

SUPERSEDES:

P-08690-6029
27 OCT 1967,
15 AUG 1967, and
APR 1969

**HP PART NUMBER 08690-6029
HELIX AMPLIFIER MODIFICATION KIT
for
HP MODEL 8690A SWEEP OSCILLATORS**

Serials Below 803-02061

HP MODEL 691, 692, 693 and 694 SWEEP OSCILLATORS

All Serials

This Service Note outlines three procedures for installing a modification kit adding a tuning voltage filter in HP Model 8690A Sweep Oscillators, serials below 803-02061; in all HP Model 691-4A/B Sweep Oscillators; and in all HP Model 691-4C/D Sweep Oscillators. This filter improves start of sweep tracking ability of HP Model 8410A Network Analyzer.

**PARTS INCLUDED IN MODIFICATION KIT
08690-6029:**

Qty	Description	HP Part No.
1	Capacitor, fixed mica, 5600 pF, 5%, 200 VDCW	0160-2196
2	Resistor, fixed metal film 10K ohm, 1% 1/8 watt	0757-0442
1	Capacitor, fixed, 220 pF, 10%, 500 VDCW	0140-0031
1	Wire, white-orange-yellow, 24 AWG, 3 inches in length	8150-0487
1	Shrink tubing, 1 inch in length	0890-0030
1	3-prong terminal strip	0360-0015
2	Lock washer, #4 internal tooth	2190-0004

MODIFICATION PROCEDURE FOR 8690A:

1. Disconnect line power. Remove top and bottom covers.
2. Remove A3 and A4 circuit board assemblies.
3. Note two 4-40 machine screws; one is located near each end of A4 assembly socket. Remove machine screw that is located closest to RF unit installation hole.
4. Using machine screw just removed from instrument, mount 3-prong terminal strip to interconnection assembly A7. Note: There are two #4 lock washers supplied in this kit; one should be placed on screw between screw head and 3-prong terminal strip and the other between sheet metal and A12 assembly socket on bottom side of instrument where machine screw fastens to socket.
5. Solder 5600 pF capacitor between one end and center terminal of 3-prong terminal strip. Solder 10K ohm resistor between two end terminals of 3-prong terminal strip.
6. Note two wires connected to terminal pins between A3 and A4 assembly sockets. The white-orange-yellow wire is going to have to connect to the 10K ohm resistor on the 3-prong terminal strip. The junction of the 5600 pF capacitor and 10K ohm resistor is going to connect to the terminal pin that the white-orange-yellow wire was connected to.

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To make connections, proceed as follows:

- a. Leaving a long enough length so that the white-orange-yellow wire can connect between terminal pin and junction of resistor and capacitor, cut white-orange-yellow wire in wiring harness. Solder cut end to 3-prong terminal strip at junction of resistor and capacitor.
- b. Solder one end of white-orange-yellow wire, supplied in this kit, to white-orange-yellow wire in wiring harness. Place shrink tubing, supplied in this kit, over solder joint.
- c. Solder white-orange-yellow wire from wiring harness to end terminal of 3-prong terminal strip which has resistor alone connected to it.

diode which may or may not have been placed on circuit board). If A1CR15 is on board, solder 220 pF capacitor across it; if A1CR15 is not on board, solder pF capacitor into board where A1CR15 would have been.

MODIFICATION PROCEDURE FOR 691-4C/D:

1. Disconnect line power. Remove top cover.
2. Remove A4 circuit board assembly from instrument.
3. Refer to Operating and Service Manual for location of terminal pin test point 8. Solder 220 pF capacitor between terminal pin test point 8 and grounding pin of A4V5 which is between A4V5 pins 1 and 9.

MODIFICATION PROCEDURE FOR 691-4A/B:

1. Disconnect line power. Remove top cover.
2. Refer to Operating and Service Manual for location of diode A1CR15 ("starred value"

These modifications do not require any recalibration. Make manual corrections to indicate the circuit changes and the added parts as shown in the partial schematics of Figure 1.

