

## TS-4 CONVERSION:

Circuit differences between the TS-4 and TS-4A are minor and modification can be easily accomplished if desired. These changes are incorporated to improve the calibration accuracy of the sweep oscillator, and to reduce long time drift of the sweep section. After the modification is completed, the Controllable Inductor bias current will be increased slightly, raising the center frequency closer to correct calibration. Use of a heavier duty selenium rectifier on the bias circuit will tend to minimize rectifier voltage loss due to heat rise within the unit, stabilizing bias current and thus the sweep frequency over long operating periods on one frequency. If either or both of these tendencies have been encountered, the modification will be worthwhile. If the present instrument is accurate and drift is not a problem, modification is not recommended. The changes are accomplished as follows:

- ( ) Remove the 18 K ohm 1 watt resistor connected from terminal L1 to L2.
- ( ) Install a 15 K ohm 1 watt resistor from L1 (S) to L2 (S).
- ( ) Disconnect the wires from selenium rectifier terminals G1 and G2, and remove the rectifier.
- ( ) Install a standard type 65 ma (or larger) selenium rectifier at location G, mounting with the positive terminal up, farthest from the chassis, and with both terminals toward terminal strip L. The terminal nearest the chassis will be G1 and the positive terminal farthest from Chassis G2. Rectifier mounting can best be accomplished by using a long 6-32 bolt through opening G from the top of the chassis, the rectifier, a lockwasher and nut. Make sure none of the rectifier stacks or terminals touch the chassis or any part of the wiring.
- ( ) Connect the wire from control Q5 to rectifier G1 (S) nearest the chassis.
- ( ) Connect the wire from terminal strip L2 to rectifier positive terminal G2 (S).

This completes the conversion of your Heathkit TS-4 Television Alignment Generator.