

hp Model 175A Oscilloscope
Serial Prefix 530- and Below

Improved Complex Waveform Triggering
Parts Kit # 00175-69502

This modification improves the complex waveform triggering in the above instruments.

Improvement is accomplished by installing a new trigger source switch which has a pot on it which allows selection of hold-off time. Varying the hold-off time sets the Rep Rate of the sweep so the oscilloscope triggers on the same part of the waveform every time, therefore, eliminating multiple triggering. One situation which shows multiple triggering is a gated pulse train waveform in which all trigger signals have the same amplitude. After modification the sweep mode control will have the following functions:

a. At clockwise, in detent, the sweep will free-run.

b. At all points out of detent, the trigger circuit will be preset, while rotation counterclockwise will reduce the hold-off time. Most waveforms will be observed at a counterclockwise setting of the sweep mode potentiometer. Observation will be improved because the trace will be brighter at this setting.

Parts included in Kit # 00175-69502

Description	hp Part No.
Trigger Source Switch	175A-19J
24" white/yellow wire 22 ga	NSN
16" white/violet wire 22 ga	NSN
Service Note	175A-12

MODIFICATION PROCEDURE

Step 1: Remove bottom cover from oscilloscope and locate the trigger source switch.

Step 2: Locate resistors R1001, 1006, 1007, and 1008. They are soldered at one end, in pairs, to two switch contacts. With cutters, remove the portion of the switch contacts that touches the wiper of the sweep time switch. Contact is made on both sides of the wiper. Make sure that both contact sides are removed on both contacts. See Figure 5-4 of the Operating and Service Manual for resistor location.

Step 3: Remove and discard R158 (1 megohm) and C129 (47 pf).

Step 4: Remove V101 for access to trigger source switch.

Step 5: Remove knobs and locknut from switch.

Step 6: Unsolder all wires from existing trigger source switch.

Step 7: Remove and discard old switch.

Step 8: Solder the Black/White wire just removed from the old switch to the ungrounded end of the 20k resistor on the new switch.

Step 9: Install the new trigger source switch such that the potentiometer terminals point toward the bottom of the oscilloscope. Loosely attach the nut to hold the new switch in place.

Step 10: Install a 24-inch White/Yellow wire from pin 21 of the horizontal plug-in jack. Run it along the existing cable beside the plug-in compartment to the Trigger Source Switch location.

Step 11: Solder one end of the 16-inch White/Violet wire to both contacts from which parts were removed in Step 2. Run wire along cabling of Step 10 to Trigger Source Switch location.

Step 12: Solder all remaining wires removed in Step 6 and both of the new wires of Steps 10 and 11, as shown in Figure 1.

Step 13: Reinsert V101 and tighten the switch in place. Add the knobs. The red knob should point to 5:00 o'clock when the potentiometer is rotated clockwise into the detent position.

Step 14:

a: Make the Adj described in Paragraph 5-49 on Page 5-10 in the Operating and Service Manual, with the following changes.

Step 5-49c Rotate Sweep Mode out of detent.

Step 5-49d Rotate R170 slowly cw while watching voltmeter. Meter will jump when sweep free-runs.

Step 5-49e Note voltage at which sweep generator free-runs (maximum negative reading).