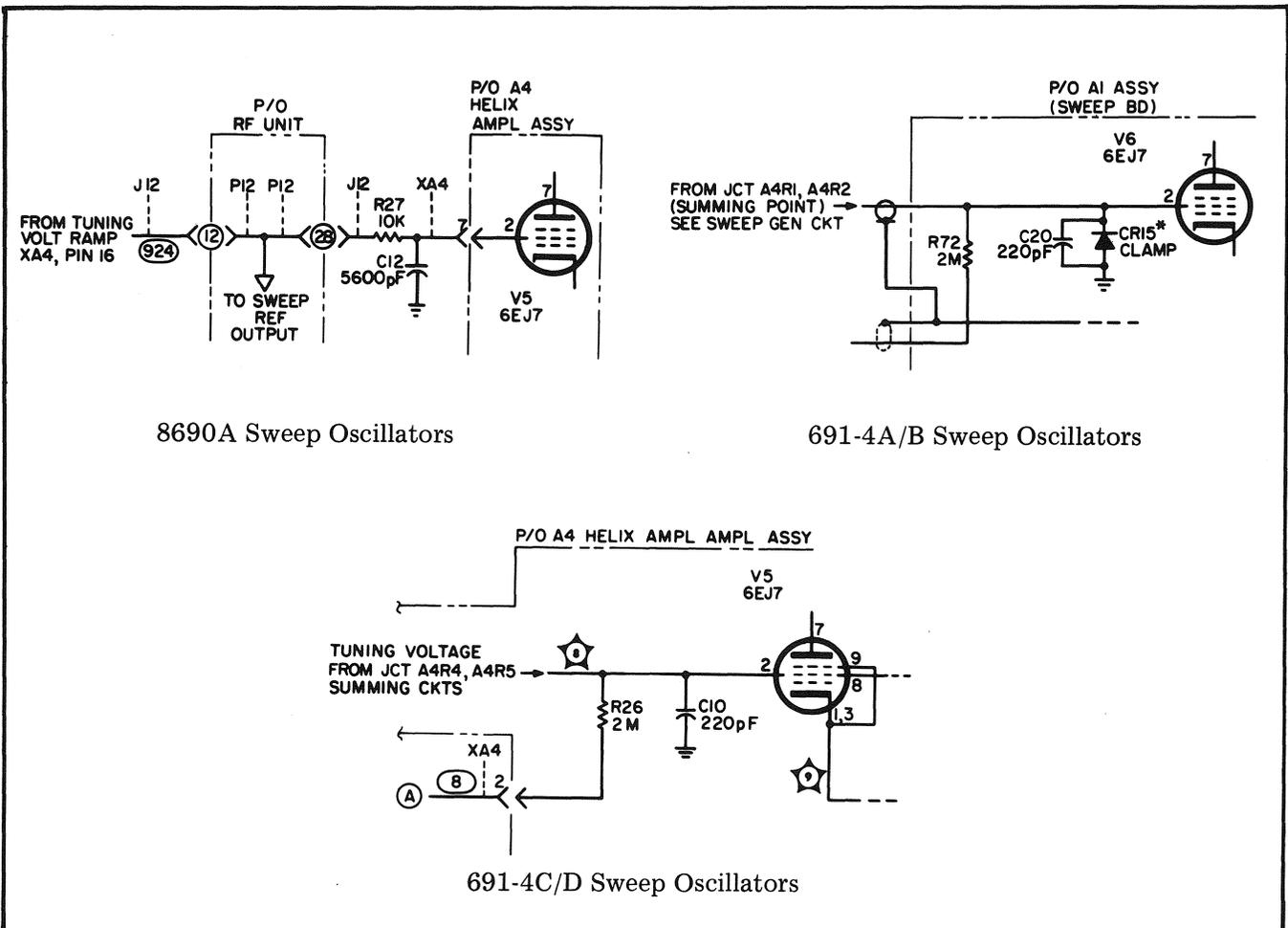


Figure 1. Partial schematics of Helix Amplifier Modification