

December, 11, 1957

TO: ALL AUTHORIZED DYNACO DEALERS:

SUBJECT: Using KT-88 Tubes in the Mark II Dynakit  
Mark II to Mark III Conversion

It is possible to use KT-88 tubes in the Mark II Dynakit just as in the Mark III. The only changes required are those which permit adjustment of the bias to the proper value for the KT-88 tube.

Two capacitors are required of 50 mfd value with a working voltage rating of at least 75 volts (regular 150 volt items are satisfactory). One of these replaces the present 100 mfd capacitor which goes from potentiometer lug #2 to ground. The second is added to the circuit with its negative end connected to the negative terminal of the selenium rectifier, and its positive end connected to ground (lug #3 on the lug terminal strip makes a convenient ground point). These capacitors permit obtaining the increased negative voltage which is required for the KT-88's.

The bias is set by adjusting the potentiometer until the voltage across the 12 ohm 1 watt biaset resistor is 1.68 volts. (If it is desired to have a voltage of 1.56 volts for use of a battery for accurate voltage setting, the 12 ohm resistor should be replaced with one of 11.2 ohms 1 watt (available for \$.75 through Dynaco).) In a few cases, the potentiometer range will not permit reaching the proper bias voltage. If the biaset voltage (across the 12 ohm or 11.2 ohm resistor) is too low, it is necessary to decrease the present 10,000 ohm resistor which goes from the bias potentiometer to ground. 6800 ohms is a suitable value. If the biaset voltage cannot be made low enough, the 10,000 ohm resistor should be increased to 15,000 ohms.

The above changes are all that are required to substitute KT-88 tubes for the 6CA7/EL34 tubes. It is also possible to make a few additional changes to adopt the same circuit as used in the new Mark III kit. One of these changes is the insertion of a 1.5 henry, 200 ma filter choke (in place of the present 50 ohm filter resistor). This choke is available for \$1.50 net. The other change is the insertion of a GZ-34 rectifier tube in place of the 5U4GB. The GZ-34 eliminates surge on warmup, but it makes the operating voltages in the Dynakit slightly higher. In the event that its use is desired in areas where line voltage does not exceed 117 volts, it can be directly substituted. However, if line voltages exceed 117 volts, the increase in internal voltages is dangerous for the 500 volt electrolytic capacitor. To use a GZ-34 under these conditions, it is recommended that the 525 volt capacitor as furnished with the Mark III be used. This is available at a net cost of \$3.30.

Additional copies on request from R. Mark Markman Company,  
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