

### MDD GENERATOR-TWO PACKAGE SYSTEM VIBRATOABLE

#### LC Oscillator With Vibrato

Assembly MG-4(B) includes a vibrato oscillator, vibrato circuitry, and a high frequency LC oscillator used to drive the MDD generator.

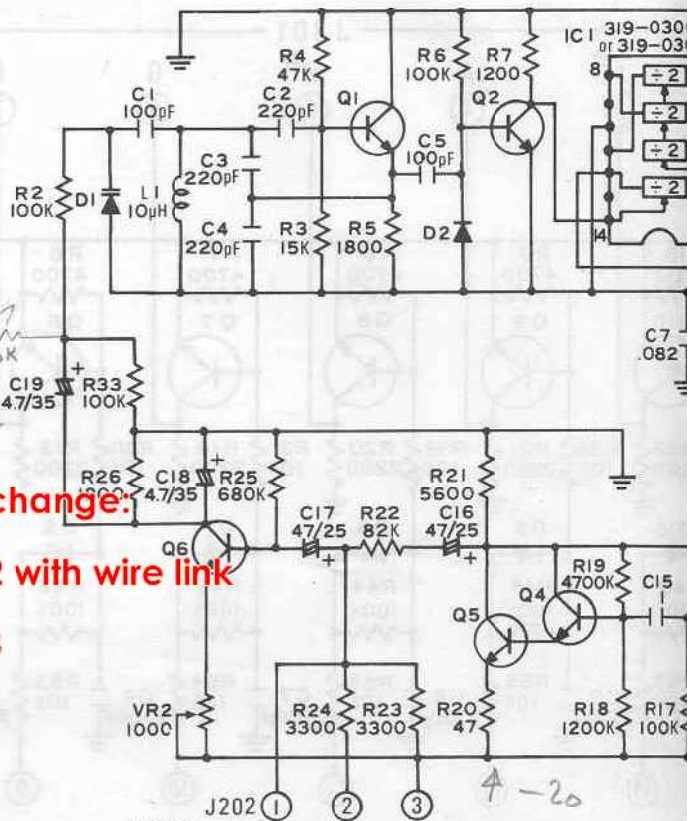
The vibrato oscillator is a phase shift type, comprised of C13, C14, C15, R16, R17, R18, R19, R20, R21, VR1, Q4, and Q5. VR1 is used to adjust the oscillator's frequency. The vibrato signal is coupled through C16, R22, and C17 to the base of transistor Q6, where it is amplified. (Its width being controlled by VR2.)

Vibrato may be turned off by connecting J202-1 to -20V (J202-3), and may be reduced for "Vibrato I or Vibrato II" by connecting R24 through J202-2 to -20V. To achieve a better sine wave the vibrato signals is filtered by C18 and is then coupled to the LC oscillator circuitry by C19.

The LC oscillator is comprised of L, D1, C1, C2, C3, C4, R3, R4, R5, and Q1, and is a Colpitts type. D3, a varicap diode, is used to vary the oscillator's frequency for vibrato and tuning control; As the voltage at the junction of R2, C1, an D1 becomes more negative, the capacitance of the varicap diode increases, and the oscillator frequency decreases. Since the cathode of the varicap is normally (with no vibrato) at ground potential and the anode is held at -5.6V by D4 and R1, the capacitance of the varicap remains constant, and stability of the oscillator is maintained. Capacitor C1 is used to isolate the D.C. bias on the varicap from the tank circuit. L1, with C3, C4, C1 and the varicap diode oscillator at 4.0048 MHz. R4 and R5 supply a bias voltage for Q1. The oscillator signal is coupled through C5 to buffer amplifier Q2 which drives I.C. 1.

TUNE 8  
R1 56K  
C19 4.7/35  
Q1

- Two things to change:**
- 1) replace R12 with wire link
  - 2) remove R13



- \*NOTES
- 1 D1 306-05001 1S2206
  - D2,D3 306-01017 1S2473
  - D4 337-06014 RD-5.6EB
  - Q1 305-03014 2SC373
  - Q2 THROUGH Q6 305-03040 2SC945Q
  - 2 UNLESS OTHERWISE SPECIFIED:  
ALL RESISTORS ARE IN OHMS, ±5% 1/4WATT.  
ALL CAPACITORS ARE IN MICROFARADS.
  - 3 ① SYMBOL DENOTES NUMBERS IN PLUG.

MDD Gene

I.C. 1, a si  
input sign  
the MDD  
driven by  
this I.C. is  
by C7.

I.C. 2 and  
I.C. 2 gen  
"Cx" and  
I.C. 3 doe  
buffer Q3  
signal for t

