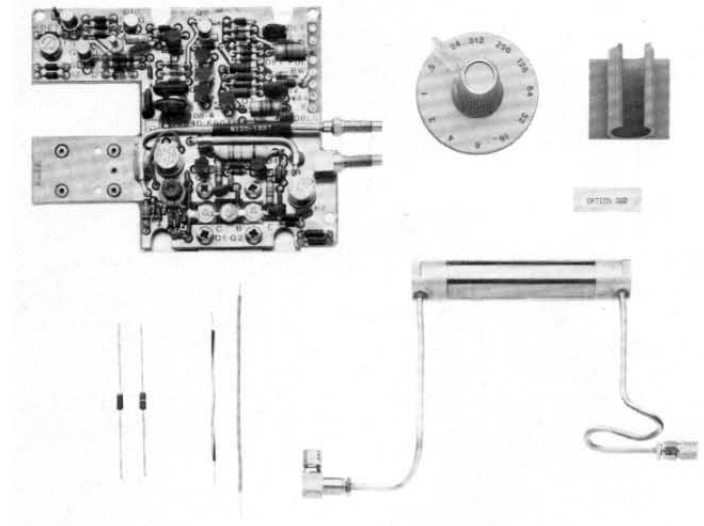


INTERNAL DOUBLER KIT FOR 8640A/B

11698A



JULY 1974

HEWLETT  PACKARD

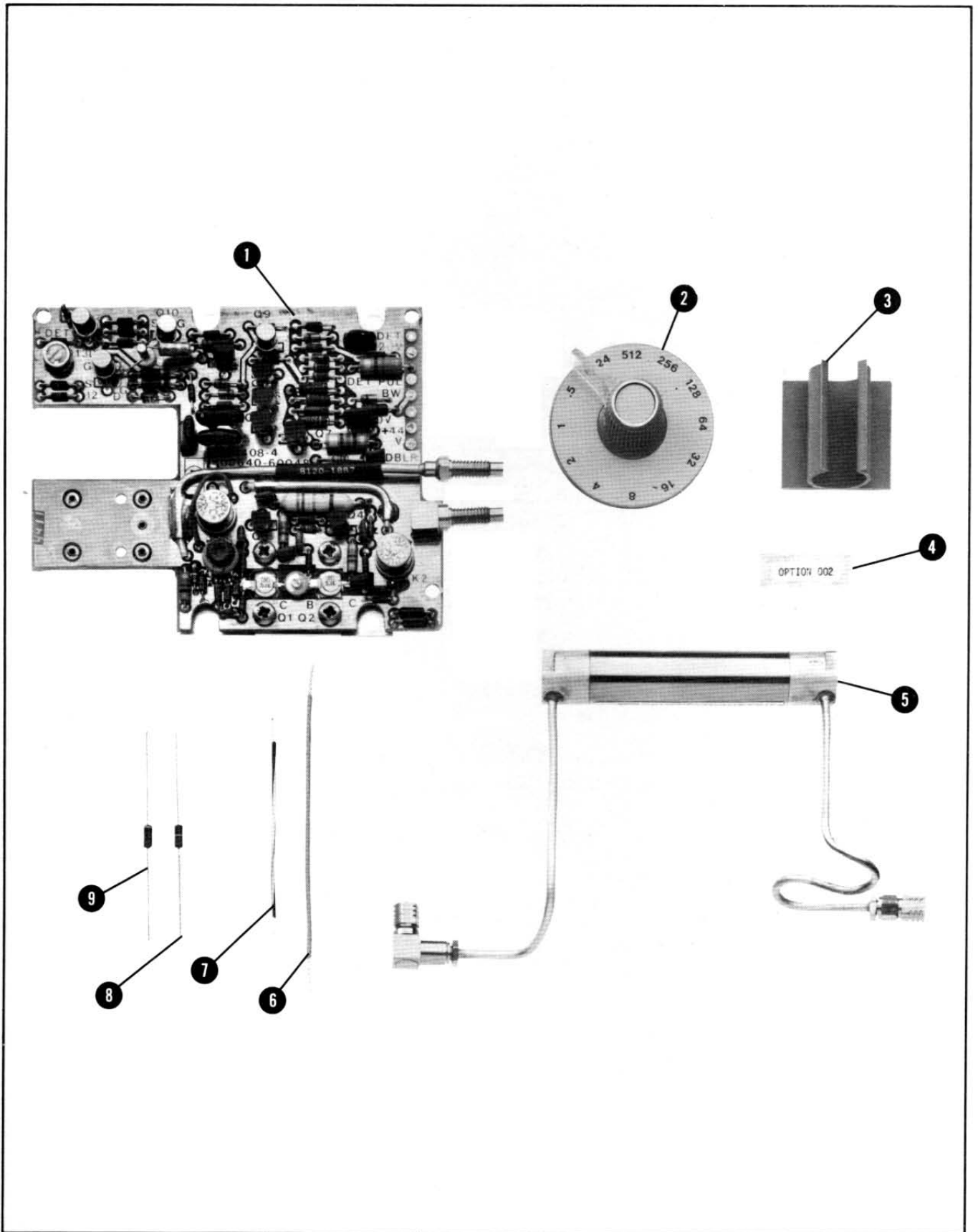


Figure 1. Model 11698A Internal Doubler Kit for 8640A/B

1. GENERAL INFORMATION

2. This Operating Note gives installation instructions for the Hewlett-Packard Model 11698A Internal Doubler Kit for Model 8640A/B Signal Generators. After adjustment and testing, the signal generator with the doubler kit installed will be equivalent in characteristics and operation to a factory configured 8640A/B Signal