

## Equipment Arrangement

Place the amplifier on the bottom, the capacitor cabinet next, and the frequency generator on the very top.

## Operating Instructions

Warning: Do not allow children to have access to this device while it is in operation or otherwise. The voltage within the cabinet can reach high levels and should be considered dangerous.

1. Before plugging in the amplifier and the frequency generator into an electric outlet, make sure that:
  - A. The amplifier ON/OFF switch is OFF and the frequency generator ON/OFF switch is OFF.
  - B. **The amplitude, or "AMPL" knob on frequency generator is turned fully counterclockwise to "MIN" position. THIS IS CRITICAL!!!**
  - C. All 16 (A-P) toggle switches are OFF (down position).

On the Frequency Generator, plug in the black cable in the socket which reads "Output 50Ω".  
Follow the wiring diagram for the three components

2. Plug the wires to the coil into the red and black binding post sockets on the right side of the of the cabinet, do not unplug them or any wires from the generator or the amplifier while either is powered on. Move the coil **at least 6 feet (2 m) away from any sizable metal objects and all other electronic devices including the amplifier and frequency generator.** The magnetic field made by the coil can damage electronic equipment by inducing electric current to flow through circuits.

Plug in the amplifier, and the frequency generator into a 120V (240V in Europe) outlet, or power strip.

3. Use the **Switch Calculator program** on the supplied CD or thumb drive to determine the toggle switches to turn on (in the up position) for the frequency you want. Copy the Switch Calculator program from the CD or thumb drive and paste it in your Documents. Open the switch calculator folder. Right click on the icon with the three colorful blocks and create a shortcut. Place it on your desktop. Open the Switch Calculator program by clicking on the shortcut. In the "Desire Freq" box type in the frequency you want, and use your mouse arrow to click the "calculate" button, or hit Tab then Enter. The toggle switches you will need to flip up are displayed close to the bottom in the box "Switches to turn ON". The switches are given in two formats; arranged like the switches on the cabinet, and also in rows of letters. Set the correct toggle switches on the capacitor cabinet to the "on" or up position.

4. Do the following in this order:

A. **Frequency generator** – Turn on power to frequency generator. Enter the frequency you want to run. Use the "Wave button to choose the sine curve icon on the display. This icon looks like a sideways S (looks like~). Enter the desired frequency, push "SHIFT" button and "0" to keep the frequency in memory. Flip up the correct toggle switches. Push "OUTPUT ON" button, the green light will come on. The frequency you set must match the switches you turn on or the coil machine will not operate. On the amplifier, turn up the gain knobs to maximum.

B. **Always carefully and VERY SLOWLY turn the "AMPL" knob on the frequency generator clockwise until the panel meter shows 13 amperes** with a QSC RMX 4050a amplifier. The amperage increases quickly so watch the meter. **DO NOT EXCEED 13 amps! Be sure to view the meter from a direction perpendicular to the face of the meter.** (Below frequencies of 150 Hz and above 2000 Hz, the meter might not be able to reach 13 amps so operate with the amperage you can get.

**Turning up the "AMPL" knob quickly is equivalent to large voltages (push of the current) into the capacitors, so turn the knob in a gradual manner and not in an abrupt jump. TURNING THE AMPL KNOB UP RAPIDLY IS EQUIVALENT TO A LIGHTNING STRIKE FOR THE CAPACITORS – THEY WILL FAIL BY BURSTING AND SMOKING.**

5. The capacitor cabinet is now operating. For lower frequencies the coil hums loudly. If your hearing is sensitive you may want to use earplugs when the capacitor cabinet is turned on.

6. You will hear the built-in cooling fan of the amplifier run faster after a few minutes of operation. You can reduce heating of the amp and the coil by not exceeding 13 amps on the amperes meter. A good indicator of not overloading the system is if the fan in the amplifier begins the higher speed (it is louder) at 3 to 4 minutes. It is normal for coils to get warm or hot. **Twenty nine (29) minutes is the maximum recommended use time under 1,000 until the coil has cooled. Due to created heat in the large coil, do not exceed 6 minutes with frequencies over 1,000. Smaller coils are built for higher frequencies, from 1,000-2,200.**

#### 7. BEFORE CHANGING FREQUENCIES

- A. Turn the "AMPL" knob (on function/frequency generator) all the way to the left (counterclockwise) to "Min" setting and the "OUTPUT ON" button off.
- B. Turn the two "Gain" knobs on the amplifier all the way counterclockwise.
- C. NEVER FLIP ANY CAPACITOR SWITCHES until you have completed A and B.
- D. Turn all toggle switches off.
- E. Enter the frequency into the Instek frequency generator.
- F. Then set the correct toggle switches for the new frequency.

#### 8. Startup procedure

- A. Install by inserting then twisting the black coax cable on right receptacle of the frequency generator (Output 50Ω).
- B. Turn on power to frequency generator.
- C. Enter desired frequency, push "SHIFT" button and "0" to keep frequency in memory.
- D. Flip up the correct toggle switches.
- E. Push "OUTPUT ON" button, the green light will come on.
- F. Turn on power to the amplifier.
- G. On the amplifier, **turn gain knobs together to maximum slowly.**
- H. The amperes gauge on the switch box will rise to 4-6 amps.
- I. **Very slowly** turn the "AMPL" knob to the right until the amperes gauge reads 13 amperes (turn very slowly to prevent a power surge to the capacitors in the switch box).

#### 9. Shut down procedure:

- A. On the Frequency Generator turn the "AMPL" knob fully counterclockwise
- B. Turn both amplifier gain knobs fully counterclockwise
- C. Push the "OUTPUT ON" so you see no green light
- D. Turn off Frequency Generator.
- E. Only turn off the Amplifier if the fan is blowing cool air.

10. In thunder and lightning storm season it is good practice to use a quality surge protector and unplug it from the wall outlet during storms.