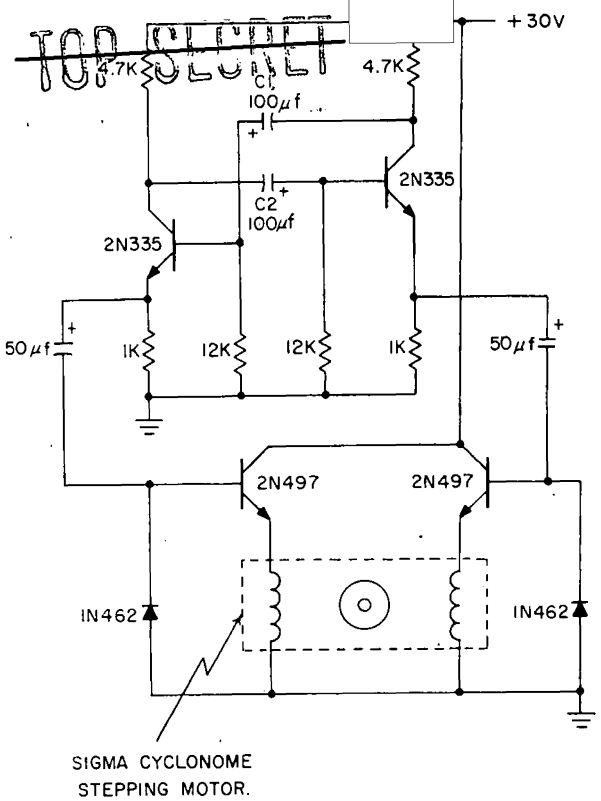
IDEAS FOR DESIGN



Slow speed multivibrator takes only 50 mw to drive stepping motor.

A Slow Turn With Little Power

We needed to rotate a commutator assembly at 2 rpm, but the available power was very limited.

We used a Sigma Cyclonome stepping motor to provide the mechanical force to actuate the commutator. The Cyclonome delivers torque in discrete steps on command. The motor has two 13.5 ohm coils. Pulsing the coils alternately causes the motor to move 18 degrees per pulse.

The driving circuit uses two 2N335 transistors as a slow speed multivibrator. Output from the multivibrator emitters, drives a pair of 2N497 medium power transistors. They send current pulses to the Cyclonome coils, in step with the multi.

Speed can be regulated by varying *C1* and *C2* in the multi circuit. With the components shown in the circuit, the Cyclonome motor rotates at 2 rpm, but the speed can be varied by changing the multi frequency. The 1N462 diodes prevent a dc voltage buildup on the 50 μf coupling capacitors.

The entire device consumes 50 mw, quite a bit less than the 4 or 5 watts needed for conventional motor and gear drives.

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