Generator with Option 002. Further operating, specification, and servicing information for 8640A/B Option 002 is contained in the appropriate operating and service manual, or Option 002 Manual Supplement.

3. The internal doubler can be easily installed in a standard 8640A or B. It cannot, however, be installed in an 8640B with Option 004 (the avionics option). Installation of the doubler kit

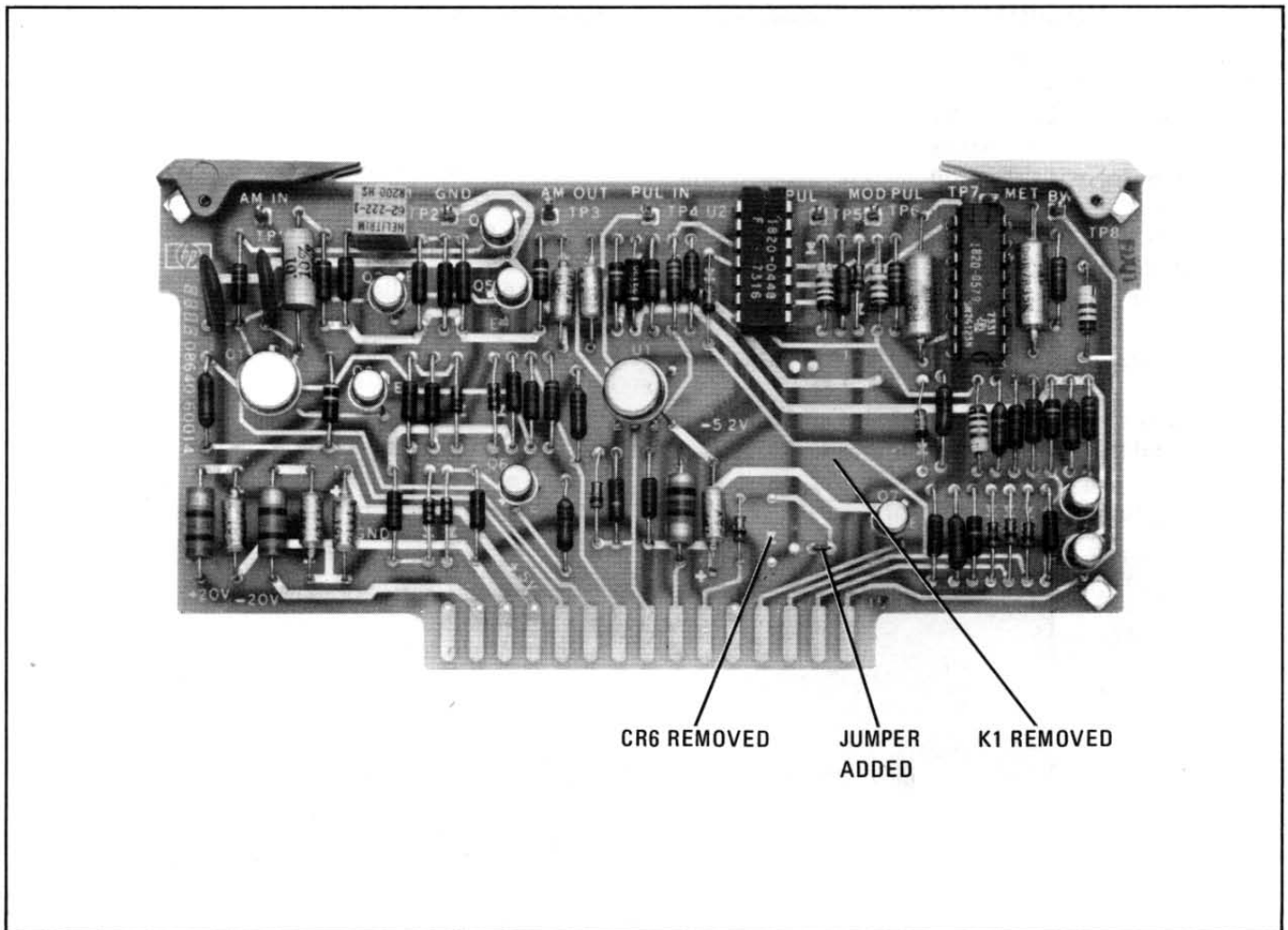
requires no special tools. After installation, a few simple adjustments will also have to be made. (See paragraph 29.)