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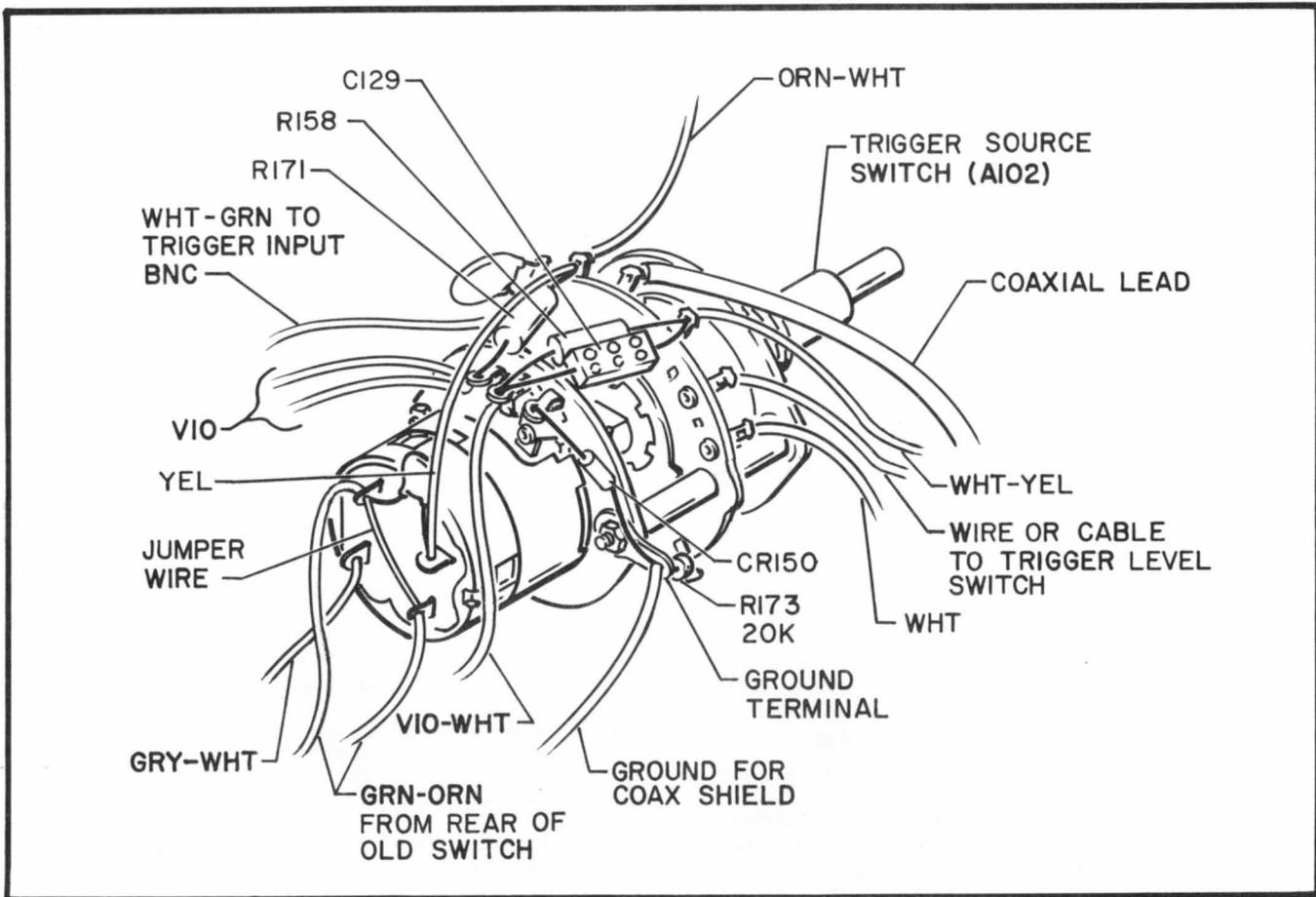


Figure 1. Modification Locations

Change the above adjustment steps to insure proper adjustment in future.

b. Make Trigger Sensitivity and Symmetry Adjustments as described in paragraph 5-50 of Operating and Service Manual.

Step 15: Make the following changes to the Replaceable Parts Lists in your Model 175A Operating and Service Manual.

Add	CR150	1902-3356
	R150/S103	2100-1794
Change	A102	175A-19J
	A101	175A-19K
	A1002	175A-65Y

Step 16: Insert the following schematic with the Sweep Generator Schematic Figure 5-22 in the Operating and Service Manual.

Step 17: Check Oscilloscope operation by performing Performance Check steps 5-14 through 5-17 Page 5-2 in the manual.

Delete	R172/S103	2100-0348
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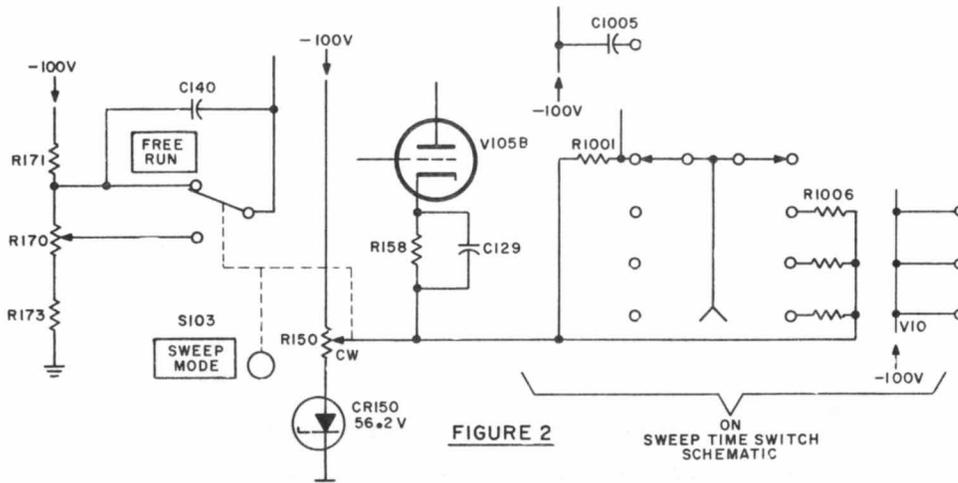


FIGURE 2