

6) COMPARATOR CIRCUIT

The comparator circuit consists of differential comparator circuit and switching transistor and it is to compare the level of the saw tooth wave 4) and that of reference voltage 5) to each other so that there will be on-off pulses available. off-pulse is obtained when the height of saw tooth wave is lower than the level of reference voltage while on-pulse when the former is higher than the latter: a variation of the frequency (that of the motor's rotation number) is converted into an average variation of the output pulse.

7) LOW-PASS FILTER

The low-pass filter is a 2-stage CR primary low-pass filter that is to have the output pulse of comparator circuit be smoothed.

8) AMPLIFIER CIRCUIT ②

The amplifier circuit is to amplify the output of low-pass filter to apply it to the hall device.

9) POSITION DETECT CIRCUIT

The position detect circuit serves to detect N-pole or S-pole of the rotor magnet by means of hall device so that it can determine the sequence by which 4 drive coils will be given a current one after another. Meanwhile, voltage applied to the hall device is regulated by the control circuit described in the steps 1) to 8) above and output voltage of the hall device is varied according to a variation of the rotation number of motor.

10) DRIVE CIRCUIT

The drive circuit is the one which amplifies the output of hall device to have a current run in the drive coil.

11) FEEDBACK CIRCUIT

The feedback circuit is to carry out a negative feedback operation from the drive circuit to the amplifier circuit ②, thus letting the entire operation of control circuit be more stabilized.

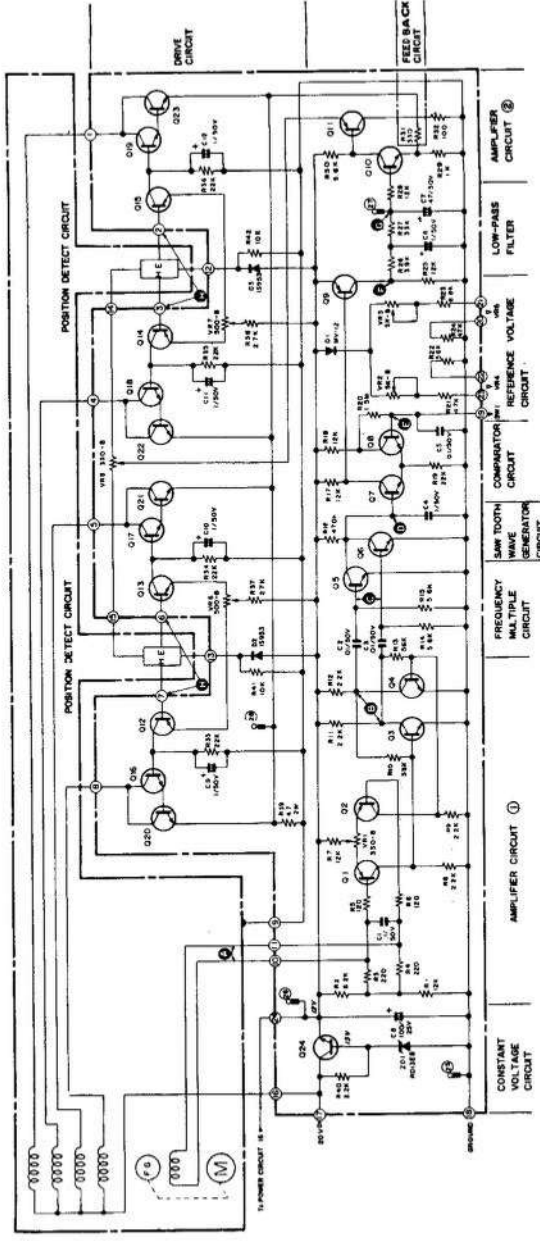


Figure 5-1

CIRCUIT MOTION WHILE THE ROTATION NUMBER BEING VARIED

Circuit Motion while the Rotation Number Being Varied
In which, $N_1 > N_2 > N_3$

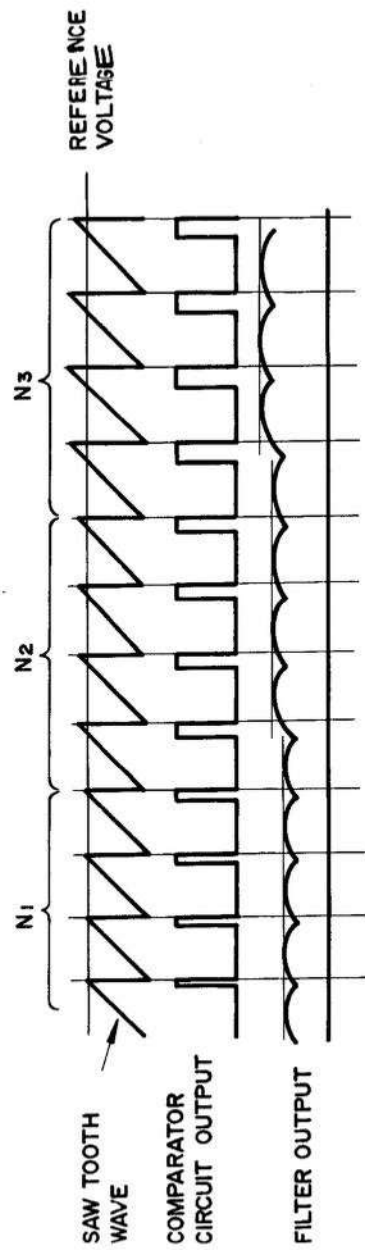


Figure 5-2