4. The doubler assembly itself (A26A1) comes pretested from the factory, and the instrument with the doubler installed should normally meet specifications. However, to be absolutely certain of this, the tests listed in Table 2 should be performed. Since this may not be practical in some cases, those tests which are considered the most important are indicated.

5. The contents of the doubler kit are shown in Figure 1 and listed in Table 1.

Table 1. Parts List for 11698A Internal Doubler Kit

Item Number*	Reference Designation	HP Part Number	Description
1	A26A1	08640-60170	Output Amplifier, Doubler and AGC Detector Assembly
2	MP2	0370-2377	Knob, Frequency Range (Option 002)
3	MP67	1400-0558	Clip, Filter U
4		7120-4282	Label, Option 002
5	FL1	0955-0052	Filter, 1120 MHz Low Pass
6		8150-0451	Wire, 24 AWG Hookup (yellow)
7		8150-0476	Wire, 24 AWG Hookup (white-brown-yellow)
8	A26A4R5	0757-0290	Resistor, Fixed 6190 ohm 1% 0.125 W Film
9	A26A4R28	0698-3154	Resistor, Fixed 4220 ohm 1% 0.125 W Film
		11698-90001	Operating Note
		08640-90048	8640A (Option 002) Manual Supplement
		08640-90035	8640B (Option 002) Manual Supplement
* Refer to Figure 1			



*Figure 2. A26A2 AM Offset and Pulse Switching Assembly
Showing Components Removed and Jumper Wire Installed*

6. INSTALLATION PROCEDURE

7. Remove instrument top and bottom covers and top and bottom covers of A26 AM/AGC and RF Amplifier Assembly.

WARNING

The edges of the RFI gasket on the bottom cover of A26 may be sharp. Handle with care.

8. If instrument has serial prefix
8640A: 1342A and below, or
8640B: 1339A and below,

remove relay A26A2K1 and diode A26A2CR6 from A26A2 AM/Offset and Pulse Switching Assembly (refer to Service Sheet 13 in Operating and Service Manual), and install a short, bare jumper wire as shown in Figure 2. Note this change in the manual.

9. If instrument has serial prefix
8640A: 1342A and below, or
8640B: 1350A and below,
replace resistor A26A4R5 with 6190 Ω (HP Part No. 0757-0290) and resistor A26A4R28 with 4220 Ω (HP Part No. 0698-3154) on A26A4 AGC Amplifier Assembly (refer to Service Sheet 12). Note this change in the manual.

