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 MODEL 1750B DUAL TRACE AMPLIFIER  
Serials Below 435-00176

## Increased Frequency Response

Increased high frequency response on the 5, 10, and 20 volt ranges can be obtained in the above instruments by changing the resistors indicated below:

Modification Procedure

Replace resistors R105 and R205 (0683-1005) with resistors R105 and R205 (0683-1805) 18 ohm 5% 1/4 watt.

Recalibration of the 5, 10, and 20 volt ranges will be necessary. See Paragraphs 5-20 thru 5-26 of your Operating and Service Manual.

Change the Replaceable Parts List and the schematic diagrams in your 1750B Operating and Service Manual to incorporate the above changes.

hp MODEL 1750B DUAL TRACE AMPLIFIER  
Serials Below 543-00616

Improved B Trigger Out  
Parts Kit 01750-69501

Improved B Trigger Out

The following modification improves the dc stability of the B Trigger Out Amplifier. Over a period of time dc drift can cause the amplifier to go into saturation.

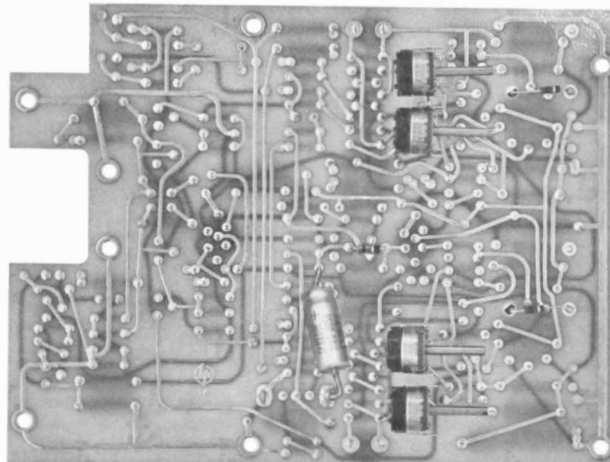
The bandwidth of the Trigger Amplifier after this modification is 5 cps to 2.5 Mc. Formerly it was dc to 2.5 Mc.

Components Included in Kit 01750-69501

| Ref. Desig. | Qty |                        | hp Part No. |
|-------------|-----|------------------------|-------------|
| R62         | 1   | R: 1 megohm, 1/8w, 1%  | 0698-3129   |
| R63         | 1   | R: 27 ohms, 1/4w, 5%   | 0683-2705   |
| R64         | 1   | R: 150 ohms, 1/8w, 1%  | 0757-0284   |
| R60         | 1   | R: 7.5k ohms, 1/8w, 1% | 0757-0440   |
| R59         | 1   | R: 511 ohms, 1/8w, 1%  | 0757-0416   |
| C55         | 1   | C: 50 $\mu$ f, 25vdcw  | 0180-0058   |
|             | 1   | Service Note           | 1750B-2     |

Modification Procedure

- a. Replace R62 (390K) with 1 megohm resistor.
- b. Replace R63 (33 ohms) with 27 ohm resistor.
- c. Replace R64 (300 ohms) with 150 ohm resistor.
- d. Remove CR51 (diode) and install R60 (7.5K ohm resistor).
- e. Connect a 511 ohm resistor (R59) between the base of Q11 and Pin 8 of V1 (cathode). See Figure 1.
- f. Connect a 50  $\mu$ f capacitor (C55) between the base of Q11 and ground. See Figure 1.
- g. Make the dc level adjustment (R65) as indicated in Section V of your hp Model 1750B Operating and Service Manual.
- h. Change the Schematic Diagram and Replaceable Parts List in your hp Model 1750B Operating and Service Manual to incorporate the above changes.



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hp MODEL 1750B DUAL TRACE AMPLIFIER  
Serials Beginning with 516-00426

Selected Transistor Replacement for Optimum Pulse Response

Transistors Q103 and Q104 are selected at the factory for optimum pulse response. The 2N709 (hp Part No. 1854-0009) is faster than the 2N2708 (1854-0005). The faster transistor improves the rise time but causes excessive overshoot in some of the above instruments.

If Q103 or Q104 is replaced, install the same transistor type as selected at the factory. The transistor type number is on the top of the transistor.

Recalibration is not necessary after replacement of the above components.

Change the Schematic Diagram and Replaceable Parts List in your hp Model 1750B Operating and Service Manual to indicate the proper transistor type and part number.

hp MODEL 1750B DUAL TRACE AMPLIFIER  
Serial Prefixes Below 516-

Improved DC Balance  
Parts Kit #01750-69502

The following modification improves the DC balance of the above instruments by adding a base current adjustment. Formerly there was only one balance adjustment and no provision for a vernier balance was made. After modification, the base current will be adjustable for no trace shift as the vernier is rotated.

This modification includes the addition of two variable resistors and replacement of two fixed resistors.

Components Included in Kit #01750-69502

| Quantity | Description            | Ref Desig  | hp Part No. |
|----------|------------------------|------------|-------------|
| 2        | 300k 5% 1/2w           | R131, R231 | 0686-3045   |
| 2        | 2.5M Variable Resistor | R129, R239 | 2100-1543   |
| 1        | Service Note           |            | 1750B-4     |

Modification Procedure

1. Remove R131 and R231.
2. Remove the right hand lead from both of the variable resistors as viewed from the lead side with the three contacts toward the top. The fourth lead is not electrically connected.
3. Bend up the center leads of both variable resistors at their center such that they point in opposite directions. Be careful not to bend too sharply and break them off. Do not bend at the point at which the right angle bend is already there.
4. Insert the third lead in the hole left by removing R131, located farthest away from the tube. Make an arc with the fourth lead. Drill a small hole at a point on this arc that does not touch the print on the circuit board.
5. Repeat step 4 for the other variable resistor around corresponding hole left by R231.

6. Trim the leads of the 300k resistors as follows:
  - a. At one end make the lead 1/8" long.
  - b. At other end make the lead 3/8" long and bend a right angle in it at its mid point.
7. Solder the bent end of the resistors to the bent lead of the variable resistor.
8. Insert the combination such that the 300k resistor (short end) goes in the hole nearest the tube. The remaining variable resistor lead goes in other hole, and the fourth lead of the variable resistor goes into the hole drilled in the pc board. Do this for both combinations.
9. Solder the 300k resistors and variable resistors in place.

Adjustment Procedure

Channel A

Short the junction of R123, CR101 to pin 3 of V101. Adjust R129 until there is no movement of the trace with rotation of the VERNIER. Remove the short and reset the trace with the DC BAL to the same position on the screen as when the short was in place.

Channel B

Repeat as in Channel A using the junction of R223, CR201, and pin 3 of V201A. Use R229 for adjustment.

Insert the above adjustment procedure in Section V of your hp Model 1750B Operating and Service Manual in place of the dc balance procedure.

Change the schematic diagram and Replaceable Parts List as indicated in Table 1.