV	OFF
Load Panel	AC	ON
Load Panel	MP	OFF
Load Panel	KWM-2S-LINE	KWM-2

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	21	22	23	24	

5.0 INITIAL ADJUSTMENTS: (Continued)

6.1 Setup: (Continued)

2. Install V1 (5R4), part no. 257-0142-00, & V2 (5U4), part no. 257-0109-00, in the 516F-2.
3. Connect the adapter cable to the output plug & the AC VTVM to the RIPPLE jacks.
4. Connect the power cord to the VARIAC and the VARIAC to the tester according to this sketch:



5. Disconnect the 516F-2 power cord from the VARIAC. Adjust the VARIAC for 220V, then reconnect the 516F-2 power cord. Readjust the VARIAC if necessary to maintain 220V.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	21	22	23	24
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7.0 TEST REQUIREMENTS:

7.1 Preliminary Tests:

As outlined in Section 5.

7.2 Initial Adjustments:

As outlined in Section 6.

7.3 Voltage Output:

1. Adjust the REC LV control for a 170mA LV MA meter indication & the REC HV control for a 55mA HV MA meter indication.
2. Set the LOAD CURRENT selector to the 300V & 1500V positions & record the panel meter voltage reading at each.
3. Set the 115V 60Hz switch off, set the XMIT/REC switch to XMIT, & return the 115V 60Hz switch to ON.
4. Adjust the XMIT LV control for a 210mA LV MA meter reading & the XMIT HV control for a 230mA HV MA meter indication.
5. Repeat 7.3.2 then set the LOAD CURRENT selector to 150V.
6. Rotate the BIAS Pot from end to end & record the panel meter voltage readings at each end.
7. Adjust the BIAS pot for a - 65Vdc panel meter voltage reading.
8. Set the LOAD CURRENT selector to 15V & record the panel meter voltage reading.

7.4 Output Voltage Ripple:

1. Rotate the LOAD CURRENT selector to the 150V, 300V, & 1500V positions and record the AC VTVM readings at each.

7.5 Near-Short Check:

1. Set AC line to 242 volts:
2. Wait 15 seconds, then tap each rectifier 3 times from one direction and 3 times from direction 90° from first direction. Use cork tipped tapping tool and look for arcs during tapping.
3. If tubes are OK, return AC line to 220 volts. If not OK, return AC line to 220 volts, set the 115V 60Hz switch to OFF, replace the defective tube, and repeat steps 7.3.1 through 7.5.3

7.6 Measure voltage at contacts of 621-7829 cable assembly.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	21	22	23	24	

PRODUCTION TEST DATA

FOR

516F-2

AC POWER SUPPLY

522-1170-015

Ser. No. _____

Date _____

Tech. _____

8.0 DATA SHEET REQUIREMENTS:

8.1 Preliminary Tests:

Visual Inspection _____ check
Continuity Check _____ check

LIMITS:

OK
OK

8.2 Initial Adjustments:

Setup _____ check

OK

8.3 Voltage Output:

Rec. LV, 170mA load _____ Vdc
Rec. HV, 55mA load _____ Vdc
Xmit LV, 210mA load _____ Vdc
Xmit HV, 230mA load _____ Vdc
Bias voltage, minimum _____ Vdc
Bias voltage, maximum _____ Vdc
BIAS pot set to -65 Vdc _____ check
Filament voltage _____ Vac

NMT 310 Vdc
NMT 970 Vdc
NLT 250 Vdc
NLT 690 Vdc
-40 to -60 Vdc
-75 to -105 Vdc
OK
6.3 ± 0.3 Vac

8.4 Output Voltage Ripple:

Xmit LV _____ Vac
Xmit HV _____ Vac
Xmit Bias _____ Vac

NMT 0.35 Vac
NMT 20 Vac
NMT 0.35 Vac

8.5 Near-Short Check:

Rectifiers do not arc _____ check

OK

8.6 Cable Assembly:

_____ Vac

NMT 126 Vac
NLT 104 Vac

DEPT 14 SECTION 355	
UUT CPN <u>522-1170-015</u>	
TECH STAMP	PROC REV <u>0</u>
	FISCAL WK _____

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	21	22	23	24	