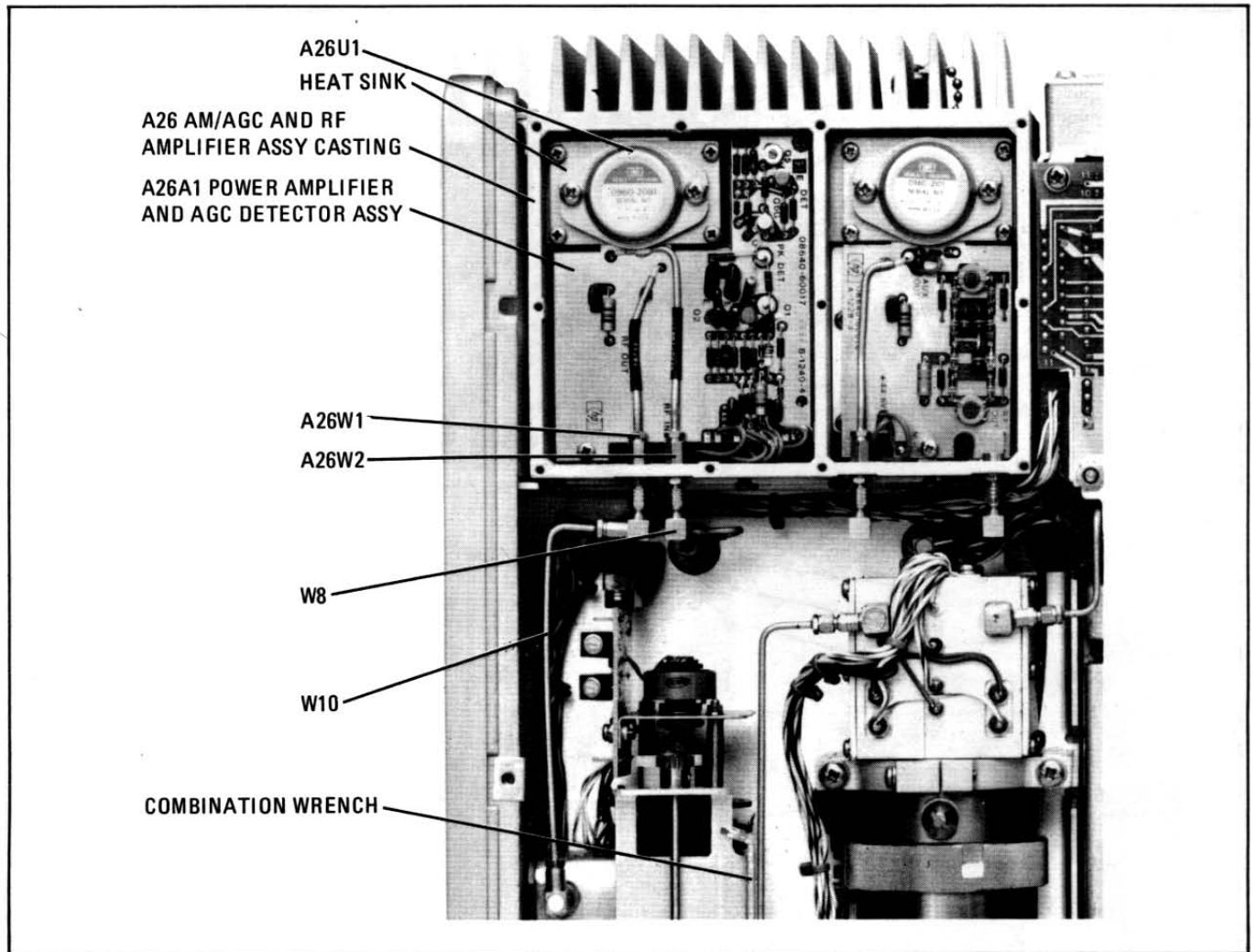


Figure 3. Bottom Internal View Without Internal Doubler (8640B shown)

