# ADJUSTMENTS
# FAST 4 & 5

**VR1 VIBRATO SPEED**
Vibrato speed may be adjusted using a small regular screwdriver. Proper speed is between 6-7 Hertz with the Vibrato speed tabswitch set in the Fast position.

**VR2 VOLTAGE**
This adjustment is carefully set at the factory! Readjustment should not be necessary unless Power Supply components are replaced. To adjust, connect a D.C. voltmeter to supply voltage "A", then set the adjustment so that the meter reads +12 volts. Improper voltage adjustment will result in unstable tone generator operation. Always check the "A" supply voltage before servicing tone generators.

**VR3 STABILITY**
The stability adjustment is carefully set at the factory! Readjustment should not be necessary unless Power Supply components are replaced. This adjustment has a wide range of normal operation. Only extreme settings on this adjustment will result in unstable Power Supply operation.

**VR5-VR9, VR12 & VR13 FILTERS**
These adjustments are carefully set at the factory! Readjustment should not be necessary unless Filter components are replaced. To adjust a filter: First, connect an A.C. voltmeter across the speakers in the amplifier to which the organ is connected. Then, with a clip lead, ground the transistor collector lead of the filter requiring adjustment. While the filter is grounded—and using one flute tabswitch at a time —locate a group of dead keys on the keyboard and hold down one key at or near the center of this group. Next, while holding the note, remove the clip lead from the filter transistor. Now with the note playing, adjust the A.C. meter range so that the meter needle reads near center scale. (Use any meter range and organ volume combination that is convenient.) With the note still playing, set the filter adjustment to a point that gives the maximum increase in A.C. voltage.

**VR10, VR11 PERCUSSION LENGTH & ATTACK**
These two adjustments affect each other. Adjustment of either one changes the other. Proper adjustment is achieved when the percussion functions with the least key pop and with a distinct difference in percussion length between short and long percussion tabswitch settings. Extreme adjustment of either length or attack will result in **no percussion.** Always try adjusting percussion before servicing the percussion circuits.

**L1 TUNING**
The 12 Tone Generator Master Oscillator circuits determine the pitch of the entire organ. Adjusting any one of the Master Oscillator tuning adjustments will tune all the notes of that tone generator. Tuning any group of 12 notes automatically tunes the entire organ.

Tuning may be accomplished by using a small nonconductive screwdriver and one of the following methods:

1. Set of 12 Tuning Forks: Zero beat the note of the organ to be tuned to the sound of the corresponding tuning fork. This is a highly accurate method for tuning.
2. Strobo Conn or Strobo Tuner: This is done by visual observation of a strob pattern. Simply follow directions supplied with the Strobotuner. This is a highly accurate tuning method.
3. Another instrument: Zero beat the note of the organ to be tuned to the sound of a corresponding note on an "in tune" instrument (piano, organ, accordion, etc.) Accuracy is dependent upon the tuning of the other instruments. This method is especially desirable when the other instrument is to be played with the organ.
4. One Tuning Fork: One tuning fork is used to set the "temperment" (one note). The other 11 notes are set by ear using the number of beats between "4ths" and "5ths". This requires a trained ear. Accuracy is dependent upon the tuner.