10. Orient instrument with bottom facing up. Refer to Figure 3.

11. Remove A26U1 Output Amplifier which is secured with two screws.

12. Remove seven screws that secure A26A1 Power Amplifier and AGC Detector Assembly.

13. Remove two coax cables W8 and W10 that connect to A26A1. Use combination wrench provided in instrument.

14. Remove two nuts and washer that secure coax cables A26W1 and A26W2 to A26 casting.

15. Carefully lift A26A1 from A26 casting. Unsolder six leads from board.

16. Remove heat sink (2 screws) and install it on new A26A1.

17. Remove A26MP10 Filter/Amplifier Cover (4 screws) that lies beneath A26A1.

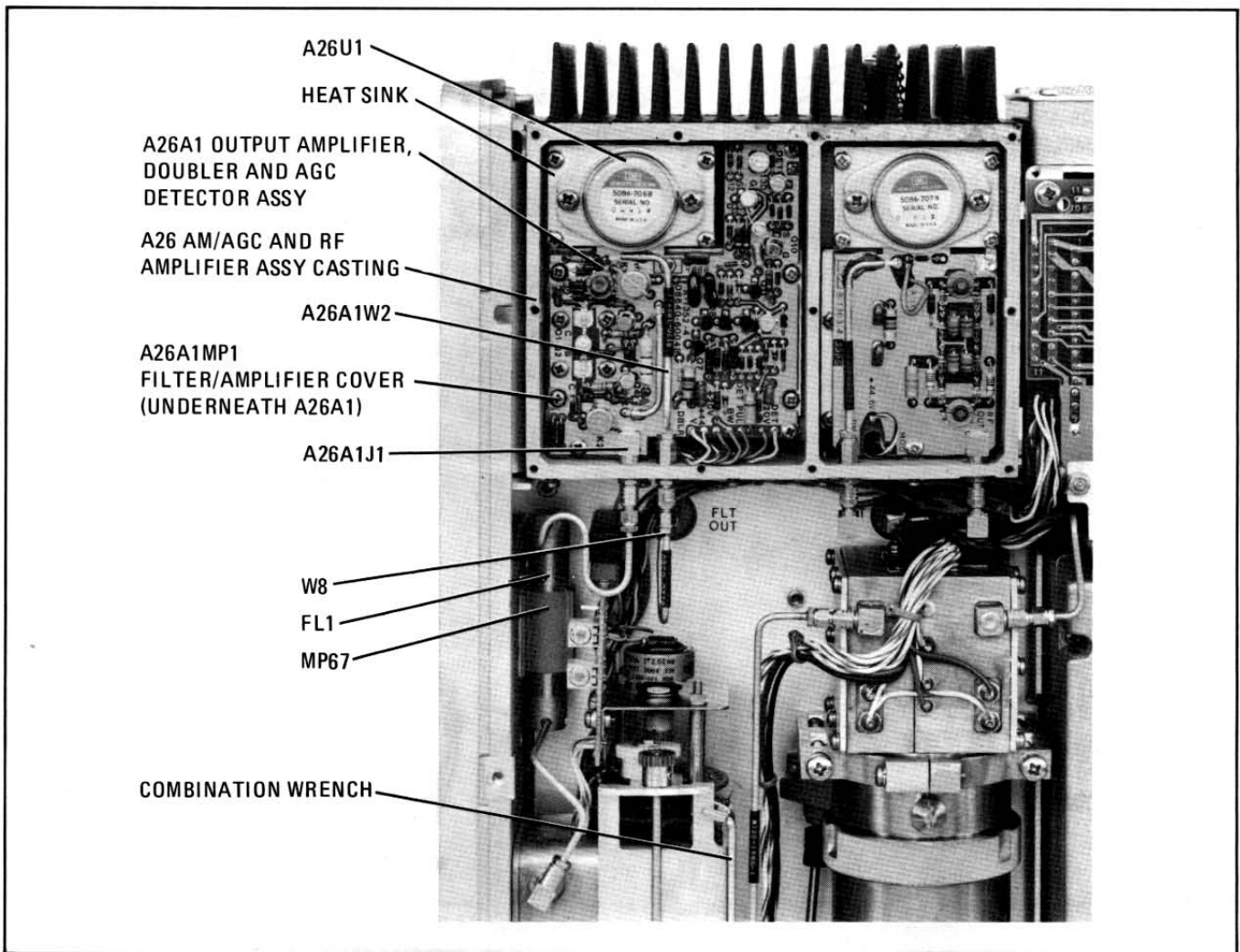


Figure 4. Bottom Internal View With Internal Doubler Kit Installed (8640B shown)

18. Solder yellow hookup wire (HP Part No. 8150-0451) to left most feedthrough capacitor which is located under Filter/Amplifier Cover.

19. Solder seven leads onto new A26A1 board (HP Part No. 08640-60170). Refer to Figure 4. The sequence of the wires is the same as for the feedthrough capacitors.

20. Remove A26A1MP1 Filter/Amplifier Cover from new A26A1 (4 screws) and install it in A26 casting in place of old cover. Try to avoid wiping off heat sink compound.

21. Install new A26A1 board in A26 casting (11 screws including 4 that hold the board to the Filter/Amplifier Cover). If the board does not fit

properly, loosen the screws that secure the Filter/Amplifier Cover to the A26 casting and reposition the assembly.

22. Secure two RF connectors (A26A1J1 and A26A1W2) with 1/4-inch nuts and lockwashers.

23. Reinstall A26U1 Output Amplifier (2 screws and washers).

24. Install 1120 MHz Low Pass Filter FL1 (HP Part No. 0995-0052) in place of W10. To do this snap U Filter Clip MP67 (HP Part No. 1400-0558) onto filter body; peel off adhesive backing from clip; install filter in place pressing clip firmly against middle deck; and secure RF connectors.

25. Reconnect W8.

26. Solder white-brown-yellow hookup wire (HP Part No. 8150-0476) between pins 3 and 16 of connector A9P1 on A9 Peak Deviation and Range Switch Assembly. A9 need not be removed. Simply work connector loose and orient so pins 3 and 16 are accessible.

27. Install Option 002 label (HP Part No. 7120-4282) near rear panel serial label.

28. Install Frequency Range Knob (HP Part No. 0370-2377) in place of old knob.

29. Perform the following adjustments. Refer to the Option 002 Manual Supplement.

- Doubler Band Flatness
- RF Detector Offset
- Output Level Vernier and Meter (Doubler Level only)

30. Perform the tests listed in Table 2.

Table 2. Performance Tests

Performance Test*	Range		Critical**
	0.5 - 512 MHz	512 - 1024 MHz	
Frequency Stability vs Load, Level, and Mode		X	
Harmonics		X	X
Subharmonics		X	X
Single Sideband Broadband Noise Floor		X	
Residual AM		X	
Output Level Accuracy		X	X
Output Level Flatness	X	X	X
Output Impedance	X	X	
Output Leakage	X	X	X
AM 3 dB Bandwidth		X	
AM Distortion		X	
Peak Incidental Phase Modulation		X	
Pulse Modulation		X	
Pulse On/Off Ratio		X	
Incidental AM		X	

* Refer to Option 002 Manual Supplement
 ** Refer to paragraph 4

CERTIFICATION

The Hewlett-Packard Company certifies that this instrument was thoroughly tested and inspected and found to meet its published specifications when it was shipped from the factory. The Hewlett-Packard Company further certifies that its calibration measurements are traceable to the U.S. National Bureau of Standards to the extent allowed by the Bureau's calibration facilities, or to the calibration facilities of other International Standards Organization members.

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MANUAL IDENTIFICATION

Model Number: 11698A
Date Printed: July 1974
Part Number: 11698-90001

This supplement contains important information for correcting manual errors and for adapting the manual to instruments containing improvements made after the printing of the manual.

To use this supplement:

Make all ERRATA corrections

Make all appropriate serial number related changes indicated in the tables below.

Serial Prefix or Number	Make Manual Changes

Serial Prefix or Number	Make Manual Changes

▶ NEW ITEM

ERRATA

Page 3, Table 1:

▶ Add A26A4R2 2100-2489 Resistor, Variable 500 ohm 10%.

▶ Add A26A4R34 and R35 0683-1055 Resistor, 1 MΩ 5% 0.25W.

Page 4:

▶ Add step 9a to read as follows:

9a. If instrument has serial number prefix

8640A: 1443A or below, or

8640B: 1440A or below,

replace A26A4R34 and R35 with 1 MΩ resistor (0683-1055) on A26A4 AGC Amplifier Assembly (refer to Service Sheet 12). Note this change in manual.

Add step 9b to read as follows:

9b. If instrument has serial number prefix

8640A: 1428A or below, or

8640B: 1442A or below,

replace A26A4R2 with 5000 ohm variable resistor (HP 2100-2489) on A26A4 AGC Amplifier Assembly (refer to Service Sheet 12). Note this change in the manual.

NOTE

Manual change supplements are revised as often as necessary to keep manuals as current and accurate as possible. Hewlett-Packard recommends that you periodically request the latest edition of this supplement. Free copies are available from all HP offices. When requesting copies quote the manual identification information from your supplement, or the model number and print date from the title page of the manual.